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Psychology of Colors in Marketing. A Data Analysis of Greek Historical Advertisements

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Abstract:- The psychology of colors associated with persuasion is one of the most interesting aspects of marketing. The way a color affects one's psychology depends on many factors, such as genes, environment, gender, age, education, and social context. Color as a valuable tool and an integral part of marketing communication directly affects our subconscious and attracts or rejects us with its hidden meaning. Marketing experts affect consumer behavior with integrated marketing communication through various market research.

The main purpose of this paper is to analyze the most popular methodologies and algorithms to segment and classify a series of the most symbolic, popular and emblematic historical Greek advertisements based on topics of alcohol and perfumes according to color that is being used in them. Then the collected data are analyzed from Google Cloud's Vision API and transformed to assume suitable form for the execution of the respective machine-learning algorithms provided by the software package *WEKA*. In conclusion, color segmentation according theories of psychology can be promoted and evaluated also by neuropsychological assessment tools and the findings of the present project can be possibly further expanded.

Keywords:- *Cognitive Psychology, Marketing, Advertisement, Data Mining, Google Vision API, Weka.*

I. INTRODUCTION

The psychology of colors is linked to the concept of persuasion and, as such, has prompted the interest of marketing scientists and professionals. The way colors affect the psychology of individuals is a function of factors such as genes, gender, age, education, social context, environment, etc. Empirically speaking, colors are valuable tools for product design and identifying businesses, products and services. In addition, they are an integral part of marketing communication, as they are known to affect people subconsciously, leading them through their "secret" and "hidden" meaning to consumer preference or rejection. Proper color choice in a product's logo and much more in its advertising contribute to a large extent to their acceptance by the consumer. Given this knowledge, marketing experts, through surveys, are now able to influence consumer preference and behavior. Research and statistical analyzes conducted using data mining algorithms have led scientific thinking and experience to interesting color gradations and their effects on the individual. However, the color classification of ads is still in the embryonic stage. The main objective of this article is to analyze the most popular methodologies and test those algorithms that will rank a large number of advertisements in a depth of time beginning in the mid-20th century. and it reaches today. In this context, the rhetoric and the representation of advertisements and, inevitably, their evolution over time are discussed here.

1.1. People, products and colors

The importance of color is, for centuries, a determinant factor of human taste and an indirect symbolic element of a person's social position in society. A typical example of this is the purple color in the clothing of the Byzantine Empires. The relationship between commodity and / or marketing with color begins from the moment when the importance of packaging to product diversification and consumer choice is realized, and secondly, the importance of logotype, that is, the "trademarks" of the products. In addition, the consciousness of the role of color in advertising - energy or action that historically coincides with the emergence of the commodity society - begins at the time it appears in print media and later in television advertising. Since then, either in the design of a product or in its promotional marketing, marketers and advertisers, in a market context characterized by intense product confusion and the resulting competition, they take into account in their decisions the importance of color in consumer preference. Advertising experience converges to the view that color ads attract more than black and white the attention of the reader / viewer to the projected. Generally speaking, however, colors are thought to cause people a certain sense and specific reactions even in their bodies, which confirms a variety of research in the psychology field.

1.2. Chromatology Theories

In this section we list the most famous color mixing typologies, namely, the basic colors and their combinations.

- **The RGB (Red, Green, Blue)**

In the RGB model, basic colors are Red, Green and Blue, that is, the colors that cannot be derived from blending other colors, as is the case with the rest. These three colors, through combinations, create, as secondary colors, Yellow, Blue and Purple (figure 1).

