UDC 72.012: 004.946 DOI 10.36910/6775.24153966.2019.67.1

Almnshdawy Hussain Abdulalee, Ayad Hayawi Alataby
College of mediaUniversity of Thi–Qar (Nasiriyah, DhiQar, Iraq)

FEATURES OF THE EFFECT OF COLOUR SCHEME ON THE CONSUMER IN ADVERTISING WEB DESIGN

The objective of the work is to determine the features of the effect of colour scheme on the consumer based on the technical capabilities of web design. Research methodology. This study was conducted at the intersection of different concepts and methods, i.e. it is essentially an interdisciplinary study. The theoretical and methodological basis of the research were fundamental works in the field of colour culture, colour advertising communication, materials on web design, technical literature in the field of colour reproduction in the digital field. The scientific novelty of this study is to identify the principles of the use of colour in advertising web design, the relationship of technical capabilities with the tasks of advertising and the aesthetics of cultural traditions.

Keywords: *colour scheme, web design, colour advertising communication, colour theory, colour psychology, colour balance.*

Аль-Мншдави Хуссейн Абдулали, Аяд Хаяви Алатаби
Кафедра средств массовой информации Университета Дикар (Насирия, Ди Кар, Ирак)

ОСОБЕННОСТИ ВОЗДЕЙСТВИЯ ЦВЕТОВОЙ СХЕМЫ НА ПОТРЕБИТЕЛЯ В РЕКЛАМНОМ ВЕБ-ДИЗАЙНЕ

Цель работы – определить особенности воздействия цветовой схемы на потребителя исходя из технических возможностей веб-дизайна. Методология исследования. Данное исследование проводилось на стыке различных концепций и методов, т.е. по своей сути является междисциплинарным исследованием. В работе в качестве теоретико-методологической основы были использованы фундаментальные труды в области культуры цвета, цветовой рекламной коммуникации, материалы по веб-дизайну, техническая литература из области возможностей цветовоспроизведения в цифровом поле. Научная новизна данного исследования состоит в выявлении принципов использования цвета в рекламном веб-дизайне, соотношения технических возможностей с задачами рекламы и эстетикой культурных традиций.

Ключевые слова: *цветовая схема, веб-дизайн, цветовая рекламная коммуникация, теория цвета, психология цвета, цветовой баланс.*

Аль-Мншдаві Хуссейн Абдулаєв, Аяду Хаяві Алатабі
кафедра засобів масової інформації Університету Дікар (Насірія, Ді Кар, Ірак)

ОСОБЛИВОСТІ ВПЛИВУ КОЛІРНОЇ СХЕМИ НА СПОЖИВАЧА В РЕКЛАМНОМУ ВЕБ-ДИЗАЙНІ

Мета роботи - визначити особливості впливу колірної схеми на споживача виходячи з технічних можливостей веб-дизайну. Методологія дослідження. Дане дослідження проводилося на стику різних концепцій і методів, тобто за своєю суттю є міждисциплінарним дослідженням. У роботі в якості теоретико-методологічної основи були використані фундаментальні праці в галузі культури кольору, колірної рекламної комунікації, матеріали по веб-дизайну, технічна література з області можливостей відтворення кольору в цифровому полі. Наукова новизна даного дослідження полягає у виявленні принципів використання кольору в рекламному веб-дизайні, співвідношення технічних можливостей з завданнями реклами і естетикою культурних традицій.

Ключові слова: *колірна схема, веб-дизайн, колірна рекламна комунікація, теорія кольору, психологія кольору, колірний баланс.*

Problem statement. Colour in modern advertising communication is of particular importance. It is a complex natural and cultural phenomenon with an aesthetic and communicative function. The reaction to colour arises on the basis of an inner feeling that is largely mediated by cultural traditions.

Colour acts as a visual communication and is a means of transmitting verbal messages and a sign system with a certain set of meanings. As a carrier of information, colour has a large number of both objective and subjective values that have emerged in the course of cultural development. Colour can be seen as a symbolic marker of cultural traditions and customs. Thus, in any visual advertising communication it becomes an indispensable element of creating an attractive image of the product, idea. In most cases, the colour solution of advertising messages is created on the basis of intuitive emotional feelings of the developer, in which he uses his own experience, cultural and genetic memory. Orientation to the preferences of the potential audience can also be used. However, despite widespread demand, the issues of advertising colour communication are still poorly studied. This is especially true of web design, where there are certain technical problems of working with colour.

