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Psychological Impact of colours in advertising and branding

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Abstract

The Impact of Colour Psychology in Advertisement is the purpose of this research. Right from the word go perceptions are being created in mind of customers and consumers which eventually leads to decision making. Positive or Negative or Neutral any impression is created in the mind within a span of 2 minutes. Precisely 80 to 100 seconds are enough to create an impact in customer or consumer mind. The 80% of this assessment is based on Colour Psychology on people/service/or product. Thus, a colour helps in creating an attitude, a feeling towards any product or service along with differentiation from the competition. With time the habits, liking, disliking of individual changes and so his /her preferences and perception towards the brand or product or service. It's the basic responsibility of the Product Manager and Marketing Team to take care of the same and keep on improvising and providing the product packaging with the required colours and aesthetics.

As per the founding of this study for any liking or disliking towards product or service Colour Psychology plays an important role and thus every marketing team should give utmost importance to Brand or Product Colours. Colours does create attention and hence play vital role in purchase decision.

Keywords: Colour psychology, habits, liking, disliking, brand, purchase decision

Introduction

Have you ever imagined or given a thought to what role Colours play in Human Psychology & the difference it creates in Advertising?

Unless you are colour phobic i.e., suffering from Chromophobia, it's natural for you to fall in love or liking any colour or colours. It plays a vital role not only in personal front but also in business. important for us as not only It's an essential part of advertising and thus play a key role marketing & success of any business. In our life's vitality, dimensions and interest towards products & Services and even Brands are actually the add-on aspects of the colours.

Impact of Colour Psychology in Advertising:

Colour psychology is the theory that certain colours elicit a physical or emotional reaction and, in doing so, shape human behavior. This isn't quite as simple as seeing red and getting angry or seeing blue and feeling at ease but almost. Medical studies suggest that the colour red correlates to an increase in blood pressure, and the colour blue corresponds with a decrease.

Because of this impact on behavior, colour can play a big role in creating a mood. According to Architectural Digest, this makes choosing the right paint colours crucial for setting the tone of your home. Warm colours tend to energize, while cool colours tend to calm.

The psychology of colours has a similar impact when it comes to your brand and your marketing strategies, and this leads us to the next section.

It's a human tendency that they always think for a single colour as their favourite while in reality its multiple, which one realise basis the situation. Your choice will vary by choice of colour regarding outfit in any formal or casual meeting, or basis the season like rainy, winter or summer. Even for the dining room or living room or even bathroom you obviously opt for different colours. Universally the subconscious mind of an adult is predefined to associate with specific colours which is preferred by the person on the eve of specific situation, event, or emotion.

How do Colours get utilized in Advertising & Branding?

Marketing is all about creating a connection with an audience and building brand loyalty from the first interaction.

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Knowing audience behavior and the psychographics for marketing always remained an essential part in advertisement.

Branding and advertising agencies think long and hard about colour before they choose what to use in a brand development program or advertising campaign. By carefully selecting the appropriate colour, an advert can send out a powerful message to the viewer even before they have had time to read and understand what the advert is promoting.

A large part of this can be attributed to colour psychology. Strong logos and carefully chosen company names can help a company connect with customers. Also, the colours used to convey subtle yet powerful messages in advertisements and websites reinforce the logo.

Advertising agencies make it their business to understand the psychology of colour to enable them to use it persuasively in their designs. For example, everyone knows that red signals danger and that person automatically react to a red warning sign to avoid the hazard. Why is that? Evolutionary theories believe that early man learnt to associate red with danger: blood, uncooked meat, or the red face of an aggressive adversary. But does that mean that red is never to be used in an advert? Far from it, however, as with all colours, an advert must be created with careful use of colour to ensure it sends out a positive subconscious message – one that is appropriate to what the company is selling and also to the target market.

The colours you use in your marketing and branding are foundational. You'll use these to create your logo, your website, your ads, and so much more—which means you shouldn't make these choices lightly. Instead, you should choose the colours you're going to use in your branding and marketing strategically. How? The key is understanding colour psychology and using the theory to your advantage.

Colour can play a big role in marketing—whether you're paying attention to it or not. The colours that you use in your branding, including your logo, and your other marketing collateral evokes an emotional response in your audience, whether they realize it or not.

And as noted in our marketing psychology guide, we make decisions based on emotion, not logic.

Bottom line: You need to consider colour psychology when you're building your brand and creating your campaigns.

How to use colour psychology to improve your marketing?

Colour theory is a concept that most designers and advertisers know the basics of. Colour is important because it affects the entire outcome of branding and advertising. Consumers' brains use colour to recognize products and the brands that make them.

Colour psychology is based on the association that our brains make with certain colours. Understanding this association allows designers to match the right colours to the right products. When you look at products within a certain industry, you will see many of the same colours being used over and over again. This is no coincidence. Those colours connect the right audience with the right brand based on consumer expectations.

Here's what designers know about choosing the right colour palettes:

Red Colour Psychology

Marketing brands use red frequently, and for a good reason.

As a result, brands utilize this powerful tone to convey characteristics such as:

- Passion
- High energy
- Love
- Warmth
- Fire
- Warfare
- Anger
- Danger
- Confidence

People who relate to the Colour red are confident, extroverted, and optimistic. Individuals with red personalities have strong emotions, and they're often powerful inside and out. They may feel overly competitive or wish to be the center of attention.

Red and warm Colours in general give a spectrum of feelings ranging from love to aggression. Red is usually seen as the Colour of love and evokes very strong feelings to people.

