

Importance of Color in Interior Architectural Space on the Creation of Brand Identity

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ABSTRACT

Many theoretical research work in different disciplines of knowledge have dealt with the topic of color, its properties, systems, and relationships. Color is a lot more than just a layer of paint on a surface, or a tool of decoration. It is a basic element of design, and the most expressive, by the meaning it conveys, and the psychological effects on the viewers. Color has an important role in bringing out the image of interior spaces by means of integration of the colors used in the general interior design, in furniture, and in accessories, for the creation of the character as a whole. The concept of 'brand space' and its relationship between the general image of interior space has also been a matter of interest. In the recent years there was a noticeable interest in the identity of the brand space, how it may add to the aesthetic properties of the design of interior spaces, and how it may parallel affect both the performance of users and the commercial trust and attraction of the customers. Taken together, color properties and the brand space identity are both very effective in creating the attractive image of a designed commercial space.

Accordingly, the topic of the research work has been decided upon to be an investigation regarding the limited state of theoretical and practical knowledge that offer a clear photographs about color formations, and the identity of brand space, and their role in enhancing commercial activities in commercial spaces. The study shall try to concentrate on how color and the brand space can be integrated, and what are their parallel effects of this interaction on the interior spaces of commercial buildings. To achieve this aim, a qualitative study where the investigation depended on a survey

regarding a selection of a number of buildings of famous enterprises, and making an analysis of their features according to the theoretical parameters adopted. The descriptive approach was adopted for the purpose of analyzing the chosen samples, using photographs and information by survey. Eight samples of commercial interior spaces, from a variety of internationally renowned companies' buildings having different operational functions, have been chosen. The analyses were made on the basis of the properties of the colors used in the creation of brand spaces as the interior spaces of these buildings, the psychological and visual effects on both the employees and the users of these spaces.

The investigation concluded that there is great effect of the brand space and the color systems used in the spaces on creating a parallel response in interior space of commercial building. There was a noticeable effect of the brand on the design of the spaces of the commercial buildings and of the colors used there, especially on the general interior character, on the furniture, and on the accessories, and on the accessories, by design these elements as way to reflected brand identity (ei. color and form). Through the analyses, it was found out that color properties are very effective in creating positive effects on the atmosphere, realized by the contrast in the color systems, between cold and warm colors, as well as in color complementary aspects, in widely used neutral colors with accent colors to give a kind of activity and energy inside these spaces. Transparency between the outside and the inside was also employed to create a kind of relationship with the surrounding, and to make visible the attempt of creating a brand identity by the usage of color. It was concluded that color systems and brand space identity have clear and large interaction on the interior design of commercial

buildings, and the ways they induce a parallel effect the users of the spaces are means of the color patterns occupied by the specific brand spaces.

Keywords: Color, Brand Identity, Brand Space, Interior Space, Commercial Space

ÖZ

Renk, özellikleri, sistemleri ve ilişkileri kapsamında farklı birçok bilgi disiplninde yapılmış kuramsal çalışmalarda ele alınmıştır. Renk, sadece bir kat boya ya da dekorasyonun bir aracı olmaktan çok daha öte öneme sahip bir tasarım ögesidir. Tasarımın temel ögelerinden birisi olmakla birlikte, taşıdığı anlam boyutu yoluyla insanlarda yarattığı psikolojik etkiler sayesinde en etkileyici ögesidir. Renk, iç mekânın genel imajına yönelik önemli bir rol oynar; mekânın oluşturucusu olan tüm eleman ve aksesuarların bütününde yaratılan karakterinin oluşmasında etkindir. Bu çalışmada, renk ve ‘mekânın markalaşması’ ilişkisine bakılmıştır. Son yıllarda, markalaşmış mekânların kimliği konusu ilgi çeken bir alandır. Renk özellikleri ve markalaşmış mekân kimliği birlikte ele alındığında ticari mekân tasarımı için önemli bir alan oluşur.

Bu doğrultuda bakıldığında, bu çalışmanın konusu renk ve markalaşmış mekânların kurumsal kimliği arasındaki ilişkiyi sorgulamak üzere kurgulanmıştır. Bu alanda yapılmış kuramsal ve pratik çalışmalara katkı koyacağı düşünülen bu çalışmada, renk ve markalaşmış mekân ilişkisine yoğunlaşıp bu kavramların entegrasyonunun nasıl yapılabileceği, ve bu etkileşimli paralelliğin ticari mekânlardaki etkisine bakılması planlanmıştır. Bu amaçla, dünya çapında bilinen ticari firmaların mekânlarının bir seçkisinde, rengin mekansal özelliklerinin kuramsal parametrelere yönelik incelendiği nitel bir çalışma yapılmıştır. Bu betimsel yaklaşım seçilmiş örneklerin analiz edilmesi için benimsenmiş, ve araştırma sonucu elde edilen gerekli görsel ve bilgiler kullanılmıştır. Farklı sektörlerde çalışmalarını sürdüren dünya çapında üne sahip ticari

firmaların mekanlarından sekiz örnek seçilmiş; ve bu firmaların mekanlarındaki renk kullanımına bakılmıştır. Kullanılan renklerin özelliklerine bakılmış ve markalaşmış mekan oluşturulurken rengin bu konudaki belirleyiciliği analiz edilmiş ve kullanıcılar üzerindeki psikolojik etkilerine bakılmıştır.

Araştırma, ticari mekanlarda markalaşmış mekan yaratmak için rengin önemli bir unsur olduğu yönünde sonlandırılmıştır. Ticari mekanlarda, markanın ve bu doğrultuda kullanılan renklerin, bütüncül bir şekilde, mekan karakteri yaratma bakımından dikkate değer bir ilişkide olduğu ortaya çıkmıştır. Analiz neticesinde, soğuk sıcak zıtlığı ya da doğal renklerle çarpıcı renklerin birlikte kullanıldığı renk kombinasyonları ile mekana enerji ve aktivasyon veren tamamlayıcı renk kombinasyonları gibi renk özelliklerinin mekanın atmosferine yönelik etkiler oluşturmada çok etkin olduğu saptanmıştır. Yine, örneklere bakıldığında çevre ile ilişkinin kurulduğu iç-dış arasındaki şeffaflıkla mümkün kılınan tavırla da mekanın renk kombinasyonunun görünür kılınması yoluyla rengin marka kimliği üzerindeki etkisi ortaya çıkmıştır. Çalışmada, renk ve markalaşmış mekan kimliği kavramlarının birlikteliğinin ticari mekanların tasarımında önemli bir rol oynadığı, ve kullanıcılar üzerinde paralel bir etki oluşturduğu sonucuna varılmıştır.

Anahtar Kelimeler: Renk, Marka Kimliği, Markalaşmış Mekan, İç Mekan, Ticari Mekan

To all my family

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Chapter 1

INTRODUCTION

Color has the power of expressing feelings and emotions, that's what Van Gogh discovered about color and Paul Gauguin before him, they both managed the color and brand space as a mean of expressing their emotions, artists use color to express their emotions too but not by just observing what they see and paint, color exists in mind and can be expressed subjectively and objectively (Wong, 2009).

Color plays an essential role in interior design because it can be recognized instantly and gives people a sensual visual perception. Each color is represented by certain mood and is associated with certain environment that affects people's perception and emotion toward that space. People are now thinking more about the environment they live in especially with surfacing of the human oriented interior design trend; interior design will now respect human beings and embody its natural quality. Humanization is the design state that meets human requirements. It is the accomplishments of human oriented desire. Color it is beneficial to human mental and physical well-being (Read, 2009).

The great importance of color was the main motivation for the theme of this work. Color is considered as one of the fields of humanities that establish a relation between art and inner human reality, which has a strong effect on human personality and behavior (Holtzshue, 1994). Color is also considered as one of the means by means of which

human-being understands what is surrounding him. It plays a role in providing the suitable atmosphere that enhances his various activities, especially inside commercial spaces, where commercial is one of the important elements of his daily life. Among the activities that satisfy the most important daily needs, commercial space offers people pleasure, excitement, content and comfort (Holtzshue, 1994).

Color is closely related to form, and may be one of its basic properties. Just like forms and shapes have their own dimensions and measures, colors also have their dimensions and physical properties, which will be dealt with in this work to look into the possibility of practically applying them according to particular specializations. Different colors interact with each other on scientific, structural, and artistic bases, as they have their own systems and relationships. The interior architecture of commercial spaces is suffering from striking poor choices of color harmony, as indicated by unscientific choices of color, especially in the interior spaces of commercial centers. As a result of the importance of commercial activities, and to what extent there is a shift in the concept of using color during the recent times, there is a tendency to use exciting colors inside these spaces. The theoretical propositions will indicate the importance of responding to human needs as a psychological requirement of human-being. The response to commercial needs have become more than a matter of feeling, but it involves a mental activity which depends in some of its aspects on a kind of allusion, at times coupled with a special experience of the events (Abbou, 1982).

Commercial buildings are major attraction places for people due to the open economical society, it was a good challenge for designers to make these places attraction sites where

everyone seek, they embraced many design aspects such as color as a visual aspect to change the environment from steady to dynamic (Wong, 2009).

A branded environment that recognizes equality brand is three dimensional applicable environments, the design practice of brand environment is led through research and other efforts by interior designer or architect and can include other strategic consultants and experts of other discipline to develop a brand (Pittard, et al, 2007). People can relate and identify brands easily when brand elements are coherent and unify brand identity (Pittard, et al, 2007). Brand's logo and personality are the key points of consumers' association with the brand. Brands are associated differently, some are fun, hip and innovative while others are reliable and trustworthy. Logo and personality build that association that builds powerful mental and emotional reaction and build the brand identity (Gabay & et al, 2009). Brand managers use colors for two reasons, one to draw new consumers and facilitate identification with the brand. The second reason is making the color a way to communicate with consumers and set an important role in their decision making when commercial time is limited (Silayoi & Speece, 2007).

Brand managers changed their focus from short term sales goals to creating brand equity by creating marketing campaign that aims on consumers' relationship with the brand. It is essential that consumers must have a positive association with the brand in order to establish brand identity. The color harmony of the brand's logo once it is recognized by consumers, that's when they start associating with the brand where color in brand's logo help consumers learn information about brand's personality (Matzler, 2008).

As mentioned above, commercial activity is one of the daily life necessities of human-being. By means of activating visual contact to establish an interaction between the viewer and the interior space, by encouraging shoppers to buy, offering them pleasure and excitement, color planning asserts its function in realizing the commercial profit, as well as creating a natural interaction through mental and sensory responses. Studies have found out a number of responses created by color and brand space in interior spaces, which were used in discovering which color bases are able to realize certain responses out of inciting feelings of attraction, pleasure, and excitement, all of which help in enhancing commercial activities inside commercial building (Holtzshue, 1994).

It was found out by the researcher that there is a weakness in using color in the proper way, which is an important part of the visual effects that helps in creating an interactive environment that attracts the consumer and creates a positive feeling towards interior spaces. The same thing can be said about brand space that attracts the consumer by the same effect. When the researcher, investigated the available specialized literature of this field, browsing through what academically covers human needs, the researcher arrived at an appreciation of the theme of the research, and the scientific and practical area it occupies, ultimately to arrive at a clear cut question worthy of being investigated, which is: Deficiency in the proper scientific knowledge: **Importance of Color in Interior Architectural Space on the Creation of Brand Identity**

1.1 Importance of the Study and Research Problem

The success of any design depends on how to find solutions for the problems inside a space. Architects and designers should take to consideration the psychological requirements of those who use the space, besides the functional requirements of these buildings. The researcher found a lack in the information about rules of color formations, on the identity of brand space used inside in architectural interior spaces of commercial buildings, and how they realize certain responses, the matter that necessarily influences the commercial activities inside these spaces. There is also a shortage in the scientific and practical information that provide a clear photograph of the nature of the effects of color formations and brand space identity on the volume of commercial activities in commercial building space.

It is to assert the importance of the interaction between human-being and interior architectural space, through investigating the role of one of its basic elements, which are colors and brand space, and their effects in creating attraction and excitement in this space. These effects help in enhancing commercial operations and economic activities, by highlighting the following factors:

The importance of color (its meanings and properties) and its psychological and social effects on human-being, pointing out to the way human-being interacts with commercial interior spaces by means of studying commercial activities within the psychological framework, and the behavior of users under the effect of attraction and excitement. Through that social interaction is realized, and commercial activities are enhanced. Marketers are working very hard to communicate brand personality to consumers and

create a successful logo that can solely represent the brand knowing that consumers are influenced by its colors that will eventually bring favorable responses to the brand.