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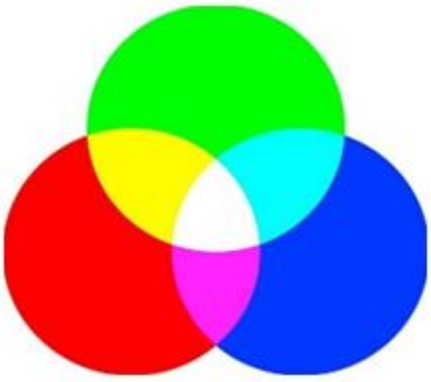

Figure 1: Model RGB

- **The RYB (Red, Yellow, Blue) model**

This is the model used in painting, which we find in Goethe's "color scheme" - see below. The basic colors of this model are Red, Yellow, and Blue, which combine to create Orange, Purple, and Green as secondary colors (figure 2).

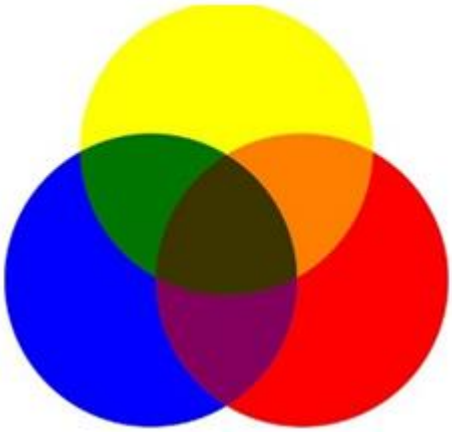

Figure 2: Model RYB

- **The CMYK (Cyan, Magenta, Yellow, Black)**

It is widely used in the printing of various forms and / or advertisements. The main colors here are Cyan, Magenta, Yellow, and Black, which is referred to as Key, meaning Key. With these three colors, the secondary colors are created: Red from Magenta and Yellow, Green from Yellow and Blue and Blue from Lght Blue and Magenta (figure 3).

Figure 3: Model CMYK

- **Goethe's color scheme**

In the early 19th century, Goethe created his own paint system. By questioning the scientific basis of Newton's analysis of light, his interest was centered on the psychological effects of colors on humans. Its purpose was to explore the rules governing the artistic use of color. Initially, Goethe planned a color wheel to find later found that his views were best expressed through an equilateral triangle. In this triangle (figure 4), the primary colors were Red, Yellow and Blue - and in the Model see vertices of the triangle with the number 1. The other divisions of the triangle are grouped into secondary triangles (where number 2) and triangular triangles (where number 3). For Goethe, the secondary colors represent the mixture of the two primary colors of the triangles on each side, while the tertiary colors mix the main triangle next to it and the secondary triangle opposite it.

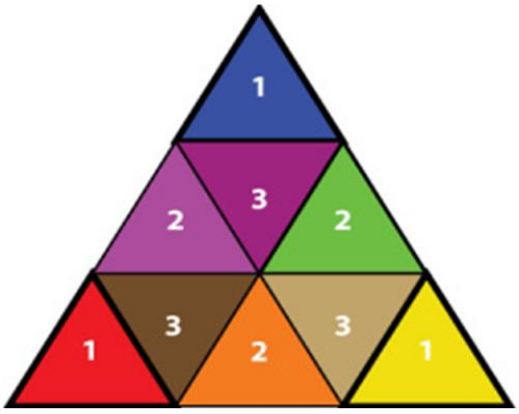

Figure 4: Goethe's code

The purpose of his analysis was to understand the human reaction to color. Thus, his research marks the beginning of modern color psychology, where each triangle corresponded to a "facet" of the human brain, which made it associate each color with some emotion: the blue with the understanding that it believed to cause calm mood, red festive mood and tendency for imagination, yellow concern, etc. Finally, he argued that the emotional content of each color should be taken into account by artists.