Traditionally, the colour red signifies love and joy, as well as luck in Chinese culture. Several brands use red in their logos to demonstrate these characteristics, such as:

- Netflix
- YouTube
- TIME magazine

Studies show that seeing red speeds up our blood flow, causing our metabolism to speed up and making us feel hungry. As a result, brands like McDonald's, KFC, and Coke use this tone. Brands that use red convey a sense of passion and courage.

Pink Colour Psychology

The colour pink has been associated with femininity for more than a century, even though it wasn't always the case. Currently, brands use tone to communicate characteristics such as:

- Fun
- Girly
- Upbeat
- Sweet
- Delicate
- Romantic
- Peaceful

Love is very important to those with a pink personality. People with pink personalities are kind, generous, and sensitive. Many people are drawn to them because they're approachable. Yet, they often long to be loved and accepted. Pink is a choice of colour for brands looking to appeal to female audiences and evoke youthful playfulness. Both Victoria's Secret and their sub-brand Pink, as well as Barbie, use pink.

To transcend gender roles, other brands like Lyft, Dunkin Donuts, and Instagram are also incorporating different shades of pink. This is an attempt to relate to a wide range of characteristics beyond femininity. Brands that use pink convey a feeling of gentleness and care.

Blue Colour Psychology

Instead of painting your storefront orange, you should paint it blue if you want to inspire loyalty. Cool hues are more

likely to draw customers back to a store than harsher warm hues, according to research. The colour blue can also be used to express other characteristics besides loyalty, such as:

- Calmness
- Tranquillity
- Refreshing
- Stability
- Responsibility
- Peace
- Relaxation
- Sadness

Blue is typically men's favorite and it is a symbol of calmness and serenity. Blue can also emit sadness and indifference. Don't use blue to ask if someone is sad 'why are you so blue?'. But research shows that people are most productive in rooms painted blue. Therefore, it is recommended that offices and other work facilities get painted blue.

If someone has a blue personality, they're likely reliable and trustworthy. They have strong beliefs and they don't change their values to please others. However, people who have this personality Colour are often eager to find inner peace and truth.

Brands like Ford, Facebook, and American Express use blue to express these emotions. Brands that use blue convey a sense of trust, peace, and calm.

Green Colour Psychology

The colour green evokes many emotions associated with our relationship with nature. According to psychology of colour in advertising Green in marketing can evoke similar feelings to a walk outdoors, such as:

- Finances
- The environment
- Health
- Good luck
- Growth
- Wealth
- Harmony
- Balance
- Soothing
- Renewal

People with green personalities are practical, peaceful, and down-to-earth. They often have a strong appreciation for nature, and they form close bonds with the people they care about. They may desire acceptance and validation from others.

Green symbolizes good luck, health, and fertility. It has an instant calming effect and is said to help in the healing process. It symbolizes a connection to nature for both John Deere and Animal Planet. Several brands use it to evoke different emotions, including Starbucks, Spotify, and Whole Foods. The colour green evokes a sense of growth, health, and loyalty for brands using it.

Yellow Colour Psychology

In studies, yellow has been shown to evoke feelings of frustration or even anger. But in branding, yellow is often seen as cheerful. Yellow can be used by companies when they want to convey:

- Energy
- Happiness

- Danger
- Youth
- Playfulness
- Cheerfulness
- Warmth

Yellow personalities are associated with people who are cheerful, uplifting, and creative. They're fun to be around, so people are often drawn toward their optimistic spirit. People with yellow personalities are often logical and have a desire to create new things.

It is the most contradicting Colour you will see as it is considered a happy and cheerful Colour and attention-grabbing, people often lose their tempers and feel frustrated in it and babies cry more in yellow rooms. I think we conclude to never paint a child's room yellow. McDonald's, Ikea, and Snapchat are just a few brands that use yellow as a primary colour in their marketing. For brands that use yellow, it evokes a feeling of happiness and warmth.

Gray Colour Psychology

Recently, gray has become a popular colour in marketing and home décor. In fact, Pantone's 2021 Colour of the Year is Ultimate Gray. Gray can take on many meanings and has many shades. Some common characteristics that brands use gray to express are:

- Neutral
- Professional
- Efficient
- Formal
- Corporate

Those who relate to the Colour gray are usually calm and practical. They're often indifferent about most things in life. However, that means they may isolate themselves from others to avoid the chaos life brings.

Major brands still rarely use gray. Some major companies use the tone on other versions of their logos or in a secondary capacity. These include Toyota, Apple, and WordPress. The colour gray conveys a feeling of calmness, neutrality, and focus in brands that use it.

Black Colour Psychology

In contrast to gray, black is a popular choice among brands across multiple industries. Black evokes a wide range of emotions depending on an individual's personal preferences. There are several characteristics of black that brands play up, including:

- Luxury
- Mystique
- Power
- Formality
- Elegance
- Darkness
- Mystery
- Sexuality
- Control
- The occult

People who resonate with this Colour are often powerful, independent, and mysterious. They may be seen as serious, but they usually have emotional insecurities that they hide well. They like to have as much control over their life as they can.

Black is interpreted as evil or a sign of death and mourning. Moreover, it depicts superstitious and maleficent characters such as witches. In ancient history however, it was a sign of life and rebirth. Nike's signature swoosh is black. Other brands that utilize the tone in their logos include Coach, BMW, Prada, and many more.