1.2 Aim of the Study

The aim is to provide stud by concentrating on the effects of how colors are used, and the identity of brand space, on the interior spaces of commercial buildings, to be used by architects and interior designers in their applications. In addition to that determining the effects of color formations of a brand space on the interior commercial spaces, and how it enhances commercial activities; and to what extent the properties of color, (hue, value and intensity), warm, cold, and neutral colors that help in enhancing trading activities inside interior commercial spaces will be addressed.

1.3 Methodology of the Study

This work of study relies on the theoretical basis of investigation, in clarifying the relationship between color formations and the identity of brand space inside commercial spaces. There will be an evaluation and analysis of certain samples of commercial buildings of some famous concerns of various functions, collecting data by means of a survey. Following that there will be an analysis of these buildings according to criteria adopted by the researcher on theoretical framework.

The process of analysis begins with collecting photographs and information from survey, then theoretically analyzing it, according to the studies made in previous theoretical chapters. The process depends on identifying the properties of used colors, the identity of the brand space and the relation between the colors, by means of a

psychological aspect regarding of the form, the colors, and the function of every brand space, the organization of interior architectural spaces and to what extent they are influenced by the form of the brand space and its colors, as well as the visual and concrete elements in these spaces. Therefore, the researcher adopted the descriptive method in analyzing the content of the chosen samples. That is because he follows a more accurate manner in doing the analyses to realize the aims of the research work. There is also a simplified table about the final analysis of the samples. Finally, there is a discussion of the results in the conclusions chapter.

1.4 Limitation of the Study

The research work will be within the following parameters: Emphasizing the methods of enhancing the commercial activities by means of using color formations and brand space inside commercial interior spaces within the limits of interior architectural design. Concerning the subject matter, it will investigate color concepts and systems, and the effects of its properties (Hue, Value and Chroma), and studying the marketing role of brand space, in addition to the parallel effects that emanates from of the architectural interior spaces of commercial building. About twenty five samples of International companies were chosen, but because of lack of sufficient data and photographs for some companies such as: (Apple, Amazon.com, Intel, HSBC Bank, 3M... etc.); repetition about color usage in brand and interior space such as: (Coca-Cola, Samsung, Canon, Colgate, Nescafe... etc.), only eight samples were used for the analysis.

Chapter 2

INTERIOR SPACE

The discussion in this chapter will be about commercial exhibitions space. It will investigate its historical development up to the modern concept prevailing today. Commercial spaces come in different forms and styles. The investigation in this chapter attempts to determine the style of commercial spaces, their elements, sizes and forms within the context of this study. In general, the actual environment is either physical like weather, or visual, or Psychological like social and cultural environment. Visual environment inside commercial buildings space might create a positive side that attracts the viewer, and creates in him a feeling of attraction that motivates him to buy certain products. That can be achieved by scientific application of colors and forms inside commercial spaces.

But modern studies and research works have not dealt in sufficient detail these relations, and were characterized by generality in handling the subject, especially concerning the response to those color forms that motivate the spectators. Therefore, the discussion will deal with concept of perception, especially the visual, and the aspects of feelings (attraction, pleasure, and stimulation), to offer a clear image of this relation inside interior commercial spaces.

2.1 Definitions Regarding the Interior Architectural Space

Space is main item in designer or architect motherboard and primary component in interior architecture. Through the magnitude of space is not only we move, we view shapes, hearing voices, sense pleasant the breezes and warmth of sun, odor the fragrance of flowers. Space inherits the sensory and esthetic properties of these items in this area (Isaac, 1971). Space is element of material such as wood and marble. Until now it is nature formless and prevalent. No definition for global space. Element is put Once an at its area but, is established relationship visual. Is the introduced another elements in field, established relationships among space and elements, as well as between elements themselves (Scott, 1968).

In commercial interior space, as the ultimate results of production and consumption, the operations of selling and buying are the two fundamental elements in commercial activities, sought by human-being. Accordingly, this commercial production requires spaces in which this activity takes place, by supply and demand. Therefore, spaces for selling and commerce can be defined as the physical structure that contains goods offered for sale, merchants and shoppers. It is then an interior space that accommodates social groups of different levels (Smith & Gruen, 1967).

The main activity in this physical structure is supply and buying. The main concept in designing it is to create an atmosphere of attraction which has a special effect on the buyer, being the main joint that takes human-being from private limits to the general space (the commercial space), aiming to direct him to the goods and commercial them.

By attractive supply through attraction and motivation the success of the operation is efficiently secured. By more of the attraction elements towards the buyer, and by good supply successfully designed presentation a continuous kind of competition is realized among shop owners, with more profits, and more encouragement to producers to improve the quality, and increasing production (Maitland, 1990). Commercial spaces, especially the interior ones, have been subject to many changes, whether in their functional or aesthetic contents; as a result of developments in societies and in the behavioural consumption effects of people. In general, interior commercial space was and still is a chain of images and impressions of human needs. It has become necessary for commercial spaces to be effective on the shopper, besides offering him a chance to relax and rest within an active interior space, which is attractive and effective.

This place may have many forms. It may be a small or large commercial, of one or many floors, specialized in one kind or for many kinds of goods, according to the goods offered, or showrooms of commercial companies (Hardwick, 2004).

2.2 Historical Background of the Profession of Interior Architecture

Since prehistory human-being practiced selling and buying within a limited space or place. Trading in goods is a very ancient activity, which took place when people started settling in certain places. It represented the outcome of production and consumption necessities. This activity initially started with bartering, which was the only means of exchanging goods and labour. It took place in open spaces that belonged to all (Mumford, 1991).

During the Greek era the market place went through phases of development. It occupied an important situation in the center of the Greek city. This phase witnessed an important development, when for the first time an interior space appeared special for selling and buying, after it was open and unlimited in space. At later stages, when Islamic cities began to appear, the organization of the marketing spaces developed and took certain shape and style, when more different goods and products of different origins were on sale. Commercial building places took a linear form, or open court shape. At later more advanced stages the market place took the shape of a commercial street, which was rather covered to provide protection against weather conditions, and was called “Bazaar”. In spite of the difference in culture, the general form of the markets during the middle Ages was not much different from what it was in Islamic and Arabic cities. During the renaissance, as a result of the great development in trade due to numerous wealth sources, and the technical advances, production started to be in huge quantities, which required more venues of marketing and consumption. All of that led to many changes in the commercial relation between social classes. Accordingly, specialized shops and multi-functional commercial centers started to appear at later stages (Mumford, 1991).

In modern times cities became larger, and so became purchasing abilities, commercial quarters and streets began to be built, and the market centre became a group of shops side by side; and with wider scope of production malls and department stores began to appear (Mumford, 1991).

2.3 Architecture Space and Human Senses

2.3.1 Perception

Means the acquisition of knowledge, it is a process of knowledge and comprehension, and the production of knowledge. The important point here is how people understand and give meanings to what is around them, and how to know it (Badrami, 1991). It also refers to the ability of human-being to use his perceptual faculty to interpret and understand the surrounding environment by a simple method which can be controlled by the neural system (Saleh, 1982). Perception is also represented by many concepts, of which is the reaction of the living being towards his environment. Or it is a psychological process of the perception of the outside things and their properties, and the direct relation with sensual operations (Akel, 1979). It could also be the process of organizing and interpreting familiar matters, whatever changes or defacing in their general forms they might be subjected to. And it is a psychological response to a group of complex sensory stimulations of the outside world (Rajeh, 1968).

It can be concluded that through perception it is possible to acquire knowledge from the environment, as a simple and direct operation, and constantly subject to variation and differences as a result of high level of complication in the field of the perceived scene, which is influenced by what is around it, and the limited perception faculty of the spectator. The field of perception falls in between the basic field of the senses and the field of knowledge (Saleh, 1968). Perception has a close connection with our behaviour, for we respond to the environment not as it is in reality, but as we perceive it. That

means our behavior depends on how we perceive what is around us, things and persons (Rajeh, 1968).

Many different variables interfere with process of perception. Some of them are stimulations that are related to the properties of the conceived things; some are physical, some psychological, and some are cultural or social, which form the outcome of these variables (Saleh, 1982). Therefore, perception is a process of mental imagination of the outside matters through the effects of direct external stimulants, which lead to the satisfaction of needs (Abdel, 1995). That is why the most important design theories of the environment were based on ideas of human needs, by trying to interpret the inner forces psychologically and physically, the conscious and the unconscious ones, according to many samples adopted by designers (Moles, 1969).

Visual perception is not only an activity of the eyes, or a result of visual usage, or just a negative reception of visual stimulant, but it is also a reaction to attention. Spectators intently examine their field of vision to acquire details that help them to organize the surrounding environment (Smardon et al, 1986). Visual perception represents the outcome of the neural system operations of organizing and processing the mental clues received by the senses. Scientific facts indicate that the brain is a collection of parallel operation systems, each organizes its inputs, and works to discover the property that determines certain behaviours (Saleh, 1982). Regarding the perception of color it is known as the difference that can be noticed between two parts in the visual field, which is unrelated to their time or place (Saleh, 1982).

On the other hand, the Mechanism of Visual Perception is that the eye is a visual sensory tool that transmits the received image to the brain, which produces reactions and interpretations. The perception process, which is different from one to the other, depends on the cultural background and the age and experience of the spectator (Rajeh, 1968).

2.3.2 Attention and Attraction

It is the operation of directing the mind towards something to put in the focus of feeling without which feeling does not transform into perception (Shultz, 1986). Therefore, when human-being deals with his environment he should know it very well in order to be able to acclimatize with it. He should also pay attention to what concerns him in it, and perceive it by his senses to be able to have an effect on it, and be affected by it. Attention and sensory perception form together the first step in the relation between the individual and his environment. It is the basis on which depend all the other mental processes. To learn something or think about it we should first pay attention to it. Attention precedes perception, and prepares for it. The first looks and senses, while the second discovers and knows; there is a difference between them. Everybody may pay attention to something, but they are not the same in their perception, being different in their cultures and experiences, in their points of view and intelligence, and other factors (Aljasmany, 1984).

Some kinds of attention are:

- a. Enforced attention, like attention to a flashing light. The stimulant here forces us to choose it, not any other.

- b. Spontaneous attention, which is the attention paid to something of interest, not any other one, and needs not much effort.
- c. Intentional attention, which requires exerting efforts like listening to a lecture, or a boring conversation.

It is a human reaction through physical stimulation, expressive behaviour, and mental experience. Attraction is one of the processes within the interest of psychology as one of the psychological processes (Noppler, 1992). It is also considered a process of interaction between the recipient and the environment; a sentimental response related to the possibility of the subject to realize a state of pleasure to the onlooker. Therefore, it is a case of excitement accompanied by physical changes. Attraction is realized by the interaction of the sensing organ (happy interaction) which creates a sense full of joy (Abbou, 1982).

Mutual attraction is the attraction between elements with similar properties. Attraction by art vision is the power of our sensing that comes from an active force from outside of our bodies as a result of a work of art that attracts us (Abbou, 1982). Attraction is the opposite of detraction or aversion. In natural sciences it is defined as the direct power of attraction that results from a new energy, either from a high natural energy, or from a matter of strong contrast between visible things. Excitation can be by color that attracts the attention, and pleases the eye, and might attract the attention at a distance. The onlooker can be pleased with the details of the interior spaces of a commercial centre with a specific color system (Noppler, 1992).

2.3.3 Sensation and Feelings

This is a psychological effect directly formed by the reaction of the eyes as a result of looking at a certain object which stimulates the eye. Nerves connected to the eye carry the impulse to the neural centres, which directs the response tools and determines what activity to do, which could be to stop and look for a certain limit of time. Some studies have found a certain degree of interaction between sensation and perception. Sensation is the psychological effect that comes out directly from the reaction of a sense, which goes to the sensory centres of the brain (Rajeh, 1968). Sensory features, like color and form, are not realized except through sensation. This knowledge is an observation of the sensory properties or the direct perception of it; while perception is a process that makes the individual immediately conscious of something. We can conclude that sensation is the simplest degree of perception, and the first step of feeling.

It is noticed that the perception and the feeling of the interior spaces of commercial premises takes place initially by visual sensation. The more stimulants there increase the attention and concentration in that space. But our senses are usually focused to a certain point. Our attention is centred on the things in front of us in these spaces, and what is in the background fades, and our attention on it is dispersed. The reason is that any image is composed of two contrasting groups:

- a. The positive elements which perceive the form.
- b. The negative elements which constitute the background of objects (Ching, 2004).

As an example, the images of objects that look bright or of pure and strong colors, compared to their background, will spontaneously attract the unconscious attention to that stimulant which might induce a certain response.

