Colour preference among college students in Ghana

Al-hassan Bawa* and Mavis Osei†

*Department of Graphic Communication Design Technology, Tamale Technical University
†Department of Educational Innovations in Science and Technology, KNUST, Kumasi
*Email: dambanapari@gmail.com

The purpose of this study was to establish the most preferred abstract colour among first year college students in Ghana. The total number of respondents were 797 with which 51.69% were female and 48.31% were males. The average age of the respondents was 19 years. Respondents were each given a piece of plain sheet to indicate their age, gender and their preferred colour choice. Researchers found out that the most preferred colour among the respondents was blue whereas orange was the least preferred colour. We recommend that product designers in Ghana should take these findings into consideration when coming out with new products for the college students between the ages of 18-22.

Introduction

Colour is a fascinating element of design. Colour contributes immensely to the beauty of not only design products but art products in general. Due to the captivating nature of colour, it dominates all other elements of design and for that reason it is considered the quickest element in relaying messages, in attracting attention and thereby affecting human emotions and consumer choice. Grossman & Wisenblit [1] aver that the colour of a product has a vital role to play in the purchase decision of a consumer. For this reason, a consumer's colour preference is always taking into consideration when designing and marketing products.

A study by Singh [2] found that colour generates instantaneous unconscious judgment. The study indicated that people often make up their minds within 90 seconds of their initial interactions with either people or products and that approximately 62-90 percent of the assessment is based on colours alone. In that regard, it is very important for designers to comprehend the colour preference of consumers in planning effective design. This implies that how a consumer responds to colour has a considerable bearing on how a designer selects colours. Therefore, a designer's choice of colours must depend on targeted consumer preference of and response to colour. Elliot and Maier [3] suggested that designers must be careful in how they use red in achievement contexts. They demonstrated how colour acts as a subtle environmental cue that has significant effects on behaviour.

Since late nineteenth century, there has been a dearth of studies on colour preference by scholars of psychology, art and design. Jastrow (cited in [4]) carried out the earliest documented research on colour preference. Jastrow asked 4556 participants to choose their single favourite colour from a set of 12 colours. After the participants selected their favourite colours, he ranked in order the colours according to the vote frequency for each colour [4].

Some researchers studied variances in colour preference in relation to age group, gender, personality, culture and mood. In the same vein, a number of researchers explored emotional connotations and effects of colour by investigating the connection between colour and emotions.

In 1941, Eysenck [5] proved in his research (using ten Ostwald-coloured papers as stimuli and employment of female and male college students with equal numbers) the existence of a general preference scheme for colours. Blue was the most preferred colour followed by red, green, violet, orange and yellow.

Despite the dearth of literature on colour preference in the global arena, there is scanty research on colour preference in Ghana. Therefore, the purpose for this study is to contribute Ghana's perspective as far as colour preference is concerned. In particular, the study is to find out the colour preference of college students in Ghana.

Factors influencing colour preference

It is believed that psychological and physiological factors often cause individual differences in colour acuity. The differences in visual perception and insight, caused by age and environment, are some of such factors, [6] cited in [7], suggested that colour preference should be defined by the super-cultural and biological factors in any general hierarchy of colour preferences, and stated generality and specificity established on past literature. He noted however that other factors such as sex, ethnicity, area, age, personality and education have a significant impact on colour preference.

The colour preference of a person generally changes with age. Findings in the literature opine that people like yellow and red in their childhood, and as they age gradually, they develop a desire for blue or green [8]. Garth, Ikeda and Langdon [9] note that education also influences colour preferences, even though children in their infancy usually fancy the same colours wherever they are. Scholars argue as to whether human reaction to colour is innate [10, 1] or learned [11-12] and deliberate whether colour perception is associated with meaning and whether preferences vary with culture [13]. In addition, it is assumed that awareness of colour is explicit to a geographic factor or a cultural factor. With regard to meaning, both innate individual preferences and environment (education) may be significant considerations.