White Colour Psychology

Although it is not usually included on the colour wheel, white is capable of evoking plenty of emotions. As a contrast to darker colours like black or blue, white has a unique power because of its lack of colour. Feelings evoked by white include:

- Cleanliness
- Purity
- Blankness
- Simplicity
- Youth
- Honor
- Peace
- Blandness
- Coldness

White is a Colour that represents people who are independent, positive, and organized. They enjoy the simple things in life, and they're often seen as sensible and wise. They're not prone to impulsive behaviors, so they always think before they act.

White gives a sense of innocence and purity. It is used in rooms to give a sense that the room is spacious, but it gives a sense of hostility and emptiness. It is used to paint hospitals as it gives a sense of cleanliness and sterility. Apple, Chanel, and Adidas are a few brands that use white in their logos and branding to add drama. Brands that use white convey a sense of purity, cleanliness, and humility.

Brown Colour Psychology

Similarly, to green, brown evokes stability because of its natural tone. In addition to these characteristics, brown can also be used to express:

- Reliable
- Old-fashioned
- Earthy
- Masculine
- Natural
- Dependable
- Warm
- It is the Colour of Earth (the soil). It is described as natural, humble, can also be seen as sophisticated.

If someone's personality Colour is brown, they're likely honest, wholesome, and approachable. They value strong connections more than material items. They're great at making friends, but they'd rather hang out in small groups than around crowds.

One of the most well-known brands that uses brown to evoke feelings of dependability and resilience is UPS. The colour brown is associated with reliability, strength, and earthiness for brands that use it.

Purple Colour Psychology

Modern marketing continues to reinforce purple's royal image as a colour that conveys regal vibes. Brands can use purple to highlight the following characteristics:

- Royalty
- Luxury
- Intrigue
- Magic
- Mystery
- Military honour
- Wealth
- Imagination
- Spirituality

People with purple personalities are compassionate, creative, and supportive. They have a strong urge to help others in need, and they seek out strong emotional connections with others. They also have a great imagination. It is a divine Colour that is a sign of wisdom and spirituality. Long ago, it signified wealth as it was very hard to dye fabric into purple since there weren't many things in nature that give off that Colour.

Roku, Yahoo, and FedEx use this energetic colour to convey a feeling of power and luxury. A brand that uses purple invokes a feeling of royalty, richness, and imagination.

Orange Colour Psychology

The colour orange is commonly associated with characteristics such as:

- Youth
- Affordability
- Vitality
- Friendliness
- Humor
- Seasonal changes (particularly summer into autumn)

Orange is linked to people who are social and full of life. They share a lot of similarities to red personalities because they're warm and extroverted. They're open-minded individuals that welcome change, and they're usually the ones to organize events.

Orange is a colour that captures our attention. That is why we see it a lot on road signs, especially in construction zones or on signs warning of hazardous situations. Some brands use orange to inspire creativity and adventure in customers, including:

- Harley Davidson
- Home Depot
- JBL

For brands that use orange, it evokes an air of creativity and adventure.

How to get colour psychology work for you?

It's important to remember that colour psychology will affect your marketing, period. Your audience will make judgments about how well your brand colours suit your business. They will react to a red or green or blue button more quickly. This will happen whether you're paying attention to the psychology of colour during your branding or marketing design.

Better to use it to your advantage. Here's a quick recap of the tactics you can use to make colour psychology work for you and your marketing goals:

1. Learn colour psychology essentials
2. Start with emotion first
3. Get inspired by other brands
4. Create a brand colour palette

5. Keep cultural context in mind
6. Try to add some blue
7. Stay consistent with your branding

8. Run colour tests with your audience

Happy Colouring !!!