It is the reaction to an outside stimulant, having physical changes, like feeling fear or anger. The response could be immediate, or a result of an indirect personal process (Young, 1975). Visual feeling depends on the data that comes from the visual system, which have a strong effect on the experience of the recipient through the information given to him concerning the form of the interior space in general, whose details are colors, its contents, and usage...etc.

The first information the recipient gets about the interior space of a commercial centres he is visiting comes through visual sensations, and his initial feeling from looking at the interior space, and the consecutive stages realized through seeing the space as a whole. This is especially true because architecture deals with masses, spaces, colors, and different matters (Young, 1975). The visual relation between the viewer and the building is used to describe the direct feeling and sensation towards these spaces, especially in respect of interior spaces. The relation between human-being and his physical environment represented by the stimulant and the reaction is but a conscious relation of passion and sensation; it works together in creating a case of dynamic balance between the self and the surrounding. Human-being will be in interaction in between the elements of the perceived space through his different sensation systems.

The visual sense in particular is most effective in this interaction, when one analyses the environment and its scenes by interpreting the sensing stimulants, of which is color. The sensing process begins to record and interpret the environmental stimulants in the form of images and scenes that could be understood.

Regarding psychological issues:

a. Wondt classifies three dimensions of sentiment:

- Relaxation – strain.
- Unpleasantness – pleasantness
- Excitation – calmness (Noppler, 1992).

b. Young suggests five dimensions of human sentiment:

- Activity dimension
- Pleasure dimension
- Integration dimension
- Stress dimension
- The social orientation dimension (Young, 1975).

c. Sensation can be classified into:

- Attraction.
- Enjoyment.
- Excitation.

2.4 Constituent Elements of Interior Architectural Space

All commercial interior spaces are designed to achieve high levels of performance, identifies by the basic architectural elements that compose its structural system. That will realize the idea of the surrounding, like columns, walls, roofs, and floors, etc. By these elements we can develop, decorate and control the interior design, and determine its transparency. What concerns us here is to manage these elements to make them not only how to function, but also on their expressive properties to make them aesthetically attractive, and psychologically acceptable, within one visual and sensory space. It is possible to summarize the this elements by two main groups: formative design elements of space such as (Walls, Ceilings, Floors, Staircases, Apertures, Funiture and Accessories) and qualities related to the character of interior space with a particular emphasis on color and light (Eisner et al, 1993).

2.4.1 Formative Design Elements of Space

They include walls, roofs, floors, apertures, stairs, and escalators. They will be discussed in some details.

2.4.1.1 Walls

Represent the most effective vertical planes. Visually, they are one of the primary elements that define an interior space, and separate it from another space, whether physically and visually, or just physically. They also form the facades of commercial spaces. The design of the facades, therefore, is a fundamental matter that influences the visual dimension because it takes the largest part of the visual field of the shoppers. That is why it should be taken into consideration, when designing commercial building facades, to realize the maximum amount of transparency (Beddington, 1982).

Walls in exhibition spaces may be used as the background on which mirror units can be suspended to suit the kind of goods exhibited; and as a background for design forms for the kind of goods. That can be made, either directly on them within forms especially designed for selling, or connected to space mass, or by using movable exhibition tools placed in front of walls that surround the commercial space. They are of two structural kinds:

- a. Bearing walls they represent the fundamental element in supporting other planes that define space.
- b. Non-bearing walls like partitions, the fixed and the moveable kinds. They offer freedom of use in limiting interior spaces. They are highly flexible for changes, and may have different forms. Some are curved, which are more dynamic and visually active, and able to lead our vision with their curvatures (Ching & Binggeli, 2004).

2.4.1.2 Ceilings

They are the horizontal elements, parallel to floors, determine the height of the interior space, and have an effect on its scale. They are the level planes that have an important visual function in defining the aspect of the interior space, and its vertical dimension. They have an important role in the interior space, by what the interior designer does by using secondary roofs of various impressions and forms penetrated by artificial lightings. Variations in the height of ceiling may help in identifying the spatial limits of adjacent spaces (Ching & Binggeli, 2004).

Any manipulations in the transparency of the ceiling offer different psychological and mental impressions. By using skylights through transparent glass a kind of transparency is achieved inside the space, at the level of the roof, which enlarges the apparent size of the space. They may structurally be of two types:

- a. Structural ceiling it is the main element that covers the interior space. It is part of the building system of the building structure, directly related to building materials.
- b. Non-Structural ceiling it is the secondary roof. It may be of different forms, which can be a repetitive or a different echo to the aspect of the interior space. Its height can be controlled within the space. These roofs conceal a space between them and the structural roofs, which can be used for laying electrical wiring systems, and fixing sources of artificial lightings (Ching, 1987).

2.4.1.3 Floors

Floors are the basic element in constructing a commercial interior space, on which other elements are constructed. They are considered horizontal flat planes over which people move, so they are the stage of events over which different activities and events take place. As the heaviest tools of goods showing means, the static and the moveable, floors should be constructed to a safe standard to be able to continuously bear all the weights (Ching, 1987).

Thanks to the great technological advances it is possible to manufacture glass plates strong enough to bear heavy weights, and to be used in floors, creating a wide range of

transparency within the flat surface of the space. Through these glass plates some kinds of concealed lighting can be installed, which can reflect visual light weight to the floor masses, increasing its transparency. They are constructed in two kinds:

- a. Constructional floors they are the floors of the constructional structure of the interior space.
- b. Secondary floors they are made in different materials and specifications; used to realize certain purposes: to reduce the scale of the space, to use them for artificial lighting sources, or to use the space between them and the constructional floors for laying electrical or electronic wirings (Ching, 1987).

2.4.1.4 Staircases

These are means of vertical transit between different floor levels. They are of two structural types:

- a. Structural elements staircases and escalators that are part of the constructional system of the building.
- b. Non constructional elements staircases that are added by the designer to the space after it is constructed.

Vertical transition operation reflects different points of view, as they bring about changes in the perception of the surrounding interior spaces. When ascending, different images appear to the eye, while others disappear; and there will be a change in relation between those inside the space, when new images attract the attention, which look as an element of theatrical feature. In other cases the designer overlooks this theatrical feature

when he wants to make the staircases look more simple, more functional, and does not attract the attention (Abercrombie, 1991).

2.4.1.5 Apertures

In a commercial space apertures are represented by windows, gates, and shop facades that connect the inside to the outside. They are part of the transitional elements that open wall surfaces, and give the interior space its form, and define its properties; especially concerning its relation with adjacent spaces by connecting it with them, visually and physically. Apertures that open vertical constructs are a source that creates transparency in a commercial space, being the most visually active (Ching & Binggeli, 2004).

2.4.1.6 Furniture and Accessories

They are the group of elements that include furniture and showing means, as part of the design of interior spaces that provide the space a rich content in texture and vision. They are the furniture and their complements. These elements are different according to the type of goods to be marketed in these spaces, being the group of elements that are within the field of interior design. They enrich the space with vision and texture; furniture to be of the vital elements that connect man with the interior space.

In commercial space furniture include chairs and tables, and other means of show shelves and stalls. The ideal design for that is a flexible form that includes moveable parts. The goods personally chosen by a customer are exhibited on moveable shelves, while the goods which require services or explanation are shown on counters and containers with a specialized users to serve the customer. These units are distributed in

certain locations according to the design plan, and they give an impression different from just the routine exhibition of goods in shelves and walls (Beddington, 1982).

The role of furniture in transparency should be mentioned. A space can be described as transparent by using masses and furniture of light visual weight; a wooden cube has more visual weight than a cube made of glass or another transparent matter. The second seems visually lighter, and gives the impression of transparency by the images seen through it. We see the world nowadays going more and more towards lightness in visual weight in design, avoiding masses and ornamentations which prevailed in the past. Furniture design, for example, has become more simplified and transparent; glass is more widely used in furniture industry, like chairs, tables, and vitrines that are strong enough to support heavy weight (Sinclair, 1986).

There are a number of orders in furniture distribution in interior spaces, including commercial ones. Ball proposes a system of furniture distribution as a question of visual matter for interior spaces. He suggests deciding upon the main features of furniture through repetition, similarity, and contrast. Repetition creates a space more simple and coherence; while it is more dramatic by relations of contrast. Therefore, the interior designers bear the responsibility of choosing the pattern of design suitable for the commercial space he is designing. It should be able to create balance and transparency by selecting a pattern of organizing the showcases in a way where furniture pieces do not obstruct the vision of the customer to see the parts of the interior space, or the information planned to create an illusion about the size of the interior space that serves

the aims of the design of space the interior space. For that, designers began to use stimulating colors to create a degree of aesthetics in there spaces (Beddington, 1982).

2.4.2 Qualities Related to the Character of Interior Space with a Particular

Emphasis on Color and Light

There are many elements used in the interior design process for commercial buildings, that includes: lighting, color and texture

Studying the possibilities of creating the best lighting system is one of the aims of a successful design. This because lighting in commercial building decide to a large extent what we see, and what our feeling about what we see is. Light is the most important and most effective defining interior spaces, and in expressing the formal properties of objects, and other features, like color and texture.

The action of light has an effective role in defining the visual feature of surfaces, the transparent and the dull. Lighting is the simplest means in attracting the attention to the goods, which become more interesting under studied lighting, when lighting sources are either fluorescent or Chandeliers or lighting bulleted. The first being more economical and offer a flood of shade less lighting as used in general lighting by cold or warm lights. The second is more economical, but are more varied because of their particular effects. They are warmer and less spread than a fluorescent. Daylight is also good to use through apertures in walls and roofs. Reflecting transparency which enlarges the impression in the size of the space (Franck, 1961).

Color applications in commercial spaces are more frequently changing from a year to a year. It is often subject to fashion, and it brightens commercial spaces. The principles of color choosing and how to use them are fundamental matters to be considered by the designer (Halse, 1978). An important basis in choosing colors in spaces is that they should be suitable to the goods and products. Colors in interior design are the means of transmitting a message of design, from the designer to the user. It is a grave mistake to make colors more prominent than the goods, as that reduces their importance, which is not in the interest of the commercial operation. The relation between colors and their message and the way they are used, is as varied as other communication messages, like music and language (Faulkner, 1972). By using a certain color plan the consumers is indirectly allowed to select his commercial choices pleasantly, for the benefit of the business.

It is the visual effect of a surface under light. What gives man, he feeling of a certain texture of a surface is the interaction between light and shade, and color degrees under the effect of the materials of which the surface is composed, its nature and composition, and its color. Texture is an important source of the aesthetic energy of the surface, and a vital factor in the general composition factors and masses and architectural surface, produced by its tri-dimensional structure, and by which we describe softness or roughness of different surfaces. Texture may be classified into two main categories:

- a. The realistic texture which we can feel by touching.
- b. The visual texture which we can feel by vision, and represents the visual

Impression from the outside appearance of natural or artificial cover of objects and forms that we see (Beddington, 1982).

2.5 Types of Architectural Space: Commercial Interior Space in Detail

– Design Characteristics Emphasizing the Commerce

Commercial spaces are continuously changing according to their function and practiced by activities, and are under the effects of numerous and unlimited factors. For example, the changes in commercial activities are not affected by one factor only, but by a number of factors. It could change by the purchasing power of consumers, or their income, or by development in production of different kinds of goods; or even by the increase in population size (Maitland, 1990). These are commercial centres that function as intermediates between producers and retailers. They do not directly sell to the consumer (Najafi, 1976).

The size of the commercial space, it can be of one level, multi levels, or even a small shop. Ownership, individual, a private sector, but can also be owned by a public sector firm, a joint sector or international company. Design. Commercial building may have a classic style, or a modern one, or others (Najafi, 1976). The situation of the commercial building, it can be in a commercial street, within a covered mall, or within an open mall with a central court. It can also be within spaces for functions, like hotels, airports, bank, office building, commercial, museum, retail store, restaurants or companies building (Rajeh, 1968).

The operation of designing interior spaces for commercial buildings includes combining a number of aspects which take part collectively in realizing a successful performance by their effects on the commercial activities on the one hand, and by providing an effective environment that satisfies human needs on the other, which realizes a successful sales philosophy. The interior design by which it is possible to realize an effective performance is that by which it is possible to combine the psychological and physical properties of the shopper with the properties of the interior space and its effective performance. The interior designer carries this responsibility through his understanding and translating of the requirements. (Abbou, 1982).

A balanced relationship should be founded between the original design concept of the interior space, and what satisfies the needs of man, place, and also between the positive and negative properties of the whole of the relations related to the concept (Noppler, 1992). Color and the brand space are two modern design concepts which can be used to actively realize the needs of the users and the commercial activities. They are original design tools which go together with modern concepts in interior design (Allen & Esker, 1983). All of the design elements of commercial spaces are important and mutually dependant. The mutual relations between these elements depend on how they are combined together. When the interior designer applies the concepts of color patterns and the identity of brand space, he should not only direct his attention only to then aesthetics of form and to what degree it can attract the attention, at the expense of the other elements (Rapoport, 1969).