Colour symbolism across cultures

According to Chuthurika [14], colour symbolism is largely based on cultural, mythical, historical, religious, political, and linguistic associations. The symbolic meanings of colour expose wide-ranging meanings in cultures including positive and negative meanings. There are contradictory positions in the colour literature as to whether the cultural meanings of colours can be categorized because meanings or symbolisms of colours can change over a period of time and also depending on the context [15]. For instance, black is a colour of mourning in many countries, though a black book cover or a black poster is not always associated with death. Again brides in China traditionally wear red dresses, but many brides in the same country have started to wear white in recent times. Sable and Akcay [13] matched symbolism and meaning related to colour from cultural marketing viewpoint. They noted for instance that white signifies purification in grief in East Asia, but symbolises happiness in Australia or the United States. Red denotes sadness in Nigeria, Ghana or Germany, but it represents happiness in China and Denmark. Therefore, the colour symbolism across cultures is not fixed but always changing according to context and time.

Colour symbolism and functions in Ghana

In indigenous culture of Ghana, how beautiful a colour is, depends on its visual features and social sense. The connotations of colour are not premised on scientific theories but on "philosophical, psychological and spiritual meanings related to life" [16 p. 183].

Colour	Symbolism	Function
Yellow	Royalty; continuous life; warmth and controlled fire; rule of God or king; prosperity of individual and state	King's ornaments; outdooring; puberty; marriage
Red	Close blood relations; war; anger aggression; violence; calamity; death; riot; force; danger	Funeral; violent rallies; puberty initiation; outdooring ceremonies; used as sign for warning against danger
Blue	Early dawn; love; female tenderness; serene appearance; rule of a queen	Love charms; puberty and marriage ceremonies
Green	Newness; fertility; growth; vitality	Outdooring and child ceremonies; puberty; hunting ceremonies; used at funerals to keep the mouth shut; purification of spots for sacred ceremonies; used to pull off spirits of the dead from spots of accidents; used to sprinkle medicinal water during purification ceremonies
Grey	Pity; shame; blame; degradation	Used to paint corpses of persons who have suffered accidental death; used to prevent dysentery and strengthen weak foundations of houses
Brown	Decay and rottenness; things that have passed away; closeness to the soil (farming and hunting)	Mourning the dead; hunting and farming dresses
Black	Vice; sadness; strength; something that belongs to the past; old age and history	Used to mark relics or objects of history; for funeral, e.g. blackening of stools; used to make charms against wild animals and evil forces; for body painting
White	Joy; victory; happiness; purity; virginity; faultlessness of God	All joyous occasions, e.g. birth, outdooring, puberty, marriage ceremonies; victory at war or from any form of struggle; funeral for old people (celebrate life) and victims of accidental death (control tears)

Table 1: Symbolisms and functions of various colours in Ghana (adopted from Amenuke et al. [16 pp. 183-185]).

It is not possible to generalise the meaning of colour to all the many ethnic groups in Ghana because of the cultural differences between the ethnic groups. However, some colours have common meanings among the ethnic groups. Some of the common colours with similar meanings are yellow, red, blue, green, brown, grey, black and white [16-17]. It is important to state that each colour is related to the colour of a natural object and have their peculiar meanings and uses in Ghana. The symbolism of the colour is derived from its relationship to life. The colours, their symbolisms and their functions are presented in Table 1.

International comparisons of colour preference

A study by Cha and Mitsuboshi [18] conducted a comparative study of specific colour preference in Japan and South Korea, specifically relating to a cellular phone and a refrigerator. They discovered noticeable variance in the colour preference of these two countries. They gathered that bluish colours were favoured in Japan whereas reddish colours were preferred in South Korea. With regard to a cellular phone, Japan's range of colour preference was found to be greater than in South Korea; for the refrigerator, South Koreans tended to prefer a wider range of hues.

Such research demonstrates that, in selecting product colours, it is essential to consider the influence of the area or the culture as reflected in varying tastes according to symbolism or perception. In addition, colours influence the way in which people relate to and use a product.