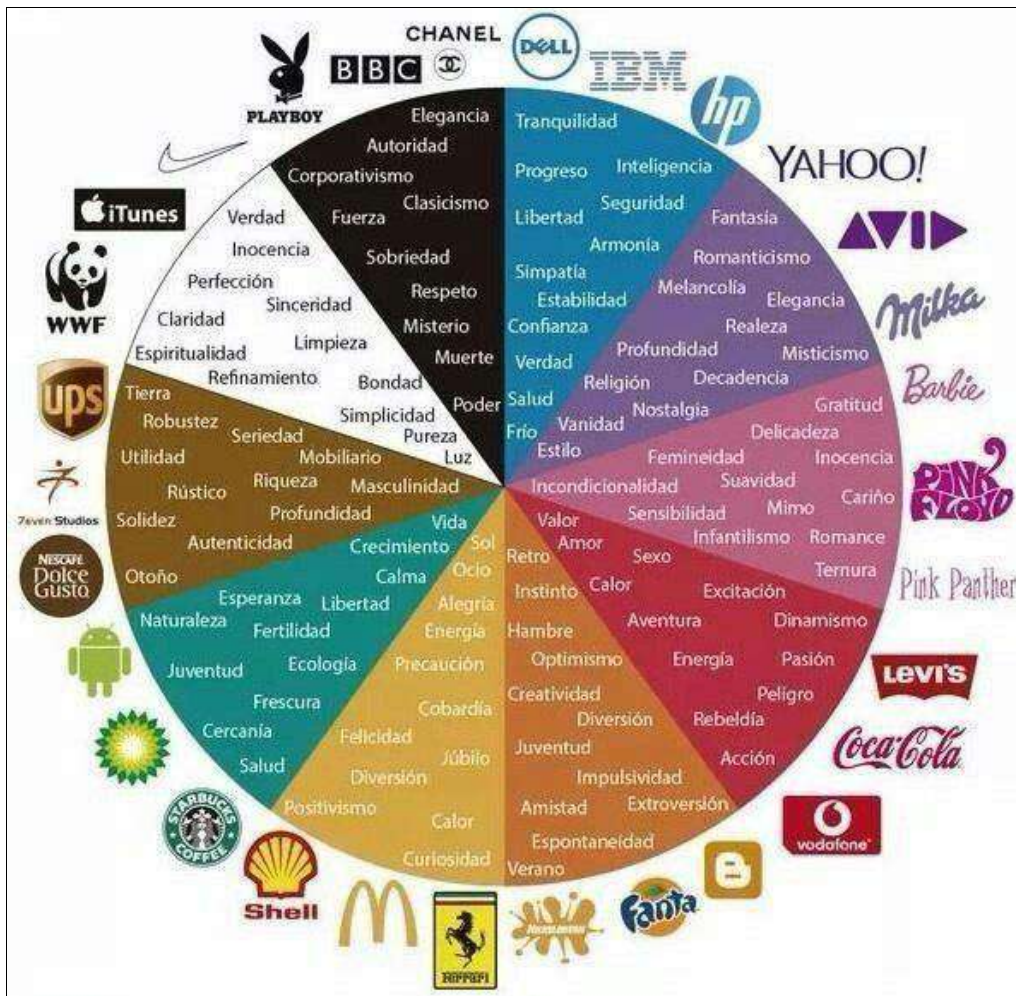




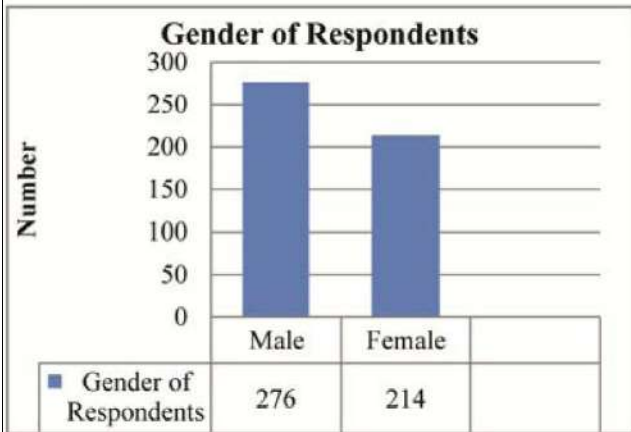
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Respondent's gender

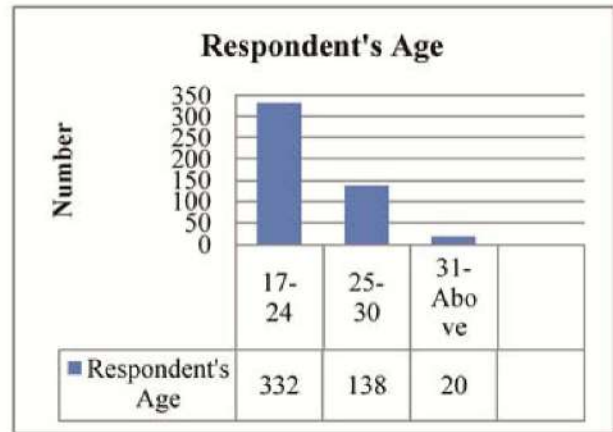
From the graph, it is deduced that the highest respondents were male with a total number of 276 as compared with the females who were 214 in number. Graph 1 shows the gender

of respondents, the horizontal axis of the graph indicates the sex while the vertical shows the number count of the particular sex.

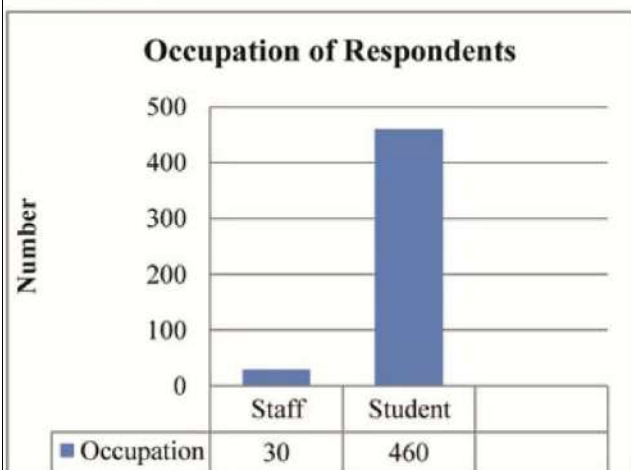
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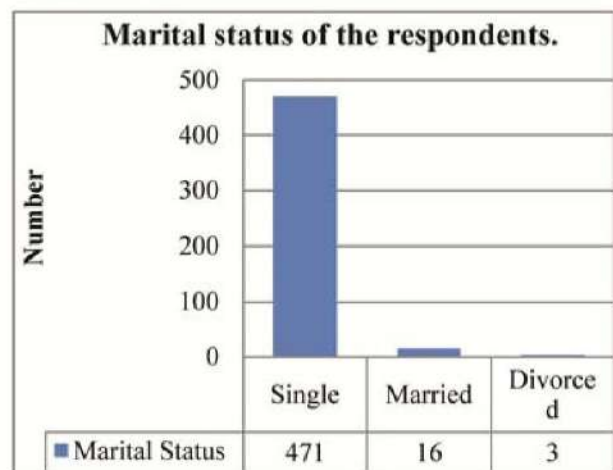
GRAPH 2.