1.3. The effect of colors on consumers

It is a general assumption that color directs our eye to where to look and how to interpret what it sees. Color attract attention, influence moods, clarify and accentuate elements of the environment *(Huang et al., 2008; Teller & Bornstein, 1987)* but also affect participant's short-term memory *(Huang et al., 2008; Bynum, Epps, & Kaya 2006)*. In addition, color places the content of what we look at in a context and helps us decide what is important and what is not. Also, color plays an important role in marketing since it influences the creation of brand image *(Huang et al., 2008; Tavassoli, 2001)*. Moreover, when people knew how brands were attempting to manipulate impression, people considered colors congruent with those impressions to be more appropriate (*Huang et al., 2008; Bottomley & Doyle, 2006)*. A consistent use of print color can contribute to the maintenance of positive brand equity; especially for Chinese

brand names can print color become an effective retrieval cue for meaning which may influence repetition for purchases (*Huang et al., 2008; Tavassoli, 2001).*

A relative study finds that 90% of instantaneous consumer decisions are based on colors, while 80% of them believe that color increases brand awareness. In the same direction, most advertisers, for many years, believe that color affects the success of a campaign and, inevitably, the demand for the products displayed.

By looking for patterns of color use and acceptance on the internet, the views of graphic design professionals refer to a "emotion guide". Based on this guide, there is a match between the colors and the impressions (or feelings) they produce *(Nijdam, 2006)*:

Red	energetic, attentive, exciting and aggressive
Yellow	happy, friendly, positive and energetic
Orange	fun, playful, kid, happy, energetic, modern
Blue	trustworthy, safe
Green	reliable, refreshing, restful, soothing
Brown	stable, safe, durable
Beige	durable, classic, neutral
Bordo	elegant, expensive
Pink	romantic, soft, tender
Purple	mysterious, sensual, royal
Light purple	nostalgic, thin
Grey	classic, timeless, soothing
White	innocent, simple, clean, sterile
Black	elegant, serious, bold, powerful

Table 1: Colors and Feelings (All Colors)

1.4. Colors and logos of companies and products

There are many research articles on the importance of color factor in the happy acceptance of a logo by the consumer *(Chang & Lin, 2010)*. On various freelance websites offering marketing services, one can find ready-made research models on the range of acceptance of a new brand by the public *(Cunningham, 2017)*. But let's look at the relationship of colors and logos as well as the impressions or sensations they cause to the public.

• Red = Urgent

Positive emotions	Potential, love, passion, energy, power, warmth, desire
Negative emotions	Anger, danger, warning

Table 2: Colors and Feelings (Red)

Figure 5: Logos with red color

Red is considered the color of power and passion. It catches people's attention and keeps it alive for a long time (Figure 5). Fatal thus, it is the most popular color in the field of product identification. It creates a sense of urgency, which favors sales. It opens the appetite for food (which is why it is often used by fast food chains). At the level of neurophysiology, it stimulates the nervous system, increases blood pressure and heart rate, mobility, excitement and passion (Table 2).

• Blue = Confidence

Positive emotions	Calm, security, integrity, peace, dedication, trust, intelligence
Negative emotions	Cold, fear, manliness

Table 3: Colors and Feelings (Blue)

Figure 6: Logos with blue color

Blue is a favorite color of men. It evokes a sense of security, and confidence, which is why it is often chosen by banks, social networks and businesses (Figure 6). As a sense it is associated with serenity, water, reliability, while stimulating productivity (Table 3).

• Yellow = Optimism

Positive emotions	Brightness, energy, warmth, happiness, joy, vivacity, hunger
Negative emotions	Irresponsibility, instability, anxiety, anger, warning

Table 4: Colors and Feelings (Yellow)

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Figure 7: Logos with yellow color

Yellow is a strong color but at the same time identified with danger. It is one of the happiest colors and usually excites (Figure 7). However, overuse can cause stress. It is often used to attract the attention of people who do not intend to buy (Table 4).

• Green = Nature

Positive emotions	Calm, freshness, nature, environment, new, money, wealth, fertility, health
Negative emotions	Jealousy, guilt

Table 5: Colors and Feelings (Green)

Figure 8: Logos with green color

Green is a versatile color. It is considered warm and welcoming and it evokes pleasant emotions. Its use is identified with health, tranquility, money and wealth (mainly in the US due to the green color of the notes), goodwill, but also with nature, the environment (Figure 8). It is used in shops to relax customers and to promote environmental issues. Green stimulates harmony in the brain and encourages balance that leads to determination (Table 5).