Spatial symbols can be used as an active incentive within the philosophy of color patterns and the identity of design brand space in a way that makes the commercial space strongly related to the place. This feature may help in providing this internal space with meanings which are closely attached to man and his emotional feelings, besides giving the commercial place a symbolic meaning (Smith, 1997).

Chapter 3

COLOR

This chapter aims at forming a theoretical framework of color, (its properties, theory, and the psychological and physical effects) in addition to studying the concept of positive sensations, which are the psychological and emotional dimensions which are borne into the onlookers towards the interior architectural spaces; where colors are considered the most beautiful elements in human life. Color is the design element that appeals to us, emotionally and psychologically, and is considered the most powerful tool in the hands of the designer who looks for the new that moves with his time and futuristic vision.

Scores of scholars and specialists have put so much effort into investigating the concept of color, from all its aspects, trying to interpret its effects under the light of its scientific and practical applications. These modern experiments have been directed towards discovering the physical and chemical properties of color, and their psychological, and physical impacts on human-being, whom the designer aims to serve. Therefore, the architectural designer is charged with the duty of acquiring a better knowledge of the potentials of color in and its basic properties in order to put them in the service of humanity. Throughout practical and theoretical investigations it was found out that so

many scientific facts have not been covered deeply enough from the point of view of teaching or application some of which will be the subject matter of this work.

3.1 Historical Background of Color in the Context of Architectural Space

Since antiquity, human-being had been always trying to use color by which to record the secrets of his being and ambitions, by decorating the walls of his domicile for various purposes. He discovered these colors, either by chance, or through experimentations. He also used colors to in drawings to satisfy his feelings, looking forward towards future and immortality. He named colors by names of animals which are naturally colored. By that we can imagine how the designer worked through these methods of color expressions (Kuehni, 2003).

Colors may be considered as a kind of music, whose symbols have many meanings. The more our experience in applications on colors, the more high our artful taste becomes, to go along human taste. This is not an easy work. It requires delicate musical sense, while still in need of being able to express a clear objective vision. Many artists and color specialists believed that color selection depends on practical experience in color treatment, or on their past experience. But, through scientific development, especially in the matter of light and color, and their ability to present different color compositions which result in bringing out different effects, all of that have changed the way of dealing with colors, giving it wider dimensions (Abbou, 1982).

The Italian scholar and artist, Leonardo Da Vinci, had ante dated by many centuries many psychologists by realizing the basic properties of green, yellow, red, and blue colors and that by means of these colors we can arrive at the other colors. He also discussed in his book “Treatise on Paintings” the harmony between contrasting colors; and arrived at the fact that by when putting yellow next to blue, and red next to green, both colors will look brighter, creating a more aesthetic composition than putting similar colors side by side.

For many centuries, this book remained the basic theoretical source, until the British scholar Isaac Newton the first light spectrum analysis later in the seventeen century. He drew the plan of full circle of light spectrum, starting with red, then orange, yellow, green, blue, indigo and violet; to return again to red. This is considered the first attempt to organize an image of the realm of light (Edwards, 2004).

The German astronomer Johann Tobias Mayer created the color triangle, while the physicist J. H. Lambert created the color pyramid. After that, the German poet Johann Wolfgang Von Gothe came out with the relation between colors and distance phenomenon. The English Physician Thomas Young came forth with the hypothesis of the three receptors of light to explain the ability of the eye to see colors. In 1866 the scholar Helmholtz discovered the three basic dimensions of color, tint, value, and chroma (Ching & Binggeli, 2004).

3.2 The Physiological Aspects about Color

Color possesses physiological effects that bind physical effects with biological effects. The incitement of a certain color is accompanied by a kind of response in human-being, as a muscular tension and in brain waves. And other functions of the nervous system. It certainly excites particular feelings and certain responses (Porter, 1997). Exciting eye membranes by a brilliant light and a warm color leads to a number of physiological phenomena, and inadvertently, producing more muscular tension, and creates a suitable environment for attraction towards the source of excitement. There will also be an excitement of the body and raising his rate of breathing and heart beats. Eye nerves activity will also increase, and full alertness in the brain cells specialised in receiving information from eye nerves, which can be electronically gauged. And there are effects which are difficult to measure (Saleh, 1982).

Other colors, like yellow, have a stimulating effect on the onlooker, and green has a pacifying effect. All of these cases express physiological effects of the colors. The feeling of heat which comes from looking at a red color is basically a psychological effect, but produces physiological results. Red, yellow, and orange are a color of large wavelengths that makes the body seems heavier and larger in size. Yet, there are a number of theories which interpret the phenomenon of seeing the color from the physiologist's perspective (Vodvarka & Malnar, 1991).

1. Hering Theorem

It is known as the theory of color contrast. It presumes three pairs of color receptive, each containing two opposite colors (red and green), (yellow and blue), (white and black). It is not possible to perceive the ends of each two at the same time. Like reddish green and bluish yellow. When the two ends of one pair are equal in prompting, one of them cancels the other. The outcome that we see will be gray. D. Jameson and L. M. Hurvich proposed a new version of Hering theorem, offering in it a quantitative and mathematical interpretation for most of the factors related to seeing the colors, like mixing colors, color blindness, and color phenomenon (Porter & Mikellides, 2009).

2. Franklin Theorem

This theorem suggested that the primitive eye is composed of neurons that receive the gray world only. Later on it developed and was divided into color sensitive bundles (blue and yellow). Then the yellow sensitive bundles were further divided into receptors of red and green colors. This theorem has relation with color blindness, in which one or more of the receptors are either partially or totally weak (Porter & Mikellides, 2009).

There are some theories about color mixing. One of them states that mixing colors is a phenomenon related to the retina of the eye. A scholar directed a certain color towards one of the eyes, and another color towards the other eye, without mixing the two colors outside the retina. He found out that the visualized color is exactly like what happens when colors are mixed and simultaneously directed towards the retinas of the two eyes. This proves that there is some perception operation and color mixing taking place behind the retina (Saleh, 1982).

3.3 Color Theory

3.3.1 Human Vision

The eye is the tool for feeling sight. Sensing colors is affected by a number of physical phenomena which can give comfortable effects that balances psychological visual of human-being. Some of these phenomena which have an effect on seeing color will be discussed:

1. Purkinji Phenomenon

Named after the scholar who discovered it, it is the change that occurs on the maximum degree of brightness in the visual spectrum of color, beginning with yellow towards green. Long wave colors like red lose their brilliance when the light directed on them, more than what they lose when short wave colors are directed on them. This is because the retina loses its sensitivity, first to red color (Saleh, 1982). The more we gradually reduce lighting on the rest of the colors; the eye finally loses its sensitivity to the two colors green and blue. Under bright lighting red color looks more pale than blue color, while blue looks more brilliant under dim light.

2. After Image Phenomena and the Successive Contrast

This phenomenon is defined as a continuation of the perceived image in the memory after the external stimulus is gone (Saleh, 1982). If the eye gets accustomed to a certain color after looking at it for some time, then shifting the look towards a white or gray surface, and looks at it intently, the complementary color shall appear on that surface. White color will look light green when staring at a stimulating element of red color. This phenomenon is also described as result of visual exhaustion. When the retina is familiar

with a certain color, like red, which possesses red color sensors, it will suffer temporary exhaustion. When red color is replaced by white color, the response of these sensors will be less in sensing the whole of the rays reflected from the white surface. At the same time it will sense green color, and works in full capacity. The important thing to notice is that this effect is not permanent, but the color spot looks floating in front of the eye, which will be disturbed by that thing, which comes from staring at matters of the same color (Mahnke & Mahnke, 1993).

The distant phenomenon and the concept of color integration are considered a physiological phenomenon used to show the importance of color integration in color design work, where integrating colors are mostly put side by side to make their effect comfortable for the spectator (Mahnke & Mahnke, 1993). The idea of integration in colors is based on the way they are organized in the color wheel, where colors are distributed on the circle diameter, and each two reciprocating colors integrating if mixing them produce a neutral gray color. There are many examples of that. In the past the operation rooms in hospitals used to be painted white; and so where the clothes of doctors and patients. The distance phenomenon used to confuse the vision by staring on the red color of blood, then turning to the surrounding white color, so that green color looks disturbing to the spectator, as a distance image of the red color of blood (Mahnke & Mahnke, 1993).

It was possible to get rid of this phenomenon by painting the walls of the operation theatres in green, or bluish green, and the same for staff clothing. That reduces the negative effects of the distance phenomenon. At the same time, for the eye needs to do

its function well, every color should have its complementary color; if not it will produce it. It is contrast that produces integrating colors to create the required physic-visual balance. Balance between warm and cold colors unconsciously creates a psychological balance in the person (Mahnke & Mahnke, 1993).

3. The Phenomenon of Vibration

This is an outcome of the effort exerted by the eye as a result of convex or concave actions of the lens in order to focus the passing image on the retina, or behind it in the case of long wave length rays (like red rays), or in front of it in the case of short wave length rays of blue color (Berlin & Kay, 1991). The yellow and green rays fall directly on the retina. That is why we notice that tallow and green colors are comfortable to the eye. For that, many scholars consider that aesthetics begin with physiology, when the natural human eye receives a band of beams from the outside space falling on the retina, the red behind it, and the blue in front of it. This different focal concentration cold is the reason behind the difficulty in seeing blue color on surfaces close to red color. He has to habituate or eyes to see any color in a way that is completely opposite the other way (Berlin & Kay, 1991).

3.3.2 The Interaction of Color and Light

The great development and variation in human activities have increased the importance of the lighting, to enhance the functional and aesthetic performance of interior and external spaces; that lighting has become a priority in interior design. Lighting is important in achieving higher production, and providing safe and healthy living environment (Ball, 2001). Light is also considered the most important factor in defining space and presenting form, as there is no visual perception of space without it. In spite of

using other senses in perception visual perception remains dominant. Proper and well distributed illumination gives comfort to the eyes, and provides more efficient production, which enables the designer to make a building more suitable for different functions. Lighting has become an important element in art and interior design which interacts with interior lighting to create a romantic and comfortable atmosphere to spaces (Flynn, 1992). The style of lighting has an effect on interior architectural space, especially by means of the following properties: color, brightness, intensity, and contrast.

The different kinds of illumination play a major role in the theory of light, when the criteria of classification vary, including natural light, and Illumination. Natural illumination is most important in psychologically accepting space, feeling color and form, because natural illumination is used for purposes other than housing. Housing buildings do not require a big amount of natural illumination because they have functions which do not require a high degree of accuracy (Eakin & Kurtich, 1995). Natural illumination is of two types; roof illumination and side illumination, each has its own specifications required by the kind of activity inside the building. It is noticed that modern design methods have turned towards this kind of illumination, especially in public buildings, and for design purposes.

1.The Artificial Light Produced from Different Levels of Brightness

- a. High brightness it is a result of being exposed to one open source, or more of Incandescent Light, or Fluorescent Tube, or both.

- b. Low brightness this is realized from light sources concealed from the line of sight (Flynn, 1992).
- c. Glitter brightness this is a product of using open and exposed single point sources of a low brightness, with direct or indirect lighting, with switches that control the intensity of lighting. It is an active means to connecting different levels of lighting, and creating heir different effects.

2. The Main Functions of Lighting Comprise Many kinds

- a. General lighting this is to light interior spaces by a diffused harmonious way covering the whole of the space. It could be direct, or indirect, aiming to create an atmosphere of comfortable vision, reducing contrast between light efforts and surfaces surrounding the space, where a harmonious level of lighting is provided for the interior space. It is used to provide soft shades, and a wider appearance to the space (Eakin & Kurtich, 1995).
- b. Task lighting it is lighting certain areas of the space to help in lighting certain functions: kitchens, libraries, and bathrooms. The aim is to light relatively small areas and enhance the performance of visual effort, and relying on small and special lighting. Although area lighting illuminates a certain place, it provides a variety in space, and a change in defining certain parts of space. This kind of lighting is outside our research work.
- c. Accent lighting it includes various kinds of spot lighting. It provides interest and attraction in space, aiming at creating spots of attraction and patterns of light and darkness within the interior space. This kind of lighting reduces the sense of boredom, and accentuates the features of interior space and the works of art inside it (Ching, 1987).