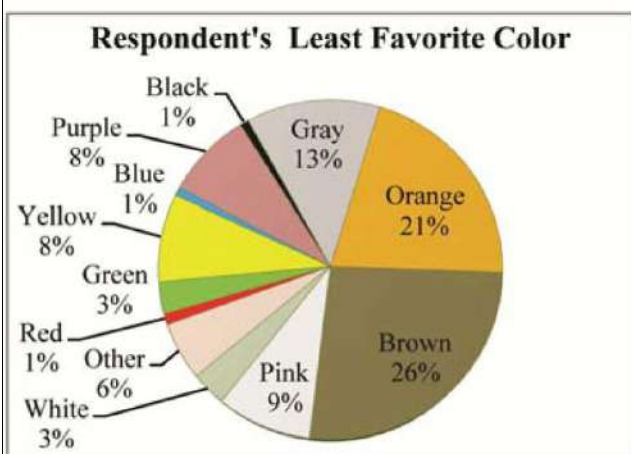
GRAPH 3.



GRAPH 4.



GRAPH 5.



GRAPH 6.

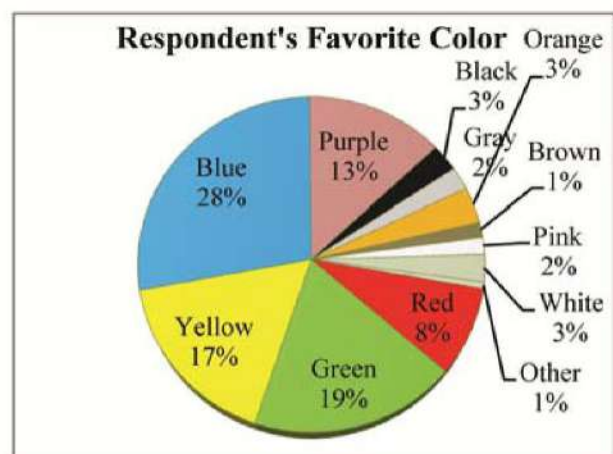


Fig 1: Statistical information about respondents. Open in viewer

Respondent's age

The highest respondents of this questionnaire fell in the age bracket of 17 to 24 as shown in the graph with a total number of 332, then followed by the age bracket of 25 to 30 with 138 respondents, then the least fell in the age bracket of 31 and above with just 20 respondents.

From Graph 2, it is easily deduced that the highest respondents are students with a total number of 460; the reason is not farfetched from the fact that the area of study

is the student complex. The lower respondents are the staff with just 30 in number.

Marital status of the respondents

The highest level rise is that of the singles with a total number of 471, and the lowest being just 3 respondents as divorcees, the married respondents were 3 as well, as indicated in the graph.

Respondent’s least favoritecolor

As seen on Graph 5, brown (26%), orange (21%), and gray (13%) comprise the majority of negative responses.

Respondent’s favoritecolor

The highest level on Graph 6 is that of others, with a total percentage of 28, indicating that most respondents’ favoritecolor was blue which turned out to be highly favored with a total count of 136, followed by green with 92, by yellow with 83, and by red with 42 respondents favoring them, respectively.

The number of the respondents for each option of the answers is given in Table 1; the graphs showing respondents’ perception on space and color are shown in Figures and other relevant questions which are replied by the respondents are analyzed. The following are the deductions:

1. Four hundred eighty-five respondents claimed that the colors used for the exterior of the students’ union complex were well combined.
2. Four hundred nine respondents supposed that the colors used reflect the purpose for which the complex was built. Two hundred sixty-six respondents were against the idea that some colors should not have been used.
3. Two hundred twelve respondents stated that some colors should have not been used in the student union.
4. Two hundred forty-three respondents found it unnecessary to use more colors.
5. Three hundred twenty-six respondents claimed that their excitement level increased as they approached the complex due to the colors used on the complex.
6. Three hundred forty-seven respondents felt that the colors of the complex complemented the environment and gave a sense of belonging.
7. Three hundred thirty-two respondents believe that the interior color of the Palm Inn is warm and inviting.
8. Three hundred thirty-one respondents declared that the interior color of the cafeteria was warm and made their meal enjoyable.

9. Three hundred thirty-two respondents stated that the interior color of Break Point made them restless or too excited.
10. Two hundred ninety-six respondents claimed that all interior colors of spaces of the student union complex were painted in colors that reflected their purpose.
11. Four hundred forty respondents declared that events that took place within the complex remained vivid in their memory.
12. Three hundred five respondents chose the Break Point as their favorite spot.
13. Most of the respondents (260) said they did not mind how long they spent in their favorite spot.
14. Three hundred ninety-three respondents were not in favor of the color of their favorite spot been painted a different color (see Graph 9 in Figure 3). However, when asked to those who agreed their favorite spot to be painted a different color, what color they preferred, they were unsure what color to choose.
15. Forty-two individuals responded to using another color while another 48 respondents had no comments. From the given color options, red was the most favoredcolor with 26 respondents, and blue and green were at a tie with 11 apiece.
16. None of the respondents claimed to feel depressed in their favorite spot.
17. Three hundred eleven respondents claimed that communication between them and friends strengthened in the complex (see Graph 11 in Figure 2). Break Point is the spot where communication among peers strengthened with 375 respondents, followed by the Palm Inn with 48 respondents, then the courtyard with 42 respondents. Twenty-five of the respondents had no comments.
18. The place of boredom as deduced from the chart was the cafeteria with 191 respondents selecting the place as the venue where they easily got bored (see Graph in Figure 2). Analysis of the Data. Open In Viewer