• Purple = Finesse

Positive emotions	Luxury, courtesy, nobility, aesthetics, relaxation, elegance, spirituality, ambition, wealth, wisdom, respect
Negative emotions	Whim, mystery

Table 6: Colors and Feelings (Purple)

Figure 9: Logos with purple color

Purple is the perfect color to give companies prestige and elegance and products. It is about problem solving, serenity and creativity (Figure 9). It is often selected by companies related to beauty, cosmetics and anti-aging (Table 6).

• Orange = Energy

Positive emotions	Confidence, friendliness, success, energy, courage, aggression
Negative emotions	Ignorance, sloth, attention

Table 7: Colors and Feelings (Orange)

Figure 10: Logos with orange color

Orange is considered the color of energy. It captures attention, is fun and entertaining, and makes consumers feel they are dealing with a pioneering company, product or service (Figure 10). Like yellow, it is an optimistic color that can work as a warning. It is often selected for computer and mobile buttons (Table 7).

• Pink = Femininity

Positive emotions	Sweetness, playfulness, compassion, femininity, romance, kindness, love, tenderness, optimism
Negative emotions	Weakness, femininity, immaturity

Table 8: Colors and Feelings (Pink)

Figure 11: Logos with pink color

Pink is a feminine color. She is considered romantic and absolutely girlish. Its use is common for products and companies aimed at women or little girls (Figure 11). The pink color calms the nerves and creates gentle feelings of romance and love (Table 8).

• Grey = Balance

Positive emotions	Neutrality, practicality, grace, glamor, technology, science, prosperity, responsibility, fashionable, patience
Negative emotions	Indecision, impersonal, cold, pessimism

Table 9: Colors and Feelings (Grey)

Figure 12: Logos with grey color

Gray or silver, symbolizes practicality, old age, stability and solidarity. However, overuse of it can cause feelings of depression and pessimism. Some nuances relate to old age, death, taxes and disorientation (Figure 12). In addition, this color gives the feeling of helping but also of the character possible (Table 9).

White = Purity

Positive emotions	Goodness, innocence, purity, freshness, ease, cleanliness
Negative emotions	Isolation, antiquity, emptiness

Table 10: Colors and Feelings (White)

Figure 13: Logos with white color

White symbolizes purity, cleanliness and safety (Figure 13). It can be used to promote neutrality or lack of color and stimulate creativity (Table 10).

In a related study *(Birren, 2013,1950)* where a significant sample of individuals were asked to match colors with word meanings, the following was found:

- Trust: Most chose blue (34%), less white (21%) and green (11%)
- Safety: Blue again came first (28%), followed by black (16%) and green (12%)
- Speed: Red was the overwhelming favorite (76%)
- Cheap - low cost: Orange came first (26%), followed by yellow (22%) and brown (13%)
- High quality: Black was the clear winner (43%) followed by blue (20%)
- High tech: Black (26%) followed by blue and gray (both 23%)
- Reliability: Blue was the top choice (43%), followed by black (24%)
- Courage: Most preferred purple (29%), then red (28%) and finally blue (22%)
- Fear: Red came first again (41%), followed by black (38%)
- Fun: Orange was the top choice (28%) and then came yellow (26%) and purple (17%)

1.5. The importance of color fashion trends and their life cycles

From the marketing point of view of the importance of color, the study of which is the main source of this article - 'color is used in advertising to create in the consumer public two kinds of reactions: normal and psychological'. The former relate to the individual's 'autonomous reactions' to color which, as such, are 'used in advertising to attract the public's attention to the advertising message', while the latter, 'feelings produced by the influence of colors', and which "depend on the individual characteristics of each person" to the extent that they cause "arbitrary symbolic associations".