3. There are Many Kinds of Lighting Used in Interior Spaces

a. Direct lighting this is used to concentrate on space. It has strong shades, as all the light energy is directed downwards. It could be from the roof, or from the walls, creating a great degree of difference in shade, and causes a delusion in seeing the dark region of the space. This lighting is known to have good diffusion of light inside the space.

b. Semi-Direct lighting this is by directing a small amount of lighting towards the opposite side of the light flood. This lighting tends to darken the shades which are a result of direct lighting. Walls and furniture colors have a strong effect on lighting by reflecting light off them. This lighting is suitable for living quarters, corridors, and factories (Ball, 2001).

c. Semi-Indirect lighting a great amount of lighting is directed in a direction opposite to the flood of light, while a portion of it is allowed to pass towards the facing surfaces. That is why it forms a lighting reflected from the roof able to soften shades, and improving the ratio of light brightness, to realize a slight amount of contrast with more comfort to the vision. This kind is not suitable to use when the roofs are too high, and its color dim.

d. Indirect lighting is directed at all the area of one of the surfaces, like a roof, creating a false feeling of its height. The lights reflected from it can also complete the feeling of the interior space, but it can be boring.

e. Diffused lighting this system allows for an equal amount of light flood in all directions. It is ineffective because light flood have equal distance from space surfaces.

f. Direct-Indirect lighting this system allows for an equal flood of light to the roof and the floor, and little to vertical surfaces (Ching, 1987).

Light is the essential element for sight. Without it we would not be able to see things and their colors. It is the means of conveying information to the eyes, which captures it, and transmits it to the brain, which analyses it and perceives it. Visual rays are what can be seen by the eye. The visual part of the sunlight looks white to the eye, but can be analyzed into a number of colors by the glass prism. They are: red, orange, yellow, green, blue, indigo, and violet. This spectrum of rays falls between (400 - 700 mm) In spite of the fact that there are seven million different colors that can be seen, but the ability to see them is subject to the how much can the eye respond to the light waves limited between (700 – 400 mm) Outside this range the human eye cannot get the light waves; or perhaps he waves cannot excite the eye. Therefore, red color has the wave band of (760-630 mm) (Saleh, 1982). The shortest wavelength is that of violet color (450-380 mm). There are basic means of producing color physically, and the eye can receive this information, and transmits it to the brain, which are by: diffraction, dispersion, interference, absorption, and reflection (Ching & Binggeli, 2004).

The last of these methods is considered the most common in producing many colors when light falls on a certain object, some of the light waves is absorbed by the molecules of the body surface, while other waves are reflected, part or whole of them, from the surface. These waves are captured by the eye, and transmitted to th4 brain as information about color (Ladau & et al, 1989). The behaviour of light on the surface of a matter of certain tints, which are fine tint particles that exist within a layer of a matter of

no color and transparent, these colored particles is rather semi-transparent, allowing light to pass through, but functions as a color filter separate from the rest of the particles.

When light enters through matter it is polarized and prevented from passing through as a result of the collision with the colored particles which absorbs part of the color rays falling on it and reflects the other part. The result will be a beam of rays reflected towards the eye of the onlooker, which senses it and perceives it as an impression of sole color (Fisher & Zelanski, 2003). Light passes the properties of the tint matter, its characteristics, and the properties of surface of that matter (Berlin & Kay, 1991). We shall deal with three processes: reflection, refraction, and absorption.

1. Reflection

Every ray beam that falls on matter is reflected if the matter is not transparent, or a chemical substance of a particular sensitivity. In reflection the body with a red surface reflects the frequencies and the waves of the red color, and the red color is reflected to the eye. The other colors, meanwhile, are kept by the matter, and not reflected, not to be seen. This process is called reflection.

2. Refraction

When a light ray falls on a transparent surface, or passes through a glass of water, its gets refracted, taking an angle different from the angle of its original line. If we put a pencil in a water container filled halfway through we find the pen looks refracted at the point it touches the surface of the water. The part of the pen in the water looks at an angle different from its angle outside the water.

3. Absorption

Much of the cosmic rays are subject to be absorbed, and refracted. The light rays emitted from the stars into space get diverted towards the sun, and some is absorbed by space itself. It is just like what happens when light falls on a colored object; the more its color is dim, the more it absorbs the light falling on it (Abbou, 1982). Part of the light quantity falling on an object is absorbed by the matter, while the rest is reflected or allowed to pass through if the matter is transparent. This phenomenon explains much of how things look, and the color of their surfaces, and is called selective absorption of rays (Fisher, 2003). The French scholar Chevreueal explained in 1938 some of the properties of this subject, saying: “The red and color objects are not supposed to reflect only red and yellow rays, besides white color, as these objects reflect all kinds of rays that make us realize and evaluate the color as yellow or red as red and yellow rays have the dominant effect, more than other rays” (Fisher & Zelanski, 2003). From the scientific point of view, the reflected or absorbed light of a colored or absorbed tint in daylight cannot be pure.

White color can be obtained by mixing three main colors: red, green, and blue. The surface of a yellow flower under sun light absorbs the violet component of white color, at the same time the components of orange red, and that of green, which are of collective mixings of light give a yellow appearance (Fisher & Zelanski, 2003). Physicists distinguish between reflected light and reflected color. Reflected light is defined as the light which is not totally or partially absorbed by the surface on which it falls, and is reflected towards the onlooker, and is without color. When light falls on a smooth surface most of it is reflected. And when it falls on a rough surface it is reflected into

different directions because of the different levels on that surface. Reflected color is defined by the way our eyes perceive what is reflected by an object, or the portion of the color not totally absorbed by the surface. A black object absorbs all the light falling on it, while a white object reflects most of it. An object looks transparent when it allows most of the light to pass through without any absorption or reflection (Al-Kaze, 2000).

The physicists refer to two methods of mixing colors, as follows:

1. Mixing Colored Lights

This is a mixing of light rays by adding new light waves to them. The outcome of the mixture depends on the amount of added basic lighting, and its distinctive properties. When mixing two basic colors in specific ratio the outcome will be a colored light by a third complementary color. Like when mixing color light with green light we have yellow light complementary to blue light. When mixing two lights of complementary colors white light is produced. The complementary colors are: (red complements blue and green) (crimson red complements green) (Faulkner, 1972).

Regarding light chroma, when the mixed lights are harmonious the produced chroma will be high. When the lights are not harmonious the outcome chroma will be low. Color interpretation depends on relative chroma of the spectrum distribution of the rays forming the ray that falls on that object. This is a very important matter in interpreting the changes in the colors of the elements and units inside interior spaces, especially in living rooms, which are as different as the lighting inside the space (Ball, 2011). The matter of color interpretation is also very important in evaluating the performance and the choice of light sources that suit interior spaces lighting.

2. Mixing Colored Paints

It depends on mixing colored paints, when new and different results are made, different from the mixed paints. It is an operation of handling light waves. When mixing a yellow tint with a blue tint a green tint is produced. It means that by mixing basic colors, intermediate colors are produced (Saleh, 1982), when the result of mixing any two basic colors a color complementary to the third basic color (Al-Kaze, 2000).

There are two rules in mixing tints. The first is that mixing symmetrical colors in the color wheel produces very harmonious and close tints. The second rule concerns complementary tints when mixing them produces neutral colors (Ching & Binggeli 2004). Mixing basic tints produces a wide range of tints, more than in secondary or tertiary tints, which means that the number of the produced tints is larger than when mixing similar tints, although there will be more losses in the cost. There are four possibilities in mixing tints to regulate the value, which are: raising the value by adding white, reducing the value by adding black. Adding gray neutralizes the value. Finally by raising or reducing the value when adding a tint of a different value (Al-Kaze, 2000). A color may also be changed by four methods: three of them by adding one of the neutral colors (black, white, or gray). The fourth one is by adding the complementary tint. A color can be intensified by adding more of the current tint, and the properties of the color are nested with each, that it becomes difficult to play with one of the color properties without at the same time changing the two properties (Ching & Binggeli, 2004).

3.3.3 Properties of Color

Color is the quality of light as reflected on a certain surface. It can be a color of light, of a sunlight spectrum, or an artificial electric light, or a result of reflection, absorption, or refraction. It is a light wave with the following properties:

1. Visual Properties

They are the color properties described by Helmholtz, as follows:

a. Hue

It's the property by which we can differentiate between colors, saying: this is red, or blue, etc. (Talbi, 1999). Light coming from a color source has a clear indication to show an object to be green or red; meaning a clear color tint about which more than one person agree upon when looking at the color (Lauer & Pentak, 2011).

Using names for colors, (hues), requires a scale by which human-being can prepare them easily. It was done by using special color wheels which solved this problem (Danger, 1987). Colors are recognized by their wavelengths. The primary colors are recognized by their light spectrum. (Red, orange, yellow, green, blue, indigo, and violet). All other colors have some similarity to one or two of the primary colors of the light spectrum. Rose and crimson colors are close to each other, within the original hue, despite being two different colors. The original hue is physically determined by means of wavelength (Muller & Lloyd, 2004) (Figure 3.1). The scholar Munsell has physically classified colors into:

- Chromatic Colors are Sub-Classified into
 - *Primary colors: the basic colors of the light spectrum which are: yellow, red, and blue of which other colors are derived.
 - * Secondary colors: which are the colors composed of two of the primary colors, like: orange, green, and violet (Figure 3.2).
- Achromatic colors they are the colors composed of black and white, or by a mixture of three basic colors in different proportions, or by two colors (Shirzad, 1997). They can be in two forms: light white colors, or dark colors, close to black. There could be different grades between black and white, representing shades falling on white surfaces bodies, or they could be shades when mixed with artificial colors, called light colors or dark colors, termed as Monochromic colors (Shirzad, 1997) (Figure 3.3).

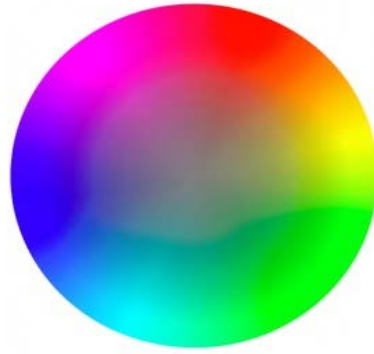


Figure 3.1: Hue Color (URL1)

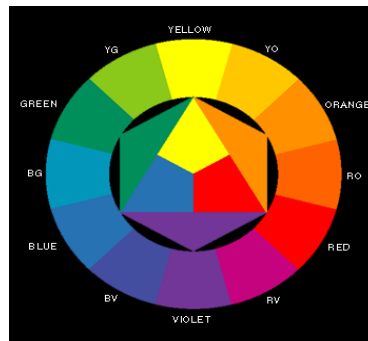


Figure 3.2: Chromatic Colors (URL 2)

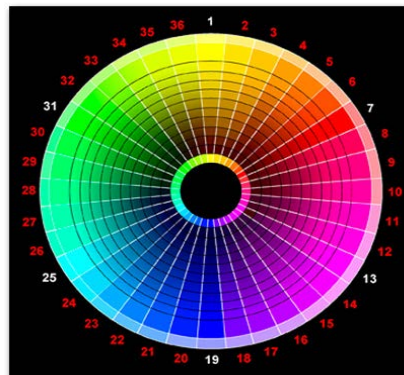


Figure 3.3: Achromatic Colors (URL 3)

b. Value

It is his third dimension of color. It is the quality by which dark tone is distinguished from light tone (Abbou, 1982). It is the value of color saturation by bright light, or shade, or a value between a pure color and another pure color next to it in Oswald Circle. This value also refers to brightness and darkness regarding the two colors, black and white, whereby it is possible to differentiate between light blue and dark blue (Youssef, 2000). The more color is dark, the more the reflected beam from it is reduced in value. This value also has the effect of determining the distance value between the colored object and the source of illumination. The degree of brightness gets gradually reduced when the distance is increased, because of the reduction in light energy that falls on it (Ching & Binggeli, 2004) (Figure 3.4).

The color value can be classified according to its relation with black and white colors, into:

- Tint this to classify a color formed by adding to its white color, to make it lighter or higher in value from its original value (Youssef, 2000).
- Shade it is adding black to the color, making it darker, or with a lower value than what it was before (Holtzchue, 2001).
- Tone it is by adding gray color (black + white), or by adding a direct complementary color to the circle of the basic colors (Al-Neaimy, 2006) (Figure 3.5).

c. Chroma

This is the description of the degree of purity, and the power of color. We can distinguish between two colors of the same hue, one is darker, or lighter than the other, but are different in Chroma, or the power of color that represents the degree of saturation of the color. Saturation is the outcome of power and weakness of the color. In other words it's like looking at two colors of the same family, next to each other, but are mixed with a neutral color, like black or white. WE can mostly identify a certain color to be dark or light by the density of the color, and its value over the background (Abbou, 1982).