The objective of the study is to determine the characteristics of the effect of color scheme on the consumer based on the technical capabilities of web design.

Outline of the main material. In marketing, choosing a colour is a strategic task. Colour harmonization of advertising allows increasing effect on the consumer through minimization of intellectual labour on perception of the presented information. It also makes the emotional component of colour design the most effective. Increasing the importance of colour in advertising communication is due to the following factors:

- a situation of crisis of overconsumption, when it becomes necessary to develop technologies of soft effect on the consumer;
- information oversaturation of the market, which automatically leads to the priority of conceptual solutions;
- increasing design knowledge and increasing the competence of the modern consumer, which sets the requirements for manufacturers regardinga variety of colours of goods.

The volumes of advertising information increase in the context of constant competition, which creates difficulties in their perception and causes irritation for consumers. This becomes an incentive for severe filtering of information, ignoring unnecessary one. The so-called “clip consciousness” has become widespread, which represents the perception of the world through the most articulated signals. Therefore, brevity, informative saturation and colourfulness became the basic principles of any advertising messages. This has led to the use of different ways of influencing the subconsciousnessand emotions as opposed to the rationality used originally. Colour is just one of the deep sociocultural constants that can quickly build an associative series bypassing the critical logic of reason[1].

It is widely known that colour has a certain effect on humans. Assessment of colour shapes the consumer's impression of the advertising product. The psychological effects that arise in the process of perceiving the colour scheme of an advertising object provoke consumer’s further actions, whether or not beneficial to the advertiser. Therefore, this issue has been the subject of numerous research.

A visual nature of the colour is determined by the set of components. Colour, according to Mansell’s system [Munsell, 1912], consists of colour tone, brightness (lightness), chroma (saturation).

A colour tone or hue gives a general name of the colour. Often this particular component of colour is given maximum attention. But research has shown that brightness and colour saturation are also actively involved in emotional effects on humans [Suk &Irtel, 2009].

Brightness or lightness indicates how dark or light the colour is. Dark tones are low-brightness colours. Light colours are high-brightness colours.

Chroma or saturation shows how bright the colour is. The colours with low saturation look faded. High-saturation colours look bright.

Brightness and saturation often play a significant role in marketing. In addition, when working with brands, the colour is already specified (corporate colour or colour palette), so you can work only with the two remaining parameters - lightness and saturation [Labrecque, 2010, p. 81].

Colour psychology, the impact of colour on the target audience is one of the most specific aspects of web marketing. This is due to certain stereotypes about the colour preferences of certain categories of consumers. And any development in this field should be based on reasoned results of scientific research on colour as a factor of persuasion.

Researchers at Teesside Polytechnic University (UK) say that quite often the effect of the effect of a particular colour on an individual is offset by such elements of perception as personal preferences, experience, education, cultural differences, context, etc. [Color psychology: a critical review report]. Therefore, it cannot be categorically stated that a particular colour will cause certain emotions.

Researchers attach more importance to the colour matching a particular product. The basis here is the associations that arise in the perception of the product. The brand must be personalized with a feature that will be presented to the consumer. This feature is then matched with a set of emotions corresponding to certain colours. That is, a colour should be used in a specific context.

Therefore, when choosing a colour, the marketing context, images, emotions that arise when mentioning a brand should be taken into account.

Let’s consider the concept of “colour scheme” and different types of colour schemes used in web design. A colour scheme is a certain combination of colours that meets the set requirements.

[1]Several independent studies (The Effects of Store Environment on Shopping Behaviours: A Critical Review by Shun Yin Lam, The Benefits of Using Color by the Color Marketing Group, Color Psychology in Marketing" by June Campbell) point to colour as the primary reason for which people buy a certain product

1. Monochrome scheme - uses different shades of the same tone. Such a scheme can be used to create simple messages, to reflect the refinement of a brand. This scheme is also quite applicable to design a single plan.

2. Analogue scheme - involves the use of close tones located next to each other on the colour circle. Such a scheme contributes to the perception of design as an integrated development due to its tonal similarity.

3. Triad scheme is based on the use of three colours located at the vertices of an equilateral triangle inscribed in a colour circle. This scheme is most often used as it is recognized as the most universal and understandable. One of the colours is used for the background, the other two - for the content and highlighted areas.