Methodology

The research design was quantitative research design which sought to find out the colour preference among a number of college students in a college of education in Ghana. Participants were given room to choose any colour they preferred.

Subjects

The subjects for this study comprised first year students of a college of education in Ghana. Both genders participated in the study. In all, 797 students took part in the study. The number of male respondents were 385 and the females were 412. The ages of respondents ranged from 18 to 25.

Procedure

Data collection methods vary between colour preference studies. Voting for the most preferred colour is one of the most common methods used in this area. This method is characterized by simplicity and speed, but limited information related to relative strengths and ordering preferences between colours would be realised. Other methods such as ranking and paired comparison methods provide more detail on rated colours, but it will be inaccurate when considering large numbers of colours. In these methods, physical colour is used to evaluate a group of colours. An alternative method has been used in colour preference tests; these are verbal stimuli based on the use of colour names rather than presenting physical colour spots. This has the advantage of avoiding the colour blindness problem in addition to the participant's reluctance presenting the colour of a shade, even though it is like another shade. Michaels [19] stated that using colour names for the actual colours was as good as performing colour preference tests. Some research studies successfully used this method [20].

In this study, researchers adapted the verbal stimulus method demanding respondents to write down their favourite colours without seeing them. The reason for using the verbal stimulus method was to avoid biases in colour blindness and also to avoid limiting respondents to fixed colours because a respondent might prefer a particular colour but may not find it if researchers only listed some colours or displayed coloured cards which did not include respondent's favourite. Therefore, respondents had limitless opportunity to down their favourite colour. In a class, after teaching, the researchers gave each student an A6 plain paper and instructed them to state their gender, age, ethnic group and one most preferred colour. After they finished writing, the responses were collected and kept into a box and locked. The procedure was repeated in all classes of first year in the college.

Data analysis

Having gathered the responses from all the classes into a box, the researchers sorted the responses first according to gender, and second according to the colours chosen. The age difference was not considered since most of them were of the same age. The researchers also did not sort the responses according to ethnic groups because they were not interested in the gender. Researchers were only interested in the gender and age in relation to colour preference. Perhaps, further research can look into that. After sorting and tabulating the responses, researchers computed the data into an excel sheet and came out with the statistics and charts.

Ethical consideration

Ethical consideration is very crucial in conducting research of any kind, especially when it involves human subjects [21]. For this reason, the present study ensured that all ethical requirements were taken into account in all the stages of the research. First and foremost, ethical clearance and approval were sought from the college. Secondly, an informed consent from the participants was sought so that participants were comfortable to participate and it was not by compulsion. Again, the researchers made sure that each participant had the right to withdraw at any given stage of the research. Finally, confidentiality of information, anonymity of participants and absolute security of data were complied with according to the ethical consideration of the college.

Findings

Table 2 is a presentation of the colours chosen by respondents as their most preferred colours. As can be seen, the total number of colours variously chosen by respondents are eleven (11) colours. Respondents were given room to choose any colour of their preference and any colour that was not written down by respondents was not recorded. Again, the researchers did not mention any colour or a set of colours that respondents were supposed to write. The choice was open for each respondent to decide and settle on only one colour they preferred. In total, only 3 males representing 0.38% chose grey as their preferred colour and that is the least preferred colour while 174 representing 21.83% wrote Blue as most preferred colour.

From Figure 1, it can be seen that for male subjects, the dominant colours are Blue, White and Yellow corresponding to 79, 76 and 73 respectively, whereas with female subjects, the dominant colours are Blue, Pink and Yellow corresponding to 95, 76 and 46 respondents. Blue Colour is the dominant colour for both genders followed by Yellow and white. Grey (ash) is the least preferred colour with only 3 male respondents and no female respondents. This indicate that primary colours (pure hue) still stand out

among all categories of colours since Blue and Yellow are the two most dominant colours for both genders. White which is a neutral colour is the third most preferred colour and therefore implies that neutral colours are also preferred a lot by college students.