Color Chroma means the degree of power or purity of the color. It is graded from 1 to 8, starting from the axis of light value of neutral gray outwards (Talon, 2002). It can be concluded that the three properties of color are inter-dependant, and depends on sighting circumstances, plus many other factors; and that these values are among the indicators which have an effect on sense and visual perception (Lauer & Pentak, 2011) (Figure 3.6 & 3.7).



Figure 3.4: Value of Color (URL 4)

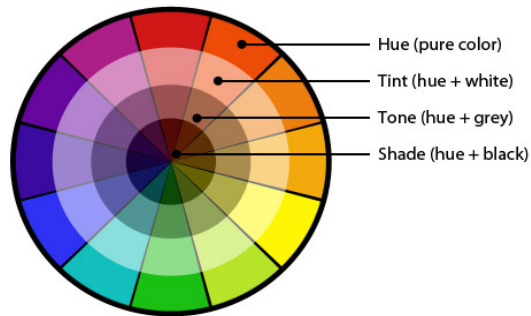


Figure 3.5: Value of Color (Hue, Tint, Tone, Shade) (URL 5)

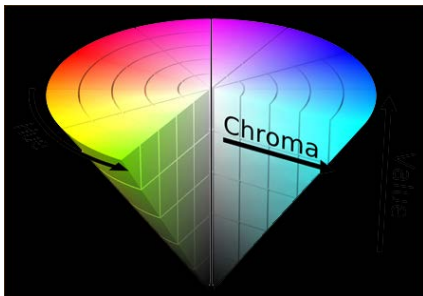


Figure 3.6: Chroma (URL 6)

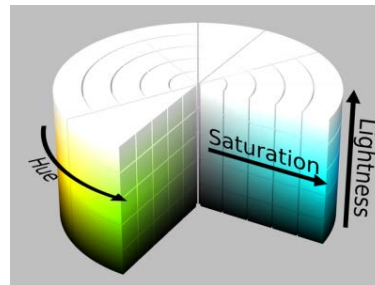


Figure 3.7: Chroma (URL 7)

2.Natural Sciences

The properties of color are decided according to natural sciences, by means of the following references:

a. Wave Length

Isaac Newton discovered that all the colors are found in light spectrum of sunlight. When a beam of sunlight passes through a glass prism it gets analysed into a group of seven colors, beginning with violet and ending in red, according to their wave lengths. As a result of light refraction through glass prisms the light rays appear in their basic colors. The distinction between the seven colors depends on their wave length, every color with its own wave length, the violet with the longest wave, and the red with the shortest (Edwards, 2004) (Figure 3.8).

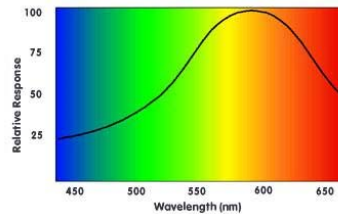


Figure 3.8: Wavelength of Color (URL 8)

b.The Factor of Color Purity:

This is the ratio between the color and the amount of white color it contains (Shawki, 1999).

c.The Factor of Light

This means the amount of light reflected by the color. Newton proved that light is the source of color, when he established that white light can be analyzed into its basic colors, and that these colors can be put together to compose the white color. Whenever there is light, there are colors. Accordingly, the nature of light has an effect on the nature of colors (Edwards, 2004).

3.3.4 Color Organization and its Systems

For a long time, the question of arranging the colors had preoccupied many scholars and artists, many ways of ordering colors were examined. Much help was available to research works in colors, or in the science of optics within the field of architecture. That made it easier to the logical use of colors in practical application. Newton was able to form the first order of colors, by means of refracting light beams through a glass prism, producing the colors of light spectrum, which he ordered along a straight line: red, orange, yellow, green, blue, indigo, and violet. It is known that this order is very much used in practical life applications, later on to be ordered in the light wheel (Shawki, 1999) (Figure 3.9).

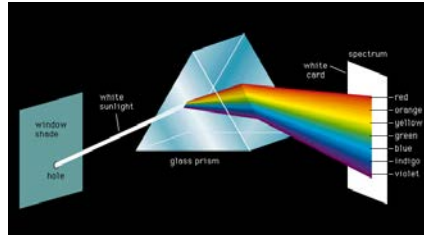


Figure 3.9: Dispersion of Light Beam (URL 9)

The design of the first homorganic order is attributed to Lacou'ure. He built his research works by setting a system of symbols by letters and digits. The first list of colors contained groups of three colors each carries an alphabetical letter and numbers for the color mixtures. That was followed by attempts to use shapes: circles and, triangles. One of these attempts was that of Young, who put the basic colors on top of an equilateral triangle (Al-Niamey, 2006). The scholar Castel Le Pere is considered the first to create the circular color wheel. The research works of the two scholars Albert Munsell and William Oswald are the best proof of that effort. Each of those two researchers went to establish a system of color organization, which, until now, is adopted in many countries of the world. I find it useful to look into the method of color organization each of the two arrived at, in order to better understanding of the color relationship, their organization, and how they should be recorded (Hamouda, 1981).

1. Munsell Color System

This is a basic system used as a measure to determine the properties of colors. Munsell asserts that as a box has three dimensions, so does color, which also has three dimensions: Chroma, Value, and Hue. These three attributes must be adequate to specify the quality of color. This system is composed of a color circle horizontally set, on which

the colors and their subtypes are arranged. This horizontal color circle shows 20 equal divisions of colors, to be read clockwise. There are five principle hues: red, yellow, green, blue, and violet.

Halfway between these principle hues, there are five intermediate hues: reddish yellow, greenish yellow, bluish green, violettishblue, and reddish violet. After that a color is subdivided into ten triple divisions, making a total of eighty divisions. Each color in this system is referred to by the first letter of its name, R for red, Y for yellow, R45Y for orange, and so on. The colors which are within the ten triple divisions are referred to by numbers, from 1 to 9, like: R2, R45y3, and so on. This way it is possible to refer to the first attributes of Hue (Figure 3.10). Triple division is required to show the harmony between adjacent colors and contrasting colors. By means of that the colors which are close to each other in the color circle are more harmonious than those far from each other. The more colors are distant, the more they are in contrast; up to the point that makes them in full contrast by the two sides of color circle, like: red and bluish green, which fall on the two sides of the color circle, and represent the maximum amount of color contrast (Graves, 1951).

The light value of a color determines its brightness, and can be decided from the central axis, which can be taken as a numeral scale containing ten equal vision distances, or Neutrals, ranging from black to white, referred to by the numbers (9-0). Each space can be divided into ten divisions, numbered: 11, 12, 13, etc. Regarding its luminosity its position on this scale is to be decided according to its position on this gray scale, referred to by a number over a slash, like: (NO/, N3/, N2/). Each pure gray color to be

given the symbol (N), the symbol (NO) represents the absolute black color, which is a hypothetical color, because there is no color that does not reflect any amount of light.

The symbol (N10/) refers to white color, which is also a hypothetical color, as there is no color which reflects all the light falling on it, knowing that normal white color has the light value of 9 (Gatz, 1961). This way it is possible to determine the luminosity of the gray color according to value scale by writing the original tint, or its symbol, followed by a number that decides their place within the light value (gray scale), to represent the light value. For example: light red tint is referred to by the symbol (R3), It will be seen that the colors look more in harmony when their light values are similar, or close to each other. On the other hand, colors will look more in contrast when their light values are far from each other, like: (value3), and (value8) (Figure 11).

Regarding the third dimension of color, (intensity, or color density), it is determined according to the variable scale of color, between Neutral Gray and the maximum amount of color. It is a vertical axis over the (gray scale), and parallel to the color circle, which radiates from the centre of the circle for each tint. This specific number of divisions is referred to by the numerals (1, 2, 3,). The intensity of color is also referred to by a certain symbol put under the light value of that color. For example: if a green tint with a light value of (5) it will be written as follows: (G5/1). It is also possible that the tint of a low light value to have more Chroma, like in the most pure tint (bluish violet). This has a low light value. We also find the highest value of Chroma in (value3) and its value stronger than (value8) (Graves, 1951).

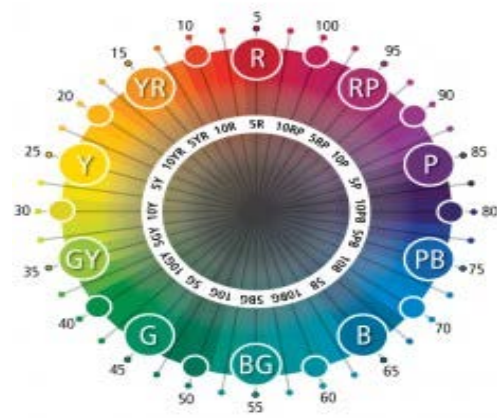


Figure 3.10: Munsell Color System (URL 10)

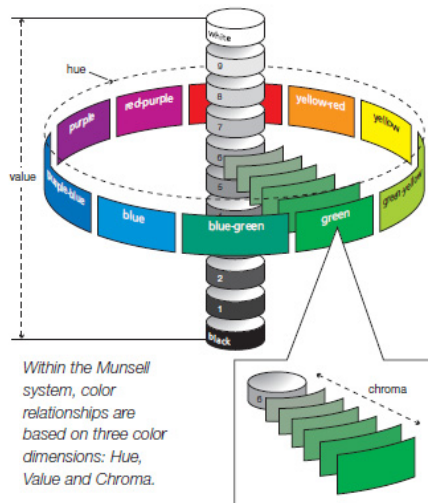


Figure 3.11: Munsell Color System (URL 11)

2. Oswald Color System

He is one of the pioneers in trying to arrange colors by using three dimensional methods, when all previous methods followed two dimensional scales, on flat surfaces. Oswald arranged his colors on an equilateral triangle, the pure color on one of its angles, the white color on another and black color on the third. Modified Tones of every kind are put on the three sides of the triangle. That means that the visual sense is a result of an integrated unit of these three kinds. Adding white color, for example, cannot be done without reducing the content of the pure color; and each color can be seen as an outcome of three things: (the pure color, a content of the black color, and a content of the white color).

Oswald believes that by the order of 24 tints on the color wheel the complementary tints are opposite each other. He also explains that the world of today is composed of seven forms, three of which are primary. These forms are mixed with each other to form the secondary forms. Pure color is mixed with white to produce whitish colors, and when pure color is mixed with black shade is produced. White color put with black color makes a tone of grayish colors. Each color in the order has its own number, which stands for its three dimensions (17ia). The number (17) is the number of the tint; the number (i) refers to the white content; while the number (a) refers to the black content (Geoffrey & Mrichard, 1980). On the whole, any color in Oswald's order should belong to one of the following color series:

- a. Shadow series it is series vertical and parallel to the grayscale. It starts at the top with a pure color mixed with white color, and goes down in a graded way. A series like this

is seen in nature, especially in three dimensional objects, in which the colors of this series are distributed around the parts of the object not in a homogenous way; like a body of an orange, when light is projected on it from one side, leading to a vertical series of colors distributed around the body of the orange.

- b. The equal white series in this series the colors in each line parallel to the lower side of the triangle contain the same amount of white color, which is found in the gray scale, by which this line ends.
- c. The equal black series this is a group of colors in a line parallel to the upper side of the triangle, and contains the same amount of black color contained in the gray color at the end of the series (Ostwald, 1969) (Figure 3.12).

On the other hand, it is clear that Ostwald had adopted the physiological and psychological points of view by accepting Heiring's concept of classifying the colors red, yellow, blue, and green as the basic colors; despite the fact that green can be produced by mixing yellow with blue, as tints. But green color can be sensed as neither yellowish, nor bluish; unlike orange color, which gives the sense of containing the colors yellow and red (Ostwald, 1969).

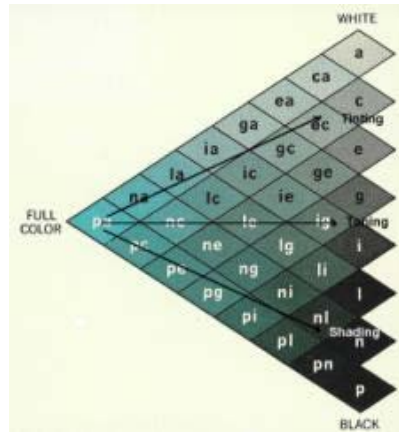


Figure 3.12: Ostwald Color System (URL 12)

3. Swedish Natural Color System

This system is given the symbol (NCS) > It is described as natural, because it adopts the classification method devised by Oswald Hering, which depends on the psycho-physical basis of colors, and on the impressions generated by its six colors, which are: red, yellow, Bluish Green, blue, white, and black. The classification of colors in this system depends on the following properties: hue, pure color content, and black color content. In this system, the color wheel is divided into four main parts: red, yellow, bluish green, and blue, with nine intermediate colors between each two major colors. Assigning symbols for colors begins with the four main colors, adding to them whiteness and blackness. This system comprises 1300 color, of four hues, and five degrees for the gray scale (achromatic) which includes: reddish gray, bluish gray, greenish gray, and yellowish gray (Mahnke & Mahnke, 1993), (Figure 3.13 & 3.14).