Examining trends in color fashion, these trends are "not a result of technological, economic or productive factors" but are based on "psychological factors stemming from the fact that individuals seek change as a means of personal expression." , as well as in their desire to feel part of a group ", consequently" to be part of a social process that includes the consequences of social interactions, diffusion, acceptance, or their rejection as well as guidance factors. "

With regard to advertising, advertisers' interest in modern trends in fashion stems from their desire to appreciate the extent to which trends in color preference may influence the hue and tone of the colors / colors used in the advertising message, either for reasons related to differentiating the product from the competition and avoiding the use of outdated colors, or because knowing the trends the preference of the different colors may determine there the market group that is the main target of the product. The reason for the color preference is the fact that "consumers seek to achieve an individual differentiation by expressing contemporary preferences in accordance with existing fashion rather than by adopting a completely different" as in an experience context, consumers usually, they imitate other people who are at the same economic or social level as them or people who are at the next level.

II. METHODOLOGY

2.1 The empirical material of the study

As will be seen in the empirical material of the study, covers the period from 1883 to 2017 (Image 1) and refers to advertisements of products of alcohol and parfums. This sample has been derived from a huge database from historical Greek advertisements (Figure 14) from several thematic topics that have been collected over the decades and have been considered to be the most representative, popular, emblematic ads based on publication statistics in eras' printed media. For methodological purposes and in order to comply with the main purpose of the study, the empirical material that has been extracted from the whole advertisements' database consisted of 89 entries of alcohol products (43) and parfum products (46) advertisements. Browsing this material requires the use of multimodal methods of analysis and analysis from the Google API Vision Platform. The Google Cloud Vision API allows developers to integrate vision detection features within applications, including image labeling, face and landmark

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detection, optical character recognition (OCR), and tagging of explicit content (Figure 15).

Learning algorithms which Google specializes in. Using this API, the ML layer is basically abstracted and allows you to use its all features with just API calls. The classification attributes that extract form the image among others are in this case (Figure 16):

- **Image Properties**. This task presents the Dominant Colors of an image.

Then, once the dominant color of each ad is recorded, it correlates with the table (1) colors and feelings in order to determine the model for prediction of emotions from the dominant colors' combinations. In this way, it is possible to assess the emotion that advertising is or is going to pass to the consumer, using the combination of its main colors (Figure 17).

The code generated by the Google ML Vision algorithm is listed below:

"dominantColors": {
"colors": [
{
"color": {
"blue": 35,
"green": 66,
"red": 243
},
"hex": "F34223",
"percent": 25.541365628813594,
"percentRounded": 26,
"pixelFraction": 0.023588384,
"rgb": "243, 66,\n 35",
"score": 0.103180654

..
..
..

The next step, is the use of Weka platform, include many filters that can be used before invoking a classifier to clean up the dataset, or alter it in some way. Filters help with data preparation. We used two filters to find and analyze the dominant colors in each ad (Figure 18).

- At first, a batch filter for extracting MPEG7 color layout features from images (ColorLayoutFilter.java). This filter divides an image into 64 blocks and computes the average color for each block, and then features are calculated from the averages.
- Secondly, a batch filter for extracting color histogram feature from images (SimpleColorHistogramFilter.java). This is the most basic color feature that can be computed; essentially, it three histograms (one for red, one for green, one for blue) each of which has 32 bins. Each bin contains a count of the pixels in the image that fall into that bin.

For machine learning methodology, we used data mining algorithms like J48 and K-Means by using Weka library. We evaluated our prediction performance by using 10-fold cross validation. The results from Google's ML Vision algorithm were also added to the data analysis through Weka.

Classification methods aim to identify the classes from some descriptive traits. They find utility in a wide range of human activities and particularly in automated decision making. Decision trees are a very effective method of supervised learning. It aims is the partition of a dataset into groups as homogeneous as possible in terms of the variable to be predicted. It takes as input a set of classified data, and outputs a tree that resembles to an orientation diagram where each end node (leaf) is a decision (a class) and each non- final node (internal) represents a test. Each leaf represents the decision of belonging to a class of data verifying all tests path from the root to the leaf. The tree is simpler, and technically it seems easy to use. In fact, it is more interesting to get a tree that is adapted to the probabilities of variables to be tested. Mostly balanced tree will be a good result. If a sub-tree can only lead to a unique solution, then all sub-tree can be reduced to the simple conclusion, this simplifies the process and does not change the final result. Ross Quinlan worked on this kind of decision trees (Figure 19).

