

Colors of Nature in Different Cultures and Their Effect on Inhabitants

Shaimaa Elghobashy*

Bachelor of Interior and Architecture Design, Arab Academy for Science and Technology and Maritime Transport, Alexandria, Egypt

* E-mail of the corresponding author: shaimaa-elghobashy@hotmail.com

Abstract

Color is an important interior element as it plays a role in the relationship between person and understanding the surrounding environment. Studies have shown that color can draw attention as it affects human emotion, perception and attitude. Most people agree that colors found in the surrounding nature are of the highest positive emotions. Despite, no single color satisfies everyone and each person respond color in a different way depending on their experiences, existing culture and mood. It is hypothesized that colors of interior facades of each culture are the preferable for their inhabitants. This paper presents evidence for the validity of this hypothesis through experimental questionnaire. The aim of the research is to show impact of the relationship between natural colors, surrounding nature and existing culture on human. Also it presents people choosing their preferable colors depending on specific aspects and finally to explore the impact of colors of different Egyptian cultures on their inhabitants. This research concludes the strong relation between human and the colors of the culture where they exist in.

Keywords: Color, Culture, Nature, Human

1. Introduction

Nature and color are emotional elements in our surrounding environment and are important aspects that we deal with everyday affecting everything around us. The influence of environment on human's behavior is now accepted (Altman, Wholwill, Rapoport 1980; Ittelson, Proshansky, Rivlin, L.C., Winkel 1970). The relationship between man and color has always existed, as colors from the surrounding culture guided human to influence his perception to the world, also colors can form and shape the way that we think as color in a space is not a secondary element as choosing the right color in each space differs a lot than just choosing randomly. Some studies have assessed color preference across cultures (Philbrick 1976; Trueman 1979). The result was that perception of colors differs from one culture to another. Through different studies results (Paul, Okan 2010; Madden, Hewett, Roth 2000) it has been concluded that most of cultures around the world agree that blues and greens are the colors chosen the most which are the main colors related to nature. However, exceptions exist. Color is an integral part of our live and a powerful design element which can be an effective means of creating. The realization that individuals exist within enclosed structures for most of their live has become increasingly important. Designers need to understand how spaces affect individuals to design spaces balancing the stress of everyday life and create environments of personal well being (Attia 2012). Colors and their combinations enhance human well being. Therefore, there is a need for a theoretical and conceptual framework in knowing the preferable colors for human in different cultures and this research will focus on the Alexandrian culture which is the sea view.

2. Relationship between human and nature

From the beginning of creation, human being was surrounded by nature. Everything in nature is well organized and in harmony (Vahedi 2009). Nature has been a source of inspiration for human being in different aspects of their life and it can be a reflection of a person's beliefs and desires (Cronon 1995). Human is considered a part of the surrounding nature and the surrounding environment has an impact on human behaviors and attitude (Madden, Hewett, Roth 2000), the effect of the environment on behavior is direct, passive, simple and readily predictable (Cronbach 1975; Proshansky 1970). The effects of the environment on human behavior are through responses of an emotional nature (Festinger 1950). In fact human resort to nature for relaxation (Haluza Delay 2001), refreshment and calmness due to the impact of natural colors on person and giving the sense of inner happiness desired.

People are always influenced by the colors of the outside environment and accept the colors of the landscape without question. Colors are a result of mixing the three primary colors (Miller 1997). Nature is sparing in its integration of colors, although it is the most preferable colors for human. According to the test results of (KAYA, EPPS 2004) which were concerning with human emotions towards Munsell color system the method was an

experimental questionnaire for 98 students at a public institution in the southeast region of the US. The results showed that the green had the highest number of positive emotion (95.9%) followed by yellow (93.9%) then, blue (79.6%). As green is associated with nature and trees, yellow is considered sunny color, and blue is the color of sea and sky. While on the other side the black and grey had the highest number for negative emotions which is (92.9%). While the highest for the achromatic colors, white (61.2%) as it is associated with snow (KAYA, EPPS 2004). These results concluded that the most preferable colors for human being are from the surrounding nature.