4. DIN Color Chart

Colors in DIN system are classified according to the following properties: relative lighting, saturation, and hue. Relative light value is defined as the ratio between the light value of the color perceived by the onlooker, and its highest value with color stability and saturation. The color wheel is divided into 24 colors, with four basic colors: red, yellow, green, and blue. This system comprises six hundred, or nine hundred color, derived from twenty our colors and achromatic scale (Mahnke & Mahnke, 1993) (Figure 3.15).

5. Paint Color System

The architect deals with more than one system of colors for using them in exteriors and in interiors. All the companies that produce paints have their own systems, covering formulae and known color combinations of paints. In many cases they write the paint properties according to hue. In other systems, the criterion is saturation, light value, yet without giving symbols to light value, or to saturation. They depend on visual evaluation (Mahnke & Mahnke, 1993).

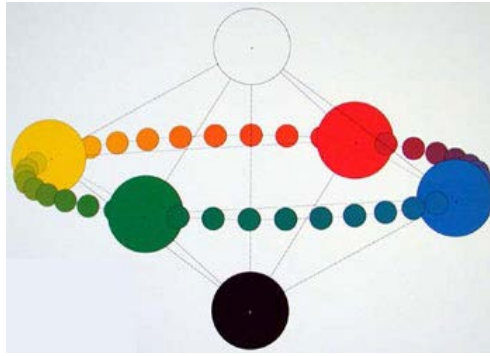


Figure 3.13: Swedish Natural Color System (URL 14)

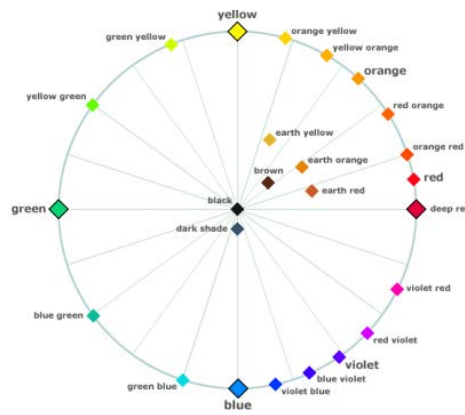


Figure 3.14: Swedish Natural Color System (URL 15)



Figure 3.15: DIN Color Chart (URL 16)

3.3.5 Color Harmonization Relations : Color Schemes

For a long time colors remained without any attempt to subject them to measuring. This is due to the fact that the sensory aspect was stronger than the objective aspect in this matter. But the discoveries of scholars and those involved in this field enabled them to arrive at an object fact; that the harmonic color system is one of life's natural phenomena, which can be realized in laboratories. It is of many forms:

3.3.5.1 Achromatic Harmony

It consists of white and black, with grades of gray color, which shows the components of gray scale (Figure 3.16).

3.3.5.2 Mono Chromatic Harmony

It is the relation between the colors of any triangle of the triangles of Ostwald, which depends on one color those changes either in chroma, or in light value. The repetition of using such harmonies creates boredom (Figure 3.17 & 3.18).

3.3.5.3 Analogous Harmony

These harmonies are more varied than their predecessors. But they do not solve the problem of distance phenomenon, because it is composed of adjacent colors of no more than three colors of one color circle. They are unified because of having a common color amongst them, like: red, yellowish red, and yellow (Figure 3.19).

3.3.5.4 Integrated Harmonies

They offer the maximum amount of contrast within the same color circle. At the same time, they present a balance between hot and cold colors in the environment. They are composed of reciprocal colors within the color wheel, as their total value completes the

basic color system (red, yellow, and blue). In order to ensure the success of these harmonies within the interior of commercial spaces for the purposes of attracting people they need to be used with certain light and chroma values (Berlin, 1991). This way the number of color harmonies varies, according to the type of color wheel used, which determines what color, opposes another on the opposite side, which is the complementary color, as follows:

1. Twin Color Harmony (Complementary)

It is composed by each two complementary colors within the color circle. They form a complete color pattern, like: red, green, yellow, violet, blue, and orange, within any color circle, where colors have the same values of light and chroma, which enables getting this color harmony (Figure 3.20 & 3.21).

2. Analogous Color Harmony (Triadic)

This is a group of adjacent colors in the color circle, where the choice of colors that form this pattern to form an equilateral triangle on the color wheel, like the pattern composed of red, yellow, and blue; or an isosceles triangle composed of the basic color yellow, and the two complementary adjacent colors, like: bluish violet, and reddish violet (Figure 3.22 & 3.23).

3. Fourth Color Harmony

For the composition of this harmony four color are used which form on the color wheel a square or a rectangle; or four colors formed by two reciprocal colors in the color wheel, with the two colors adjacent to one of them (Figure 3.24).

4. Six Color Harmony

In this kind of harmony the positions of the colors form a hexagon. The four harmonious colors can also form with white and black a hexagonal pattern (Figure 3.25).

5. Nature Colors harmony

Nature can provide us with so many examples of harmonic color groups, which can be a source for creating a similar color system (Damlki, 1983).



Figure 3.16: Achromatic Harmony (URL 18)

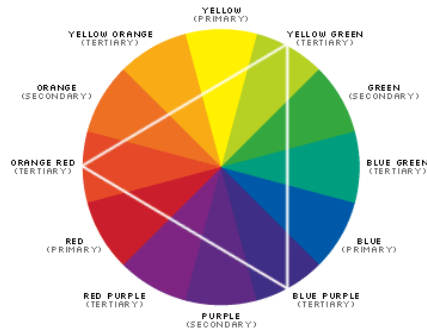


Figure 3.17: Mono Chromatic Harmony (URL 19)



Figure 3.18: Mono Chromatic Harmony in Nature (URL 20)

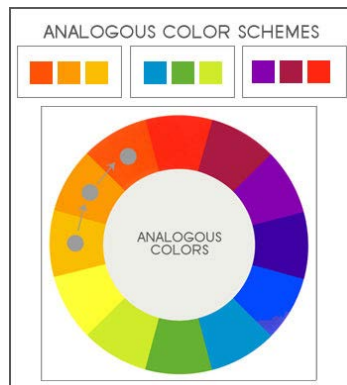


Figure 3.19: Analogous Harmony (URL 21)

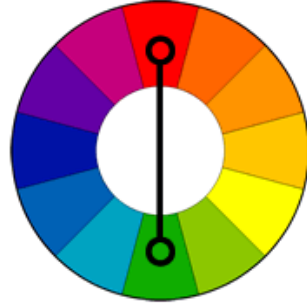


Figure 3.20: Twin Colors Harmony (Complementary) (URL 22)



Figure 3.21: Twin Colors Harmony (Complementary) in Nature (URL 23)



Figure 3.22: Analogous Colors Harmony (Triadic) (URL 24)



Figure 3.23: Analogous Colors Harmony (Triadic) in Nature (URL 25)



Figure 3.24: Fourth Colors Harmony (URL 26)

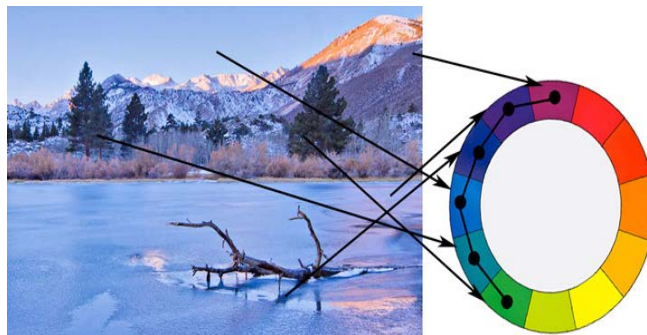


Figure 3.25: Six Colors Harmony (URL 27)

3.3.6 Color Contrast

It is the amount of clarity among colors. This contrast may be in many forms, expressing many relationships. There are many kinds of color contrasts:

3.3.6.1 Contrast of Hue

This is the simplest kind of contrast, which can be visually recognized when using color tints of high chroma, like when using a color group composed of yellow, green, and red, or blue, red, and violet. In these cases contrast can be easily perceived, and can be the most when using a color group of the three main colors: red, yellow, and blue. The degree of contrast becomes less when we are far from the basic colors, which have fixed light values and chroma for each of the components of the color group (Figure 3.26).

3.3.6.2 Simultaneous Contrast

When the eyes look at any color there will be a simultaneous need for a complementary color to create balance. The eyes will create this color if it was not there. This kind of contrast is necessary for visual balance and stability (Figure 3.27).

3.3.6.3 Contrast of Extension

This is related to the relative size of the area occupied by two or more colors. Contrast between the large and the small, or the many and the few, within color formations, the color will look clear where or in what size. But we have to look for the size of the adjacent colors to arrive at the required balance. There are two factors that decide upon the power of purity: brilliance, and the extension but the light value we must to compare between pure colors on a neutral gray background (Figure 3.28).

3.3.6.4 Light-Dark Contrast

This kind of contrast can be acquired by using white color with black color, and grades of gray, with other equivalent colors in light value. With this kind of contrast it is difficult to evaluate light values of coupled colors; each should be taken alone to evaluate light values (Scott, 1968) (Figure 3.29).

3.3.6.5 Complementary Contrast

Physically, to mix two complementary colors produces white color. We can also say that two colors are complementary if mixing them produces a neutral gray color. These two complementary colors verify each other, and give them power and clarity. For every color there is always a unique complementary color in the color circle. The eye needs what the color that gives it balance, and using complementary colors in a balanced way produces a stable effect (Figure 3.30).

3.3.6.6 Cold-Warm Contrast

It is proven by experiments that there is a difference in personal feeling regarding heat or cold in a working environment painted bluish green, and painted reddish orange. Feeling cold in a room of reddish orange color begins later than in a room painted bluish green. The objective reason for such a difference in feeling is that cold colors reduce the action of the blood cycle, while warm colors energize it (Figure 3.31).

3.3.6.7 Contrast of Saturation

It is the contrast between a dim color and a light color; and depends on the degree of saturation in color purity. It is possible to reduce the saturation in a color, or its purity by adding to its white, or black, or gray color. It is also possible to reduce color purity by

adding to it its complementary color. In this contrast it is preferable to use one color in its full purity with the same color with black or white added to it (Itten, 1997) (Figure 3.32).

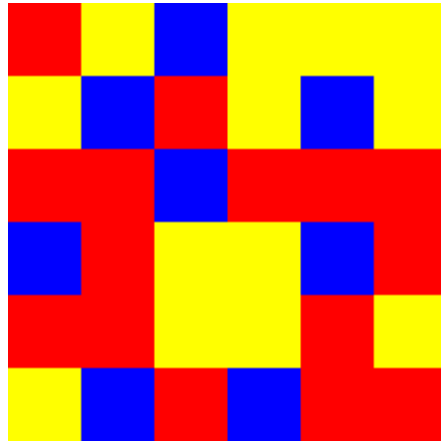


Figure 3.26: Contrast of Hue (URL 28)

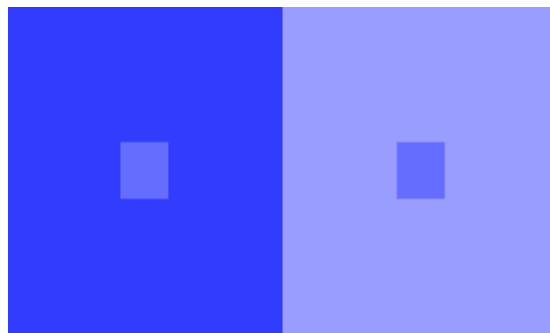


Figure 3.27: Simultaneous Contrast (URL 29)



Figure 3.28: Contrast of Extension (URL 30)

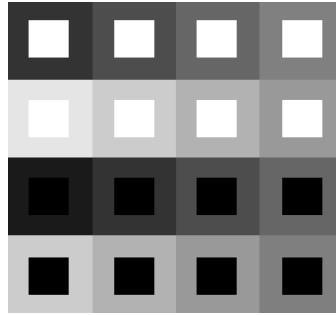


Figure 3.29: Light-Dark Contrast (URL 31)

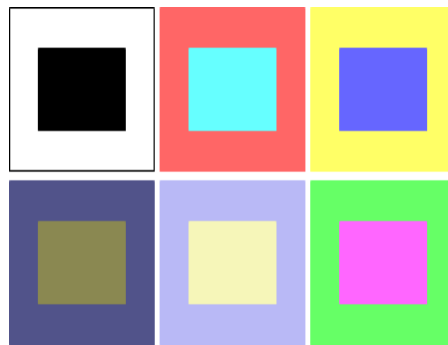


Figure 3.30: Complementary Contrast (URL 32)

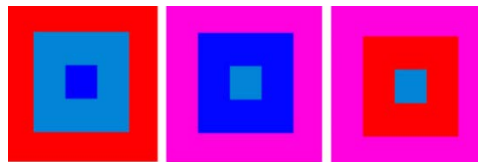


Figure 3.31: Cold-Warm Contrast (URL 33)

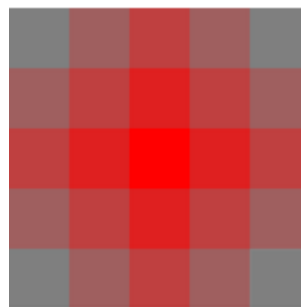


Figure 3.32: Contrast of Saturation (URL 28)

3.3.7 Color and Formative Relationship

3.3.7.1 Color, Mass and Space

Color is one of the formative elements. Together with texture it defines form, mass and space. While it considered one of the properties of mass, it is an important element of space expression. At a later stage of interior design for commercial spaces, the current method was to add color to mass and space. In time, this method proved a failure because of the wide differences in our feelings inside these spaces; which led the designer to try changes in color systems at random, which may ultimately lead to an unsuccessful color order (Gatz & Wallenfang, 1961).