Colour	Gender				F + M	% (F + M)
	Female (F)	%F	Male (M)	%M		
Red	39	9.47	31	8.05	70	8.78
Blue	95	23.06	79	20.52	174	21.83
Yellow	46	11.16	73	18.96	119	14.93
Violet	31	7.52	12	3.12	43	5.39
Green	34	8.25	42	10.91	76	9.53
Orange	19	4.61	10	2.60	29	3.64
Brown	16	3.88	6	1.56	22	2.76
Grey	0	0.00	3	0.78	3	0.38
Pink	76	18.45	24	6.23	100	12.55
Black	30	7.28	29	7.53	59	7.40
White	26	6.31	76	19.74	102	12.80
Total	**412**	**100.00**	**385**	**100.00**	**797**	**100.00**

Table 2: Colour preference among college students.

Table 3 is a presentation of colour preference by adding both male and female in percentage terms. As can be seen, blue is the most preferred colour with 21.83% followed by Yellow with 14.93% and Pink with 12.55%. The least preferred colour is Grey with 0.38%.
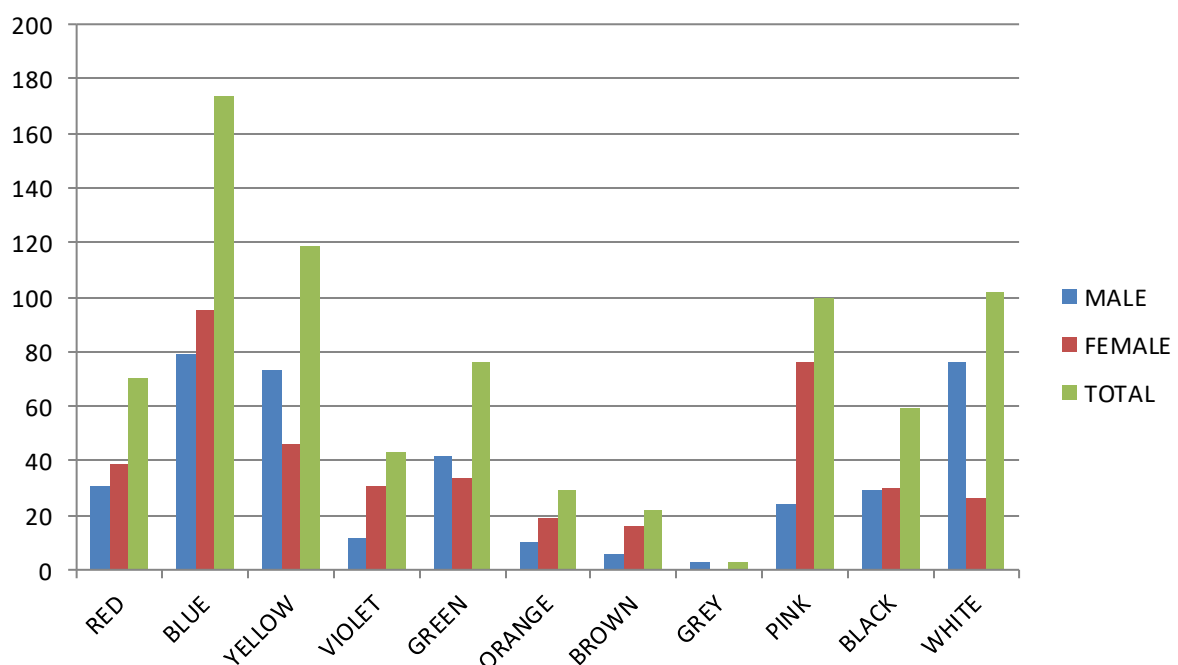

Figure 1: Colour preference among college students.