Color plays a role in each culture, as each culture has its own colors and each color is a symbol of a certain experience in life or a certain historic event for example, black is a symbol for the color of KA'BA (Arjmandi, Tahir, Shabankareh, Shabani, and Mazaheri 2011). It is important to understand which colors are preferred by people, what meanings are associated with different color combinations. The color combinations are considered culturally bound with certain traditions. The combinations of the colors selected may convey meanings as a result of the color pairing.

3. Egyptian cultures

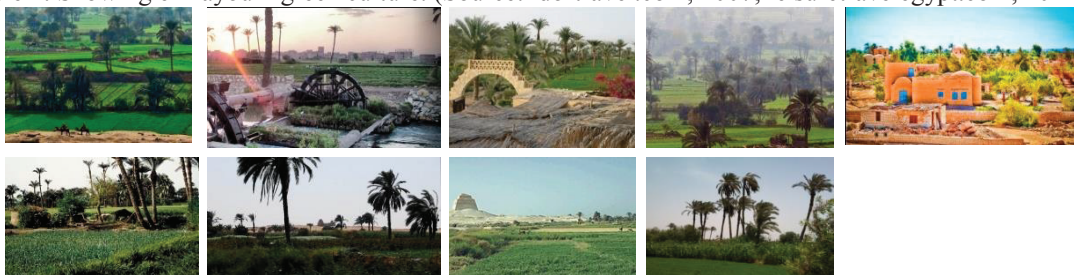
Egypt consists of 27 governorates by classifying these cities we will obtain six different cultures (Hegazi, Afifi, Shorbagy, Elwan, and Demerdash 2005; El Nahrawy 2011; Gabel 1999; ancientegypt.co.uk) which are the sea view, green areas, yellow sand desert, red sand desert, yellow mountains and red mountains. Alexandria is considered a city seeking the sea view. (Figure 1)



Figure 1. Showing Alexandrian culture. (Source: places-romantic.blogspot.com; travel-babel.com, 2006; alexandriaegypt.mobi; awams.com; destination360.com; fanpop.com, 2006; dahabescape.com; behaviorself.com, 2010)

El-Fayoum is a green land city, by making an interview with a resident living in El-Fayoum oasis it was concluded that most of this governorate is green area and the houses are located within the cultivated lands. (Figure 2)

Figure 2. Showing el-Fayoum green culture. (Source: ido-travel.com, 2007; leisuretravelegypt.com, 2011;



traveltourinfo.com; stay.com; gotoegypt.org, 2005; memphistours.com, 2013; privatetoursinegypt.com; zigzagtravel.net, 2012; weatherforcast365.com)

South Sinai and North Sinai are considered cities of mountains and deserts red and yellow, by making an interview with a resident in South Sinai working as a tour guide and visited North Sinai it was concluded that both of them in have the combination of cultures whether mountains or deserts they are both found with their different colors, despite that in winter the mountains are covered with snow but it doesn't remain for more than one day which shows that the snowy culture is missing in Egypt. Luxor is a yellow desert and mountain city. (Figure 3)



Figure 3. Showing Luxor culture. (Source: hat.net, 2008; Solopes, 2013; 123rf.com, 2006; egypttourplanner.com, 2009; twentysevenmag.com, 2013; memphistours.com, 2013; dougpile.com; Ojibwa, 2011; Mistersaly, 2013)

4. Natural colors

Natural colors are composed by combination of three colors red, yellow and blue (Miller 1997), by classifying the natural colors in to warm and cold colors we obtain: warm natural colors are red, yellow, orange and brown, while the cold natural colors are blue and green.

The warm natural colors are called warm because they remind us of fire and the sun; they are characterized by attracting the attention and makes people feel full with excitement, cheerful and energetic (Lewis, D., Turner 2012; Miller 1997; Rahmatabadi, Teimouri, Azar 2011). Warm colored objects appear to be closer and make the interior space looks smaller than its actual size. The overuse of warm colors cause an increase in the blood pressure and heart rate as it affects the nervous system energetic (Lewis, D., Turner 2012; Rahmatabadi, Teimouri, Azar 2011). On the other hand cold colors are the opposite of warm colors and they are cold because they remind people of water and trees. They are characterized by being quiet, calm and restful (Lewis, D., Turner 2012; Miller 1997; Rahmatabadi, Teimouri, Azar 2011). Cold colored objects seem smaller and walls seem farther away, the interior space looks larger than its actual size. They have the opposite effect of warm colors; lower the blood pressure and the heart rate (Lewis, D., Turner 2012; Rahmatabadi, Teimouri, Azar 2011).