Decision trees are built in "ctree (Conditional Inference Trees)" by using a set of training data or data sets. At each node of the tree, "ctee" chooses one attribute of the data that most effectively splits its set of samples into subsets enriched in one class or the other. Its criterion is the normalized information gain (difference in entropy) that results from choosing an attribute for splitting the data. The attribute with the highest normalized information gain is chosen to make the decision. During the construction of the decision tree, it is possible to manage data for which some attributes have an unknown value by evaluating the gain or the gain ratio for such an attribute considering only the records for which this attribute is defined. Using a decision tree, it is possible to classify the records that have unknown values by estimating the probabilities of different outcomes. Ctree builds decision trees from a set of training data in the same way as ID3 or C4.5, using the concept of information entropy.

=== Detailed Accuracy By Class ===

	TP Rate	FP Rate	Precision	Recall	F-Measure	MCC	ROC Area	PRC Area	Class
	0.907	0.348	0.709	0.907	0.796	0.575	0.850	0.797	alcohol
	0.652	0.093	0.882	0.652	0.750	0.575	0.850	0.818	parfum
Weighted Avg.	0.775	0.216	0.799	0.775	0.772	0.575	0.850	0.808	

Table 11: J48 - Detailed Accuracy by Class

After analysis of all ads included in the above database, we found that most perfume ads (Figure 21) are associated with primary colors of gray, black and blue, pink and yellow in contrast to alcohol ads (Figure 20) that were associated with the primary colors of red and orange.

III. DISCUSSION AND CONCLUSIONS

The purpose of the present paper was to examine the color representations and the dominate shades in a sample of Greek Historical Advertisements over time in thematic topics of alcohol and perfumes. The empirical data extracted from the database are supposed to contribute to the marketing literature with information from the field of psychology of colors. As a part of a marketing strategy, according to Cunningham (2017) and Singh (2006) "research relating to choice of colors should be conducted and concluded before launching a product, as the wrong color choice can have negative impact on the image of the product and the company. The research upon the perception of color and its effects on consumer behavior can enable brands to reach a specific audience and communicate a desired image that brand experts embrace. It is true that the knowledge of color perception and its repercussion to human's mind helps to understand consumers in a better way and design systems appropriately. Because color has consistency in emotions, knowing what influences consumer behavior, attracts consumers, increases likeability and maintains brand loyalists could strongly position a brand against its competitors. The exponential value of color psychology is demonstrated in color rebranding campaigns and legal cases that cherish consumer perception *(Cunningham, 2017)*.

The results of the present study in an essay to address the above information about the vital role of color in marketing policy indicate that there is a common policy over time as far as color use in historical advertisements. The dominant color in advertisements of alcohol products is in the shades of red and orange indicating feelings energy, passion, strength and desire (red color) and also, fun, energy, playfulness and happiness (orange color) (Table 1). On the other hand, as far as the advertisements of perfumes, there is a diversity in color use with the shades of yellow (especially gold), pink and soft shades, grey, black and blue to be dominant. In this paper, we consider only color. However, the factor that affects the emotion of advertisements is not only color. In our future work, with the use of advertisements from the whole database examining also and other categories of advertisements' products, we will study other factors that can affect the emotion of images, such as composition and texture, written messages, slogans and improve the emotion estimation by employing all the previously referred factors.

Last but not least, considering the review of literature, color is vital to the communication and relationship building process to both consumers and brands. In general, color in marketing can trigger an emotional response and influence consumers' cognition about how the product presented can be familiar to their personal style or temperament. Color can have a catalytic effect and shape consumer buying choices and can also be beneficial in marketing policy and in particular in branding communication strategies around the world. However, further research is needed to be carried out taking into account other cognitive parameters such as the ways that human's perception can be altered with the use of innovative techniques via neuromarketing tools based on stimulation of other senses with the combination not only cognitive processes but also emotional aspects.