Likert-type questions	Strongly agree	Agree	Disagree	Strongly disagree	Do not know/NA
The colors used for the exterior of the students’ union complex are well combined	198	287	5	—	—
The colors used reflect the purpose for which the complex was built.	164	245	23	41	19
Some colors should have not been used.	76	136	240	26	12
More colors should have been used.	78	156	241	2	13
Your excitement level increases as you approach the complex due to the colors used on the complex.	134	192	126	38	—
The colors of the complex complement the environment and give a sense of belonging.	142	205	110	18	15
The interior color of the Palm Inn is warm and inviting.	105	227	101	39	18
The interior color of the cafeteria is warm and makes your meal enjoyable.	121	210	58	99	2
The interior color of Break Point makes you restless or too excited.	130	202	121	37	—
All interior colors of spaces of the student union complex were painted in colors that reflect their purpose.	84	212	168	16	10
Events that take place within the complex remain vivid in your memory.	76	334	66	110	14

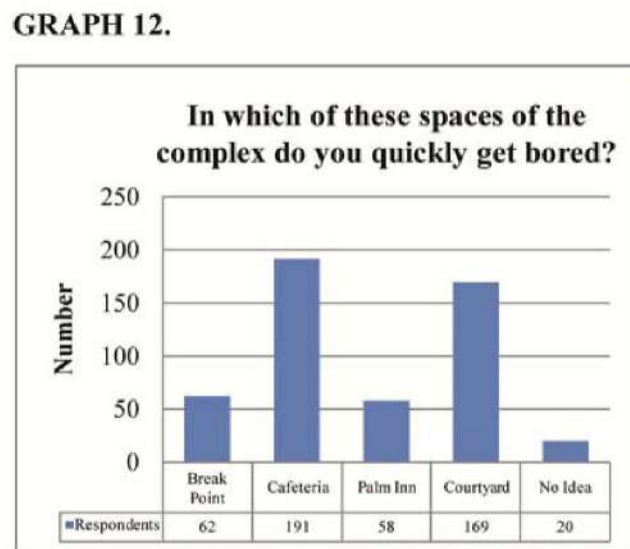
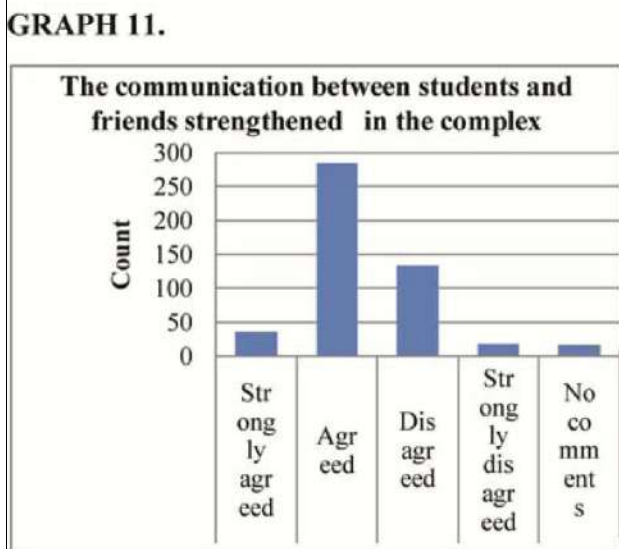
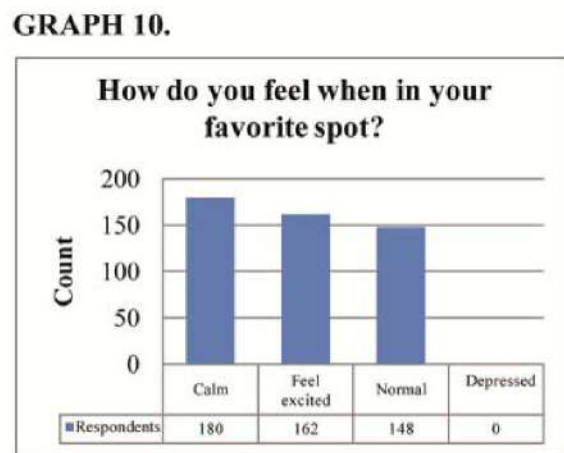
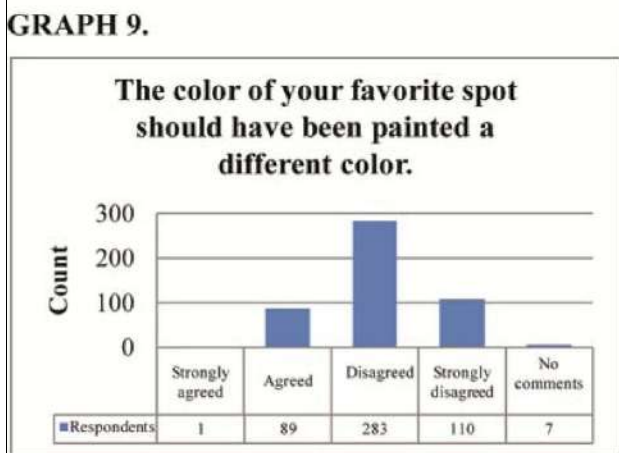
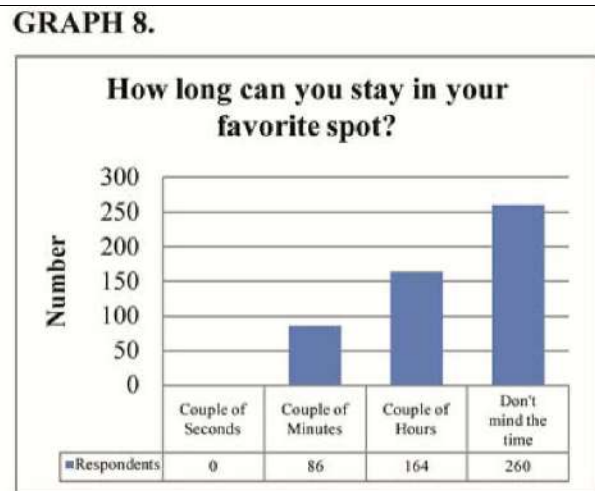
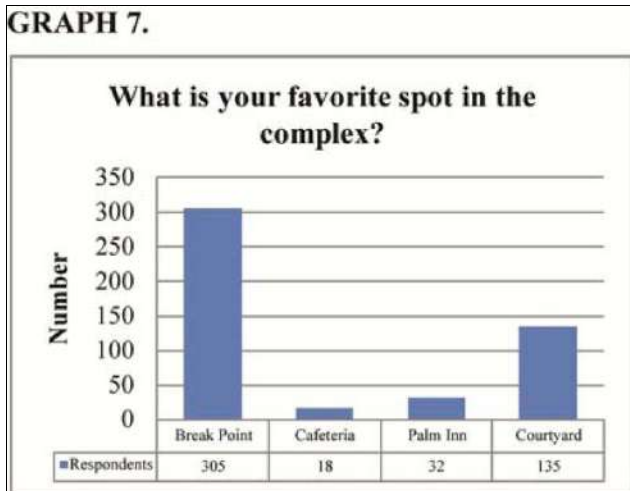