5. Nature and design

In the early periods the only source for the human being to take an idea was nature, but due to the technological developments the ability to create new products increased. Their respect to nature decreased and sometimes nature is forgotten (Vahedi 2009).

Nature is one of the most important architect's guidelines during the design process and a reference in meeting the human needs. Designers have to look at the nature with deeper aspect and apply it in their conceptual design which is considered the heart of the design process. Most of the designs derived from nature are a combination of diverse and efficient features. In fact nature can be considered an artistic element in design. Since the human being spends a long time in the interior space this means that the interior design is not only about relaxing furniture, suitable light, harmony in colors and beautiful design, but also, must play an important role in protecting the user of the space from the harmful effects of the recent technology and using natural components in the interior space to obtain relaxing and healthy interiors (Attia 2012).

6. Choosing a color

The way that people choose their preferable color is depending on relating the color with a certain event, their current mood and emotions and its physiological and psychological impact on human (KAYA, EPPS 2004). People relate colors to a certain event such as, red is related to the valentine's day (KAYA, EPPS 2004) also when people are exposed to a certain mood this affects how they choose a color, for example, white is associated with happiness and black color is associated with sadness and anger (Lewis, D., Turner 2012; Rahmatabadi, Teimouri, Azar 2011; KAYA, EPPS 2004). Wagner Color Research Institute, contends that colors are associated with certain images (Lane 1991) for example, blue is associated with wealth, trust, and security, gray is

associated with strength and success.

7. Method overview

This research hypothesize that colors of each culture are the preferable for their inhabitants focusing on Alexandrian culture, a total of 360 participants from Alexandria participated in the questionnaire which shows that the confidence level is 95% while the confidence interval is 5%. The participants can be classified into strangers, neighbors, Family members, friends and friends of friends, before starting the questionnaire different samples were checked (KAYA, EPPS 2004; Kwallek, Lewis, Hsiao, Woodson 1996; Madden, Hewett, Roth 2000; Smeesters, Liu 2011; T.H.; J.K., G.W. 2012; Hettiarachchi, De Silva 2012) to make sure that the right question is being asked. Each person was asked seven different questions without any introduction about the subject or the hypothesis (Appendix A), an online questionnaire was available in surveymonkey.com and the respondents were sent an inbox message on facebook.com with the survey link, other respondents were asked with a printed survey paper these participants were street contacts and finally respondents answering with a face to face conversation, all these answers were than analyzed on Microsoft Office Excel to obtain the final product. The first question was about their ages as studies have shown that response to color differs from one person to another according to their ages and by time passing the preferable color for each person may change. The result was 307 (85.27%) participant ranged from 18 to 24 years, while 42 (11.66%) participant ranged from 25 to 34 years, 8 (2.22%) participant ranged from 35 to 44 years and only 3 (0.83%) participants ranged from 45 to 54 years. (Figure 4)

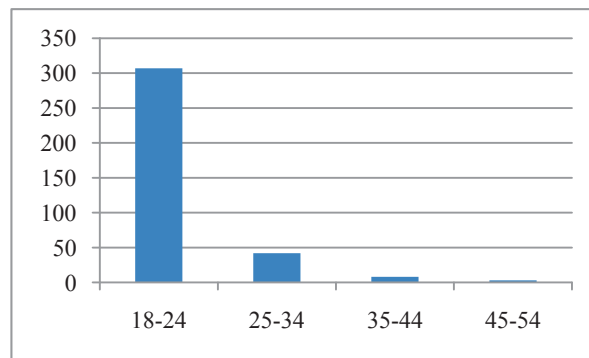


Figure 4. Showing the participants ages

The second question was about their gender the participants were a total of 192 (53.33%) female and 168 (46.66%) male from Alexandria as the responses to colors differs according to the type. (Figure 5)