REFERENCES

[1]. Bottomley, P.A. & Doyle, J.R. (2006). The interactive effects of colors and products on perceptions of brand logo approapriateness. *Marketing Theory* 6, 63-83.
[2]. Birren, F. (2013/1950), *Color Psychology and Color Therapy: A Factual Study of the Influence of Color on Human Life*, Paperback.
[3]. Bynum, C., Epps, H.H. & Kaya, N. (2006). Color Memory of University Students: Influence of Color Experience and Color Characteristic. *College Student Journal* 40, 824-831.
[4]. Carvalho, F.R., Moors, P., Wagemans, J., & Spence, C. (2017). The Influence of Color on the Consumer's Experience of Beer. Frontiers in Psychology 8 (2205), 1-9. doi: 10.3389/psyg.2017.02205.
[5]. Chang, W. L. & Lin, H. L. (2010). The impact of color traits on corporate branding, *African Journal of Business Management*, 4 (15), 3344-3355.
[6]. Cunningham, K. M. (2017). The Value of Color Research in Brand Strategy, *Open Journal of Social Sciences*, 5, 186-196.
[7]. Fallers L. A., (1954). A Plote on the Trickle Effect. Public Opinion Quaterly, pp. 314-321.
[8]. Huang, K.C. & Lin, C.C. (2008). Color Preference and Familiarity in Performance on Brand Logo Recall. Perceptual and Motor Skills 107, 587-596.
[9]. Katz E., & Lasarsfeld P. (1955). Personal Influence, Free Press, New York p. 325.
[10]. Kobayashi, S. (1989). The aim and method of the color image scale. Color Research & Application, 6 (2) 93–107. http://dx.doi.org/10.1002/col.5080060210

[11]. Leibenstein, H., (1950). Bandwagon, Snob and Veblen Effects in the Theory of Consumer's Demand. Quaterly Journal of Economics, pp. 127-130.
[12]. Nijdam, N. A. (2006). Mapping emotion to color. Human Media Interaction (HMI) , Department of Electrical Engineering, Mathematics and Computer Science, (EEMCS) at the University of Twente, http://hmi.ewi.utwente.nl/verslagen/capita-selecta/CS-Nijdam-Niels.pdf, Last Accessed date :09 September 2009.
[13]. Panigurakis, G., (1984). The Importance of Color Fashion Trends, Their Life Cycles, and Color Advertising. "Spoudai" Vol.2, pp. 340-360.
[14]. Robinson D. E., (1958). Fashion Theory et Product Design. Harvard Business Review, Nov. Dec., p. 127.
[15]. Rowan J. (1969). Psychology of Colour in Sales Motivation. The Print Buyer, No. 122.
[16]. Sapier, E. (1960). Fashion in the Encyclopedia of Social Sciences, vol. 6, The Macmillan Co., New York, pp. 139-144.
[17]. Sivik, L. (1989). Research on the meanings of color combinations, in Proceedings of the Congress of the Association Internationale de la Couleur (AIC), 130–132.
[18]. Tavassoli, N.T. (2001). Color Memory and evaluations for evaluations for alphabetic and logographic brand names. Journal of Experimental Psychology: Applied 7, 104-111.
[19]. Teller, D. & Bornstein, M.H. (1987). Infant color vision and color perception. In P. Salapatek & L. Cohen (Eds.), Handbook of infant perception. Vol. 1. Orlando, FL: Academic Press. Pp. 185-236.
[20]. Veblen T. (1936). The Theory of the Leisure Class, The Modern Library, New York.
[21]. Wright, B., Rainwater, L. (1962). The meanings of color. Journal of General Psychology 67 (1), 89–99, pMID: 14008415.