Fig 2: Graphs showing respondents' perception on space and color.

Conclusion

In both reviewing advances in and identifying weaknesses of the literature on Colour and psychological functioning, it is important to bear in mind that the existing theoretical and empirical work is at an early stage of development. It is premature to offer any bold theoretical statements, definitive empirical pronouncements, or impassioned calls for application; rather, it is best to be patient and to humbly acknowledge that Colour psychology is a uniquely complex area of inquiry that is only beginning to come into its own. Findings from Colour research can be provocative and

media friendly, and the public (and the field as well) can be tempted to reach conclusions before the science is fully in place. There is considerable promise in research on Colour and psychological functioning, but considerably more theoretical and empirical work needs to be done before the full extent of this promise can be discerned and, hopefully, fulfilled.

Future Research Direction

The purpose of this research was to study the psychology of colors in advertising marketing. The current research just

reviews past literature about the impact of color on marketing. Future research is needed to explore this matter in detail by conducting an experimental research or by using survey questionnaire to quantify the results of the study. Future research should compare different brands based on their colors by taking Pakistani sample

Conflict of Interest Statement

The author declares that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Design/methodology/approach

The Impact of Colours in Advertising & Branding is the literature being reviewed in this article. This study is in context to advertisement of products & services.

Findings

As per the findings of the study Colours plays significant role in creating perception about product, services, or brand. Perception in terms of product liking, setting up the mood customer towards the communication of the ads. Thus it's one of the most vital task of marketing team to choose the right colour basis the product / service or brand.

Research limitations/implications

Marketing is volatile and so thus all the studies depending on the market. Over here the limitations of the study and direction of future research are presented.