4. Complementary scheme is built on contrast. This scheme uses colours that oppose each other in the colour circle. It is used to increase the contrast between the background and the foreground as needed. Additional colours are used to draw attention to a particular element. The desired object automatically stands out in contrast to the surrounding content.

In order to choose the components of a colour scheme for colour advertising communication, one must understand the preferences of the potential audience. Researchers explain certain colour preferences of people with the help of three basic theories:

- features of biology and evolution;
- gender schemes theory;
- ecological valence theory.

According to the biological features of the human body, colour preferences could be formed under the influence of various evolutionary processes. Initial colour associations could have been formed in humans during the early stages of their development. They are simple enough: dark blue is associated with night, passivity, and bright yellow - with sun, activity.

Colours that women like are associated with the need for collecting, finding fruit. That is, the ability to distinguish the wavelength of red colour was of the greatest importance in women. This adaptive feature has led to the formation of modern visual preferences [Alexander, 2003, p. 11].

Gender schemes theory explains the difference in preferences among men and women. In the process of the child's awareness of his/her gender, he/she is an active search for information related to his/her gender. He/she receives a certain colour association with sex from society, which has been confirmed by research [LoBue & Deloache, 2011].

Palmer and Schloss have proposed an ecological valence theory for explaining colour biases, according to which colour perception develops with the acquisition of certain experiences associated with it. The more positive this experience, the more the colour will appeal to the recipient. The theory of conditioned reflex is also a confirmation of this idea.

Ecological valence theory also explains the emotional fullness of flowers: what colour acts as excitant, which one smoothes down, etc. [Karen B. Schloss, Stephen E. Palmer. An Ecological Valence Theory of Human Color Preferences. - 2010. - http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.412.7403&rep=rep1&type=pdf].

All colours in a person's life receive certain meanings. We are already talking about the semantics of colour. It is the semantics that is used in advertising messages to convey certain meanings. According to the ecological valence theory, the human brain contains a network of knowledge that is associated with each other associatively - emotion, sensory experience, semantic meaning. The network of associations is constantly growing. There are hubs in it for each colour, which can also change with the acquisition of a new experience.

Colour psychology is based on individual experience and culture. The context in which the colour is represented is also important. No colour has a meaning that could fully describe it.

Colour influences our perception and behaviour by being able to elicit two reactions: excitation and estimation [Crowley, 1993]. Excitation is the initial, biological reaction, for example, warm colours increase the level of adrenaline, pressure. This is followed by an estimation of whether you like the colour. The estimation reaction is conditioned by an associative network. Everything that is coloured by emotions is better captured in memory. Positive emotions act as effective provocative.

There are three main factors involved in colour estimation: relevance, aesthetics, value. In an advertising message, it is important to consider the appropriateness of a particular colour in the colour scheme, focusing on the subject matter of the webpage and the message itself, it is important here to deal primarily the semantics, not simply the analysis of the colour preferences of the target audience.

The aesthetic appeal of the colour scheme also influences the choice, drawing attention to the web page. Value includes two components - social (relevance, "fashion ability") and functional (practical convenience).

In web design, colour balance is important. There is the most commonly used formula of the right colour balance "60/30/10". It is based on the theory of attracting visual attention. First of all, the visitor of the page draws attention to the element which occupies the smallest space, but at the same time contrasts with the main background. According to this formula, the main colour of the page should occupy 60% of the total area, the additional colour - 30%. The remaining 10% is used for colour accent. The main colour is the least saturated, it works as a background. The accent colour, on the contrary, is selected to be contrasting, rich. It highlights the most relevant information.

In addition to the rules of using colour and colour matching schemes discussed above, which are applicable to various colour-related activities, web design should take into account the colour model used.

The RGB model is based on three main colours - red, blue and green. The colours are mixed to produce different shades.

In HTML, shades are encoded using the 00 to FF characters, preceded by # character.

The CMYK model is based on four main colours - blue, purple, yellow, black. The shades here are also obtained by combining the basic colours. This model is most commonly used in printing and graphic art. In web design, the result of using this model has shown its effectiveness. The combination of colours looks bright and unusual, so it attracts attention.

Target page conversion is directly related to colour theory. When designing a colour scheme, it can be used as follows:

- Building a combination of colours based on their contrast, which facilitates readability of the page;
- Choice of psychologically justified colour associations.

These approaches allow conveying certain information to the user through colour combinations, creating an effective colour scheme that will work.