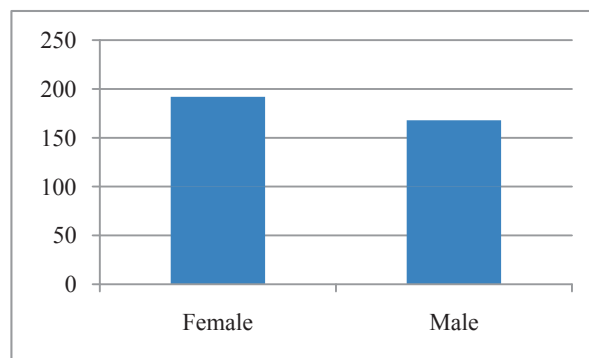


Figure 5. Showing the participant's gender

The Third question was "What City do you currently live in?" to make sure that the participants are from Alexandria and know the culture there. Some of the participants were not in Alexandria for some reason in a vacation or at work; their answers were Sharm Elsheikh, Jeddah, Kuwait, Makah, Cairo and Ismailia and the ones chosen had to be in Alexandria for not less than five years as the ones who are coming on holidays are not counted. The total participants in Alexandria were 345 (95.83%) while outside Alexandria was 15 (4.16%) participants only. (Figure 6)

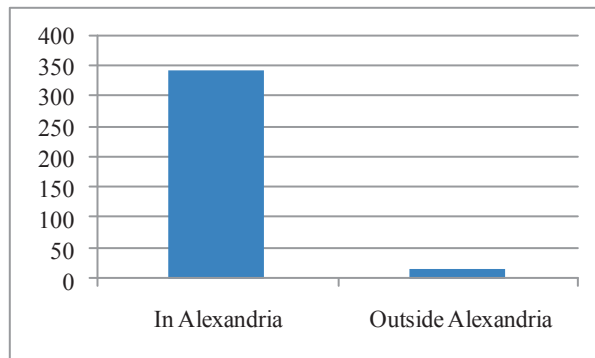


Figure 6. Showing participants inside and outside Alexandria

To make sure that the participants outside Alexandria haven't spent a short time in it during their whole life they were asked "About how long have you lived in this city?" the answers included how long did they spend time in the other city for the ones outside Alexandria, while the ones inside their answers was about Alexandria each answered in years and months the minimum time spent in Alexandria was five years and the maximum was fifty four years. The results were 7 persons (1.94%) spent from 0 to 10 years, 45 persons (12.5%) spent from 10 to 20 years, 293 persons (81.38%) spent from 20 to 30 years, 13 persons (3.61%) spent from 30 to 40 years and only 2 (0.55%) spent from 40 to more. (Figure 7)

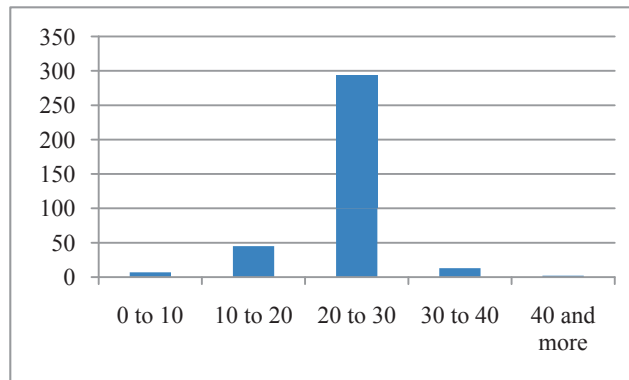


Figure 7. Showing years spent in Alexandria

It was important to know whether the participants were in Alexandria as to know they are influenced by multiple cultures or not and to know their affiliation and belonging. Some on them were born outside Alexandria 21 (5.83%) persons in Cairo, Riyadh, Behira, Boston, Jeddah, Medina, Makah, South Sinai and Zagazig while the others were born in Alexandria 339 (94.16%) persons. (Figure 8)

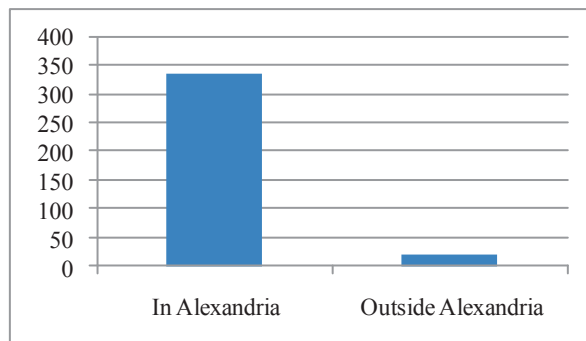


Figure 8. Showing the city of birth

The next question was about the color schemes. The Egyptian cities has been classified to six different cultures with six different color schemes which are: sea view, green land, two color schemes for deserts lands (red and yellow) and two color schemes for mountains views (red and yellow). The color schemes are: (white-blue- light blue), (light blue-light green-dark green), (light blue-reddish orange), (light blue- yellowish brown), (light blue-reddish brown) and (light blue-light yellowish orange). (Figure 9)