References

- Gopikrishna R, Kumar M. A Conceptual Study on Psychology of Colour in Marketing and Branding. *International Journal of Economic Research*; c2015, 12(2).
- Tutssel G. But you can judge a brand by its Colour. *Brand Strategy*; 2000 Nov 8-9.
- Wiegersma S, Vander Elst G. Blue Phenomenon: Spontaneity or Preference? *Perceptual and Motor Skills*. 1988;66(1):308-310.
- Eric, John, Paraag. Color psychology; c2007. Retrieved October 19, 2007, from <http://library.thinkquest.org/27066/psychology/nlcolorpsych.html>
- Jacobs KW, Suess JF. Effects of four psychological primary Colours on anxiety state, *Perceptual and Motor Skills*. 1975;41:207-10.
- Khouw N. The meaning of Colour for gender, *Colours Matters—Research*; c2002.
- Kido Y. Anti-miscegenation and Asian Americans. *Historical Review*; c2003, 108(5).
- Kotler P. Atmospherics as a marketing tool. *Journal of retailing*. 1973;49(4):48-64.
- Wollard K. Orange you glad you're not blue?; c2000. Retrieved October 19, 2007, from <http://wf2la6.webfeat.org>
- Kulman L. In today's restaurants, Colour my sushi beautiful. *US News & World Report*. 2001;130(2):56.
- Johnson D. Color psychology. © 2000–2007 Pearson Education, publishing as Infoplease; c2007. Retrieved October 19, 2007, from <http://infoplease.com/spot/colors1.html>
- Bellizzi JA, Crowley AE, Hasty RW. The effects of Colour in store design, *Journal of Retailing*. 1983;59(1):21-45.
- Dijkstra K, Pieterse ME, Pruyn ATH. Individual differences in reactions towards Colour in simulated healthcare environments: The role of stimulus screening ability. *Journal of Environmental Psychology*. 2008;28(3):268-277.
- Gerard RM. Differential effects of Coloured lights on psychophysiological functions, unpublished doctoral dissertation, University of California, Los Angeles, CA.
- Plieninger T, Dijks S, Oteros-Rozas E, Bieling C. Assessing, mapping, and quantifying cultural ecosystem services at community level. *Land use policy*, 33, 118-129. Google Scholar
- Veitch JA. A critical examination of perceptual and cognitive effects attributed to full-spectrum fluorescent lightning, *Ergonomics*. 2001;44(3):255-80.
- Singh S. Impact of Colour on marketing. *Management decision*. 2006;44(6):783-789.
- Airey D. How does colour psychology work?; c2006. Retrieved October 19, 2007, from <http://www.davidairey.com/how-does-colour-psychology-work?>
- Smith K. Color: Meaning, symbolism, & psychology; c2007. Retrieved October 19, 2007, from <http://squidoo.com/colorexper/>
- Aves M, Aves J. Interior designers' showcase of color. Gloucester, MA: Rockport Distributed by AIA Press.
- Babin BJ, Hardesty DM, Suter TA. Color and shopping intentions: The intervening effect of price fairness and perceived affect. *Journal of Business Research*. 2003;56:541-551. Retrieved from <http://linkinghub.elsevier.com/retrieve/>
- Birren F. Color psychology and color therapy: A factual study of the influence of color on human life. Whitefish, MT: Kessinger; c2006.
- Brodie A. (n.d.). The basics about color; c2006. Retrieved from <http://www.andrew.cmu.edu/user/abrodie/color/index.html>
- Carruthers HR, Morris J, Tarrier N, Whorwell PJ. The Manchester Color Wheel: Development of a novel way of identifying color choice and its validation in healthy, anxious and depressed individuals. *BMC Medical Research Methodology*; c2010, 10(1), Article 12.
- Cernin RA, Keller BK, Stoner JA. Color vision in Alzheimer's patients: Can we improve object recognition with color cues? *Aging, Neuropsychology, and Cognition*. 2003;10:255-267.
- Courtis JK. Color as visual rhetoric in financial reporting. *Accounting Forum*. 2004;28:265-281.
- Day TD, Rich C. A theoretical model for transforming the design of healing spas: Color and platonic solids. *Health Environments Research & Design Journal*. 2009;2(3):84-107.
- De Bortoli M, Maroto J. Colors across culture: Translating colors in interactive marketing communications. In Russow R., Barbereau D. (Eds.), *Elicit 2001: Proceedings of the European Languages and the Implementation of Communication and Information Technologies (Elicit) conference*. UK: Paisley University Language Press; c2001. p. 3-4
- Eiseman L. Color: Messages and meanings—A Pantone color resource. Gloucester, MA: Hand Books Press Distributed by North Light Books; c2006.

30. Graham H. Time, energy and the psychology of healing. London, England: Jessica Kingsley; c1990.
31. Greene TC, Bell PA, Boyer WN. Coloring the environment: Hue, arousal, and boredom. *Bulletin of the Psychonomic Society*. 1983;21:253-254.
32. Huchendorf L. The effects of color on memory. *Journal of Undergraduate Research*; c2007. Retrieved from <http://www.uwlax.edu/urc/jur-online/PDF/2007/huchendorf.pdf>
33. Itten J. The art of color: The subjective experience and objective rationale of color (van Haagen E., Trans.). New York, NY: Van Nostrand Reinhold; c1973.
34. Kathy L. Color experience; c2003. Retrieved from http://creativelatitude.com/articles/articles_lamacusa_colorex.html
35. Kotler P. Atmospherics as a marketing tool. *Journal of Retailing*. 1973;49(4):48-64.
36. Kuehni R. Color space and its divisions: Color order from antiquity to the present. Hoboken, NJ: John Wiley; c2003.
37. Kwallek N, Lewis C, Robbins A. Effects of office interior color on workers' mood and productivity. *Perceptual & Motor Skills*. 1988;66:123-128.
38. Kwallek N, Woodson H, Lewis CM, Sales C. Impact of three interior color schemes on worker mood and performance relative to individual environmental sensitivity. *Color Research and Application*. 1997;22:121-132.
39. Mahnke F. Color, environment and human response. John Wiley; c1996.
40. Marberry S. The power of color: Creating healthy interior spaces. New York, NY: John Wiley; c1995.
41. Meyhöfer D. In full color: Recent buildings and interiors. Berlin, Germany: Braun; c2008.
42. Miller M. Color for interior architecture. New York, NY: John Wiley; c1997.
43. Myers DG. *Psychology* (8th ed.). New York, NY: Worth; c2006.
44. Pamuk O, Göknaar EM. My name is Red. New York, NY: Alfred A. Knopf; c2002.
45. Park JG. Color perception in pediatric patient room design: Healthy children vs. pediatric patients. *Health Environments Research & Design Journal*. 2009;2(3):6-28.
46. Poore J. Interior color by design: A design tool for architects, interior designers, and homeowners. Gloucester, MA: Rockport; c1994.
47. Rosenstein LD. Effect of color of the environment on task performance and mood of males and females with high or low scores on the Scholastic Aptitude Test. *Perceptual & Motor Skills*. 1985;60:550.
48. Schauss A. Tranquilizing effect of color reduces aggressive behavior and potential violence. *Journal of Orthomolecular Psychiatry*. 1979;8:218-221.
49. Serra J. Color and space, practice and theory. *Revista de EGA*. 2011;18:280-287.
50. Spence I, Wong P, Rusan M, Rastegar N. How color enhances visual memory for natural scenes. *Psychological Science*. 2006;17:1-6.
51. Tofle RB, Schwarz B, Voon S, Max-Royaie A. Color in healthcare environments. Bonita, CA: The Coalition for Health Environments Research; c2004.