In this case, an efficient colour scheme based on the provisions of colour theory will allow:

- Keeping users' attention on the page;
- Forming an effective call to action;
- Reducing the number of rejections;
- Increasing page conversion.

In the practice of web design there is a certain set of commonly used colours that have the simplest and most stable associations. It includes blue, yellow, red, green, orange, pink, purple, black.

The choice of colours should be based on an analysis of the target audience and the nature of the information to be conveyed. The physical and mental impact of colour is largely due to the personal characteristics of the person perceiving it. German psychologist M. Luscher studied the individual features of the perception of colour compositions. Studies have shown that a person's condition at the time of colour perception can have a significant effect on his/her attitude towards it. In addition, the famous Lusher Colour Test is based on the sensory perception of colours - a psychological reaction that is not influenced by cultural traditions, it is universal throughout the world. This test can be used to determine the most optimal colours in each case, to identify the reaction of potential audience to them. But objective information can be obtained only by using its original - a printed format with accurately rendered shades. For this very reason, there is a real problem with colour rendering in web design. It is technical in nature. No matter how the colour is set on the page, we will see its variations on different monitors. This is due to the individual settings of the user interface. And this process is uncontrollable, we cannot influence it. Colour distortion can be quite strong. Then the colour scheme will not have the effect that was provided for during its development.

The colours on the monitor and in nature are created in different ways. Colour models have been created for the uniqueness of colour reproduction in different computer environments. The colour model represents the colour in digital format, which enables objective description. The number of possible shades is determined by colour depth - the number of bits encoding the pixel colour. Modern computers use the RGB colour model to reproduce colour on the monitor, which is additive. The colour is obtained by adding three components: Red, Green, Blue. The result depends on the amount of each component present in the image. Each colour on the monitor is described by a set of numbers. The optimum result is achieved with the help of colour correction, which involves adjusting the parameters of the image: brightness, contrast, colour tone, saturation.

Another computer colour model is HSB. It is easier to use because it is based on the principle of colour perception by the human eye. In this model, colours are set by three parameters: Hue, Saturation and Brightness. [Yatsyuk, p. 77-82], [Yatsyuk, p. 170-172].

Web design involves viewing an object on a monitor screen. This causes a number of problems that arise when choosing a colour scheme. The most important are the following:

- Choice of colour for writing text - is solved by the use of colour contrast between letters and background;
- Use of shades of the same colour tone in web design is problematic because it impedes perception;
- Saturation - text, graphics and background should be different in saturation; saturation close to achromatic gray should not be used;
- Brightness (lightness) - a maximum contrast of text and graphics with the background of appropriate brightness is used for maximum expressiveness;
- Choice of background - complex textures should not be used for the background; preference should be given to continuous flood filling or textures with subdued brightness and saturation.

The image quality on the screen depends on the technical parameters of the computer and the software used. The most part of screens deliver 256 colours, enabling designers to create up to 16.7 million colours. If the colour used is not in the set of colours displayed on the screen, it will be distorted. Then its use becomes inappropriate. For example, metallic colours cannot be used in web design because they cannot be reproduced on a screen. Also note that Microsoft Internet Explorer and Netscape Communicator browsers use only 216 colours. Therefore, images created using 256 colours will be distorted because of browser settings.

This problem becomes most urgent when filling in one colour, since the distortion becomes apparent. To avoid this, you must use colours from the main palette.

Conclusions. Attitude to colour has a significant historical and cultural basis, which includes the symbolism of colour, colour culture, psychophysiological features of perception and reaction to colour. Thus, it is possible to make effect on the consumer with the help of a specially selected colour scheme, arousing certain feelings and initiating the necessary actions. Colour adjusts the perception of advertising information, so it requires a careful approach.

Colour design serves as a tool to focus the user's attention on the important information for the user and the owner of the website. In advertising web design, the choice of colour scheme, its components cannot depend on the designer's tastes, because colour is one of the means of attracting attention, and at the same time, can become a serious designer, which can significantly impede perception. Therefore, it is important to find the optimal solution here.

It is possible to distinguish the basic rules of the use of colours in web design in general, and for advertising purposes in particular. One of the problems with web design is the exact reproduction of colour, as each device displays colour in its own way. Accuracy mostly depends on the technical parameters of the device.

In general, taking into account all the components of the process of colour scheme development in web design, you can get the necessary result of impact on the main mass of the target audience.

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Стаття надійшла до редакції 23.08.2019