Colour	Number	%
Red	70	8.78
Blue	174	21.83
Yellow	119	14.93
Violet	43	5.39
Green	76	9.53
Orange	29	3.64
Brown	22	2.76
Grey	3	0.38
Pink	100	12.55
Black	59	7.40
White	102	12.80
Total	**797**	**100.00**

Table 3: Colour preference by the addition of male and female.

From Table 4, it can be seen that Primary colours of pigment comprising Red, Blue and Yellow [22-23] are the most preferred colour category with 363 respondents, representing 45.54% of the total respondents. Black, White and Grey which constitute neutral colours are the next preferred category of colours with 164 respondents, representing 20% of the total respondents while the shades category comprising brown is the least preferred category of colours with only 22 respondents, representing 2.76% of the total population. The secondary colours category (primary colours of pigment) comprising Violet, Green and Orange is third preferred category with 18.57% of the respondents. Pink constitute the Tint category with 100 respondents, representing 12.54%. The colour category is based on the "Artist's Colour Wheel" by Itten [22].

Colour	Number	%
Red	70	8.78
Blue	174	21.83
Yellow	119	14.93
Violet	43	5.39
Green	76	9.53
Orange	29	3.64
Brown	22	2.76
Grey	3	0.38
Pink	100	12.55
Black	59	7.40
White	102	12.80
Total	**797**	**100.00**

Table 4: Analysis of colour preference according to category.

From Table 5, it is clear that Cool colours comprising Blue, Violet and Green are the most preferred colours by the respondents with 37% followed by Neutral colours, Tints and Shades which constitute Others with 36%. The colour schemes are based on Itten's [22] Artist's Colour Wheel.

Colour scheme	Number	%
Cool colours	293	37.00
Warm colours	218	27.00
Others	286	36.00
Total	797	100.00

Table 5: Colour preference according to colour schemes.

Discussion and conclusions

The study was set out to find out the most preferred colour among college students. From the data presented, it is evident that Blue is the most preferred colour in summing both male and female respondents. In relating this findings to the meaning of colours as presented by Amenuke *et al.* [16] it is evident that Blue is really a colour of puberty because the average age of the respondents is within the puberty. Again, blue signifying love shows how subjects of this age treasure love and thus might be the reason why most of them prefer Blue. The findings of this research further deepens the eternal and universal preference of colours by Eysenck [5] when he indicated that there is an existence of a general preference scheme for colours and that blue was the most preferred colour followed by red (pink inclusive), though in considering pure hues, yellow is the next most preferred colour in our findings. However, in singling out only females, pink is the most preferred colour for them and this confirms the common knowledge that ladies prefer pink as it is clearly demonstrated in the findings. Eysenck [5] conducted his research about 70 years ago and it still holds true as this research confirms, though his research was not conducted in the same geographical location as this research but have similar findings.

It can also be deduced from the findings that the reason why Grey and Brown are the least preferred colours is due to the negative meanings Ghanaians attach to them [16]. Grey symbolises pity; shame; blame; degradation whiles Brown connotes decay and rottenness; things that have passed away. Therefore, the avoidance of these colours by the respondents reaffirms what Amenuke *et al.* [16] posited some thirty years ago. It also means that Ghanaian beliefs are strong and timeless.

Under the category of colours, the findings also revealed that, even though neutral colours are not fascinating enough, they were preferred more than secondary colours which are pure hues and are supposed to be more attractive. Why there is that preference for neutral colours over secondary colours is something to be investigated. However, the fact that primary colours are most preferred is because they are not "diluted" and therefore are more intense as compared to the other categories of colours. It presupposes that in designing products for the Ghanaian market, it is important to choose primary colours more, especially if it is target at the youth in their prime age.

In the colour preference literature, the colour preference of a person generally changes with age. Findings in opine that people like yellow and red in their childhood, and as they age gradually, they develop a desire for blue or green [8]. The findings of this study aver this position in the sense that the average age of the respondents is a transition to adulthood and for that matter there is a depiction of what Birren [8] found out because the results show overall preference to be blue whereas in the female subjects, the most preferred colour is pink which is relatively a warm colour.