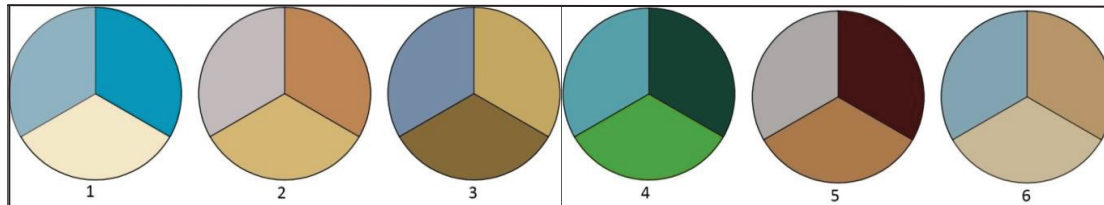


Figure 9. Showing the six Egyptian cultures color schemes

The highest result was the sea view color scheme with 156 votes (43.33%), while the second place was the red desert color scheme with 56 votes (15.55%), the third place for the yellow mountain color scheme with 52 votes (14.44%), the fourth place for the yellow desert color scheme with 44 votes (12.22 %), the next place for the red mountain color scheme with 37 votes (10.27%) and the last place was the green color scheme with 15 votes only (4.16%). (Figure 10)

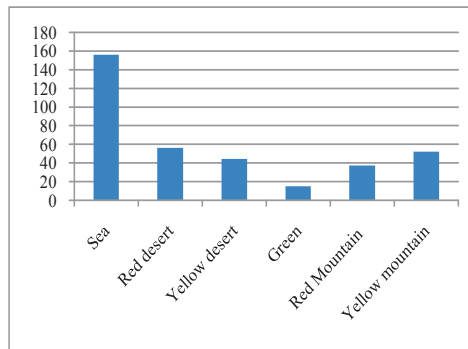


Figure 10. Showing Egyptian cultures color schemes results

The last question was about interior facade color scheme including the previous color schemes on a residential interior zone "living area". The question was "Which of the following interiors would you choose for your place?" (Figure11)



Figure 11. Showing interior color schemes used in questionnaire

The results were as follows: The highest result was the sea view interior color scheme with 99 votes (27.5%), while the second place was the red desert interior color scheme with 95 votes (26.3%), the third place for the yellow mountain interior color scheme with 69 votes (19.16%), the fourth place for the yellow desert interior color scheme with 44 votes (12.22 %), the next place for the red mountain interior color scheme with 43 votes (11.94%) and the last place was the green interior color scheme with 10 votes only (2.77%). (Figure 12)

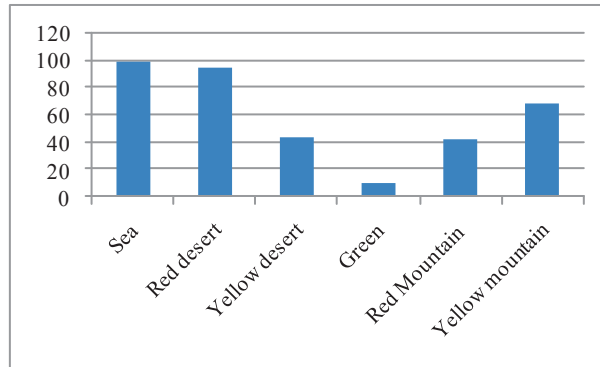


Figure 12. Showing Interior color schemes results

By making a separate analysis for females and males in the last two questions concerning the color schemes. Starting with the sixth question the results for females were 85 votes from 192 were the sea color scheme (44.27%), followed by the red desert color scheme 28 votes (14.58%), then the red mountain color scheme 26 votes (13.54%), followed by the yellow mountain color scheme 25 votes (13.02%), then the yellow desert color scheme 22 votes (11.45%) and finally the green color scheme with only 4 votes (2.08%). The results for males were 71 votes from 168 were the sea color scheme (42.26%), followed by the red desert color scheme 28 votes (16.66%), then the yellow mountain color scheme 27 votes (16.07%), followed by the yellow desert color scheme 22 votes (13.09%), and finally the green and the red mountain color schemes with only 11 votes for each (6.54%). (Figure 13)

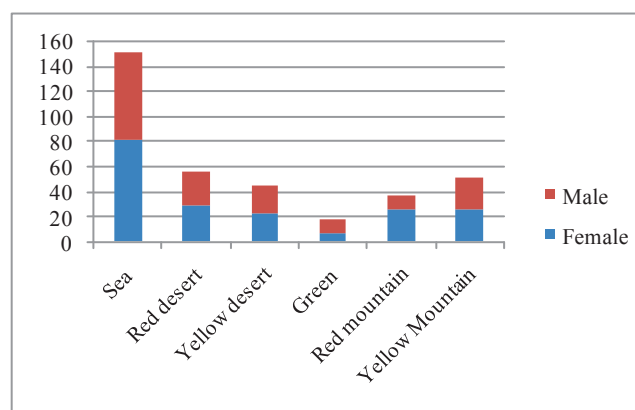


Figure13. Showing color schemes responses according to gender

The results for the seventh question for females were 58 votes from 192 for the red sand interior (30.2%), followed by the sea interior with 48 votes (25%), then the yellow mountain interior with 43 votes (22.39%), followed by the red mountain interior with 21 votes (10.93%), then the yellow desert 19 votes (9.89%) and only 3 votes (1.56%) for the green interior. The results for the 168 males were as follows, the sea interior with 51 votes (30.35%), followed by the red desert interior with 37 votes (22.02%), then the yellow mountain interior 26 votes (15.47%), followed by the yellow desert 25 votes (14.88%), then the red mountain interior 22 votes (13.09%) and 7 votes (4.16%) for the green interior. This result is showing the difference and the conflict between the two questions according to the type of the participants as the preferable color for the female differs than the male. (Figure 14)

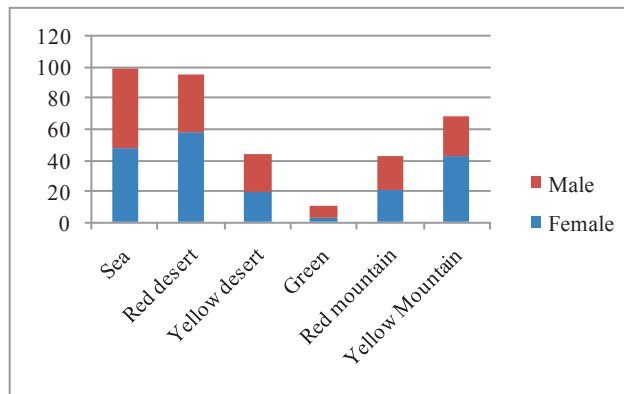


Figure14. Showing interior color schemes responses according to gender

By making a separate analysis for the participants according to their ages on the last two questions concerning the color schemes. The results for the sixth question for the participants age ranged from 18-24 were 307, the sea color scheme has the highest votes 134 (43.64%), followed by the red desert color scheme 46 votes (14.98%), then the yellow mountain color scheme 44 votes (14.33%), followed by the yellow desert color scheme with 36 votes (11.72%), then the red mountain color scheme with 34 votes (11.07%) and finally the green color scheme with 13 votes (4.23%). The participants ranged from 25-34 were 42 the results are the sea color scheme with 16 votes (38.09%), followed by the red desert color scheme 8 votes (19.04%), then the yellow desert and yellow mountain color schemes with the same votes 7 (16.66%) and finally the green and red mountain color schemes each 2 votes (4.76%). The participants ranged from 35-44 were 8 the highest vote was 4 (50%) for the sea color scheme and the rest 1 vote for each (12.5%) except the green color scheme has no votes. The participants ranges from 45-54 were 3 only 2 voted (66.66%) for the sea color scheme and one voted (33.33%) for the red color scheme. (Figure15)