We conclude that the study presents a fair idea of how youth in their prime relates with abstract colour. Even though the number of respondents in the study is insignificant to make a generalization, it is key to note that the findings aver earlier research and documentation in the literature, especially literature in the context in which the study was conducted. Further research should increase the number

of respondents significantly in order to decipher the points of convergence and divergence from the present study as well as the previous findings.

References

1. Grossman RP and Wisenblit JZ (1999), What we know about consumers' colour choices, *Journal of Marketing Practice: Applied Marketing Science*, **5** (3), 78-88.

2. Singh S (2006), Impact of colour on marketing, *Management Decision*, **44** (6), 783-789.

3. Elliot AJ and Maier MA (2007), Colour and psychological functioning, *Current Directions in Psychological Science*, **16** (5), 250-254.

4. Mikellides B (2012), Colour psychology: the emotional effects of colour perception, in *Colour Design: Theories and Applications*, 1st edition, Best J (ed.), London: Elsevier, 105-128.

5. Eysenck HJ (1941), A critical and experimental study of colour preferences, *The American Journal of Psychology*, **54**, 385-394.

6. Chijiiwa H (2001), *An Outline of Color Science*, Tokyo: University of Tokyo Press.

7. Sakamoto K (2014), Cultural influence to the color preference according to product category, *Proceedings of the International Conference on Kansei Engineering and Emotion Research*, 1427-1434, Linkoping (Sweden).

8. Birren F (1961), *Color Psychology and Color Therapy: A Factual Study of the Influence of Color on Human Life*, Secaucus, NJ: Citadel Press.

9. Garth TR, Ikeda K and Langdon RM (1931). The color preferences of Japanese children, *The Journal of Social Psychology*, **2** (3), 397-408.

10. Humphrey N (1976), *The Colour Currency of Nature: Colour for Architecture*, Porter T and Mikellides B (eds.), London: Studio-Vista.

11. Adams FM and Osgood CE (1973), A cross-cultural study of the affective meanings of color, *Journal of Cross Cultural Psychology*, **4** (2), 135-156.

12. Hupka R, Zaleski Z, Otto J and Tarabrina N (1997), The color of anger, envy, fear, jealousy: A cross cultural study, *Journal of Cross-Cultural Psychology*, **28** (2), 156-171.

13. Sable P and Akcay O (2010), Color: Cross cultural marketing perspectives as to what governs our response to it, *Proceedings of American Society of Business and Behavioral Sciences*, **17** (1), 950-954

14. Gajanayake H (2019), Cross-cultural emotion and symbolic meanings of color, Muzli - https://medium.muz.li/cross-cultural-color-and-emotion-eaacb7865840 [last accessed 13 August 2021]

15. Gage J (1999), *Colour and Meaning; Art, Science, and Symbolism*, Berkeley: University of California Press.

16. Amenuke S, Dogbe B, Asare F, Ayiku R and Baffoe A (1991), *General Knowledge in Art for Senior Secondary Schools*, London: Evans Brothers Ltd.

17. Adom D (2014), *General Knowledge in Art for Senior High Schools*, Kumasi: Adom Series Publication.

18. Cha JM and Mitsuboshi M (2010), Study of the comparison of a color image associated from language: for Korea and Japan, *Journal of the Color Science Association of Japan*, **34**, 32-33.

19. Michaels GM (1924), Color preference according to age, *The American Journal of Psychology*, **35** (1), 79-87.

20. Bakker I, Voordt T, Vink P, Boon J and Bazley C (2015). Color preferences for different topics in connection to personal characteristics, *Color Research and Application*, **40** (1), 62-71.

21. Creswell JW and Creswell JD (2018), *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*, 5th edition, Los Angeles: SAGE.

22. Itten J (1970), *The Elements of Colour*, New York: Van Nostrand Reinhold.

23. Berlin B and Kay P (1969), *Basic Colour Terms: Their Universality and Evolution*, California: University of California Press.