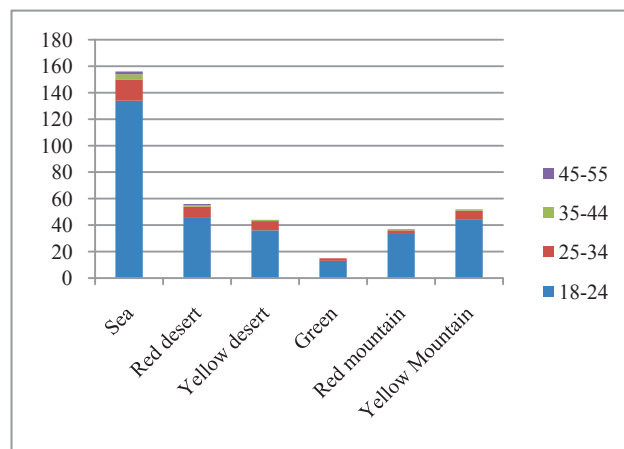


Figure15. Showing color schemes responses according to age

The results for the seventh question are as follows. The participants age ranged from 18-24 were 307, the red desert interior color scheme has the highest votes for the sea interior 82 votes (26.71%), followed by the red desert interior with 81 votes (26.38%), then the yellow mountain interior with 57 votes (18.56%), followed by the yellow desert and the red mountain interiors each with 40 votes (13.02%) and finally the green interior with 7 votes (2.28%). The participants ranged from 25-34 were 42 the results are the sea interior with 15 votes (35.71%), followed by the red desert and the yellow mountain each 9 votes (21.42%) and finally the red desert, green and red mountain interiors each 3 votes (7.14%). The participants ranged from 35-44 were 8 participants 2 voted (25%) for the sea and the red desert interiors for each and 1 voted for yellow desert interior (12.5%) while the rest have no votes. The participants ranges from 45-54 were 3 only 2 voted (66.66%) for the red desert interior and one voted (33.33%) for the sea interior. (Figure16)

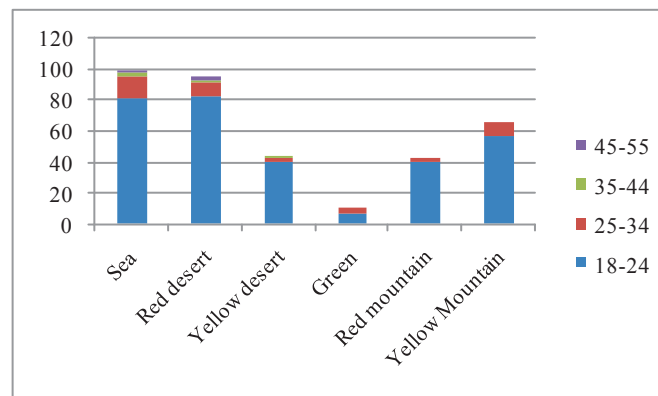


Figure16. Showing interior color schemes responses according to age

8. Discussion

There exist conflict between the sixth and the seventh question concerning the color schemes as participants were free to choose their preferable color schemes in both. The person may like the color schemes for a certain culture but this doesn't mean that it will be suitable for his interior place specially the living room which is considered one of the rooms used the most. People do not respond color in a similar way some way see natural colors suitable for interior spaces other may not see this. Moreover, the responses to colors were different depending on participant's ages, gender and if they were influenced by more than one culture as living for a long time in a certain culture impacts human. The result showed that the most preferable color scheme for both male and female is the sea culture color scheme and also it is the most preferable for all ages, while the most preferable interior color scheme for female is the red desert culture, while for male the sea culture is the most preferred, for ages 18-24 and 45-54 the most preferable interior is the red desert culture while the rest prefer sea culture.

9. Conclusion

This paper is believed to be the first to investigate the impact of colors of Egyptian cultures on human being. The Research has proved the validity of the hypothesis which was concerning the culture of Alexandria and its inhabitants. It was shown that the most preferable color scheme for the inhabitants was of the existing culture "the sea view" which shows that people are influenced by the culture they exist in; also it showed that most of the people living in Alexandria would use the color scheme of its culture in their interiors. Color is an emotional element that never satisfies all people in the same way as perception to each color differs from one person to another as there are various impacts that influences human while choosing their preferable colors such as physiology, psychology, emotions, feeling and mood. Color perception and meaning vary by culture and is an important factor to human's perception properties associated with subjective preference. Human is a part of the surrounding environment and is always influenced by it in different aspects.

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