Human-being does not respond to a lifeless space, but to spaces that attract him and excite him, which are produced by color variation in these spaces. These differences in the generated impressions inside color variation give the final impression of the architectural work of these spaces. The function of mass share with its mass the choice of the suitable color systems to bring out the fourth dimension. On the whole, the emphasis in interior design is to try to realize the four surfaces by color, assigning to it the function of identifying each one by giving a different color to each one.

3.3.7.2 Color and Texture

Color and texture are inseparable twins. They are both part of the subjective emotion of the artist, and create an expressive meaning that have an effect on the human feeling of the spectator. Texture represents the external image of the surfaces of the compositions and the different object we look at. Adding texture to the surface as a textural cover will distinguish it from other surfaces of the composition (Beitler & Lockhart, 1969).

Because every natural and artificial matter has its own texture, the property of color will be closely connected to texture. That means that using soft surfaces unlike using rough surfaces which can bear one color degree (Shawki, 2001). There is a physical reason for that, as every matter, natural or artificial, has a color. There is never a phenomenon in nature without a color. According to sources of lighting engineering, the rays that carry the properties of color are transmitted to the eye by means of the following light properties:

- a. Bright light reflections they are the reflections that take place without diffusion, and follow reflection laws.
- b. Diffusion reflections these are reflections in which reflected light is diffused, and has no bright beam controlling the reflection. This is what happens on matt surfaces.
- c. Mixed reflection these are reflection of a mixture of bright and diffused lights (Steffy, 2002).

3.3.7.3 Transparency

This is a property of matter in which part of the light falling on a surface is reflected, and part of it is allowed to pass through the matter. Transparency is of different degrees, according to how much of the light is reflected, and how much passes through (Kaufman & Christensen, 1987).

3.3.8 Color and Form in Interior Architectural Space

Color formation is grouping a number of colors together in a harmonious or a contrasting pattern in the color component that compose that form; which should provide a balance of colors, to be comfortable for the spectators (Ching & Binggeli, 2004). Color formation has a special function, and a certain psychological effect, which

might be unlike the function of the colors that compose it, and their psychological effects (Ikrima, 2001). There are two kinds of relationships that form color composition. Firstly, the relation between the parts with the part, like the relation between the colors red and orange. The other is the relation between the part with the whole, like the relation between green color and a group of hot colors. In these two kinds of relations we can notice the formation of color patterns, either the complicated one or a simple one which helps in defining the general character of space. It may also show the relation between certain parts with the general features of the space. It may also give certain psychological impressions to the spectator, like attractions, pleasure, and the will to stay longer in the space (Abbou, 1999). This is especially the case when color and light form the visual elements which, by working together, form visual formations, to represent the physical elements of interior spaces (walls, roofs, floors), in addition to the complementary elements of these spaces, like furniture (Ikema, 2001).

Deciding upon the tints to be used in the color plan of the formation is to be done by three methods. The first is by the same current tint in the space, with variations in values and chromas. The second is by the same current tint with one of the secondary tints which could be in harmony with the current tint, or in contrast with it. Finally by using a tint which is in contrast to the current tint in the space; or perhaps repeating the tint which is secondary to the current tint of the space, while being similar to the other tints. His method of combining color groups in the interior space to create balance in colors is by repeating color property (hue, value, chroma). The elements of interior space, on which colorful formations are used, can be classified into major elements with large

spaces, and secondary elements of small spaces, or frontal, medial, behind, vertical, or horizontal (Ikrima, 2001).

3.4 Psychological Impacts of Color

The psychological effects of colors are considered the most activating and lively activity (Saleh, 1982). Colors have far reaching effects on the biological activities of human-being, prompting him/ her towards unconscious feelings and reactions. Colors have the ability to reflect the emotional feeling; in fact they are most responsible of that to a great extent (Mahnke & Mahnke, 1993). In this paragraph we will try to focus on the psychological effects of color, like the feelings, emotions, thinking, and perception. It will also explain how colors influence human-being, and the ability to change his mood (Graves, 1951). Color has an effect on the mind, creating feelings that induce comforting and satisfactory thoughts; or disturbing thoughts sometimes. The psychological effects of color are of two kinds: the first are the direct effects that appear on human-being, like merriness, sadness, pleasure, excitement, and happiness. The second are the indirect effects, which vary according to different persons, which are related to emotional factors, objective or subjective impressions induced by the effect of color (Hamouda, 1981). Color can also be psychologically defined as the image of an object, or color, which is totally initiated by perception, like: chroma, tint, and value (Faulkner, 1972).

Psychological investigations deal with the effect of color on human sentiments, his/her feelings, his emotions, and psychological relations (Pile, 2003). People are different in their color preferences; some like warm colors, and some like cool colors. Preferences are controlled by a number of factors, like familiarity with color kinds, or our properties.

Under happy and pleasant experiences the tendency towards a certain color depends on discovering whether that color is liked or disliked, which should precede the conception concerning the color idea (Ladau et al, 1989). On the other hand there are other reasons for a person's feeling towards a certain color; which varies from one person to another who possess normal vision, according to their gender (Davidoff, 1980). Men prefer certain colors, while women prefer other colors. Men go for cold colors, considered as manly colors, and women go for bright colors. Age also plays a role in color preferences, since the day he is borne. In early childhood, youngsters prefer bright colors, especially the brilliant ones. But their taste changes become more delicate with age and maturity.

Although using colors is influenced by personality, taste, and history, the details of matter of the object are design tools that control perception. The spectator seems affected by skill, familiarity, and lighting instances of these colors (Eakin & Kurtich, 1995). Ching discusses a number of points that have an effect on color perception, the most important are the decision on the warmth or the coldness of color tint, its relative value, and to what degree chroma it is visual strength by which attracts the attention and brings the object into focus, where warm color tint active and visually inciting. It also tends to exciting and releasing a physical energy that expedites the action and produces a sense of instability in the space.

We find the colors red, orange red, violet red, and yellow, all tend to incite action and creating revolutionary stimulation in the spectator, as a result of high blood pressure and deep breathing, having strong effects on human behaviour and mood within the space

(Ching, 2004). These are called warm colors, as red color affects some mental activities, like problem solving and decisions taking, social interactions, and strong body activities, and extreme sentiments (Halse, 1978). It is characterized by the ability to stimulate, and mental exciting. The degree of color effect varies according to its light value. Bright red, for example, has flirtation content, while middle red indicates good health and vitality. Red color also is associated with violence and cruelty, while purple seems pacifying. As for orange color, it is stimulating, which makes it relatively less necessary.

Brown color means warmth and comfort, in spite of considering it discouraging and depressing. For that it should be accompanied by orange or golden yellow (Halse, 1978). But yellow is joyous and stimulating, and is more important in spreading action. It can also be used to draw attention to dangers. Cold colors like blue, greenish blue, and violet blue, bring comfort and quiet, reduces excitement and concentration, and brings in slow reaction and performance; they also show size more than its real value (Vodvarka & Malnar, 1991).

The properties of different colors have psychological effects. High chroma colors are by nature inciting and motivating, but tiring for the eye; which make them preferably used in high motion places, like markets. Colors of medium chroma help in social interaction, while low chroma colors look pale because of the absence of color features in them, but they are more comfortable. Colors of higher values are stimulating and attractive; and colors of medium chroma are comforting. Colors of low values are depressing and boring. Contrasting values make us more interested in forms definition (Ching & Binggeli, 2004).

As an example of that jewellery is exhibited against yellow or strong chroma violet, as those colors have a nature that excites and attracts. By that a radical change was noticed in the minds of people, especially in workplaces (industrial workshops). Painting factory walls with bright red increases noise in this environment, and psychologically influences the mentality of workers. Using olive green color, on the other hand, reduces high noises produced there, improves the psychological conditions of workers, and improves productivity. The reason is that bright red color possesses waves that penetrates the human body and leads to disturbance and tension (Shirzad, 1985).

Physicians and psychiatrics assert that variations in color not only affect the body, but the soul too. The Europeans, for example, associate yellow color with shining delight, violet color with seriousness, and green color with health. They adopted these concepts in their color designs, choosing yellow to induce sun light inside a room, blue color for making living and bed rooms cool, after a hard and tiring day. In eating rooms autumn colors are preferred, like yellow, apricot, and orange, to create a happy environment during food time (Faulkner, 1972).

The designer should be familiar with these effects, to take them into consideration in his designs (Saleh, 1982). It had been proven that there is a difference in the subjective feeling of the individual of warm/hot color, inside a working room painted bluish green, and another one painted reddish orange. In a green painted room feeling cold begins at 59 f. While in a room of reddish orange color feeling cold begins at a lower temperature. This is because cold colors pacify blood circulation, and warm color energizes it (Hamouda, 1981). On the other hand, studies (Stahre, 2004) proved that colors in small

areas do not induce strong reactions, unlike in large areas. In small areas colors look quiet, but less merry, than in large areas. A designer has to choose a color system suitable for the kind of building and its function, be it accommodation, business, or public, as well as considering what psychological effects the chosen color will have, thrilling, attraction, quiet, or comfort.

A study was conducted in the University of Leeds in 2002, to know the effects of color in small and large areas. The study was in two parts. In the first part color slides were projected against gray background. In the second part a study on two rooms painted with six colors of two groups. (NCS 101) and (NCS 1030). More hand ninety observers took part in this study. The information was elicited from them through personal interviews (Stahre, 2004). The conclusions of the study identified a number of clues taken from the emotional impressions. They are as follows:

- Temperature (cold or warmth).
- Size quality (small or large).
- Emotional tone (pleasant or dull)
- Location quality (open or close)
- Dynamism (quiet or active).

The conclusions of the study indicated the following:

- A green painted room is quiet and pleasant.
- Rosy colors are warm and pleasant, except bluish rose which is cool.
- In small areas the colors, however bright they are, are less effective, subject to external factors and effects, which reduce their psychological influence (Stahre et al, 2004).

Every color work might give us the feeling of happiness, or sadness. It can be said that color is the means of cladding nature features we are in contact with. This relation is rather emotional in every sense of the word, or probably aesthetic, attached to the artistic emotions that makes us happy to look at, as a mirror that recreates our inside feelings.

3.5 Effect of Color on the Perception of Surrounding Environment

3.5.1 Color and its Effect on Environmental Aspects

Color does not only creates objective and subjective impressions, but also influences evaluating it, and our perception of time, size, weight temperature, and noise. It was found that here are basic common reactions among most of the people towards color, taking into consideration the cultural factor, plus the geographical and economic factors, religion factor, and public taste and the educational level. . The process of color perception affects the process of the surrounding environment, and its elements (Mahnke & Mahnke, 1993).

3.5.1.1 Volume

The color value is one of the most effective factors in perceiving the vastness of interior space. Light colors visually enlarge size, so do cold colors, and small division; while condensed colors and large divisions make a space look smaller (Muller & Lloyd, 2004). Therefore, colors can be used to induce practical effect on space dimensions. It is recommended to use light colors in a small and narrow room to make it look larger and wider; and these colors should be lighter than the floor. For making a large room look smaller dark colors are used. High ceilings will also look less high by dark colors (Fischer & Zelanski, 2003).

3.5.1.2 Weight and Size

A dark color looks heavy, while a lighter and less saturate color looks less dense. When two colors have the same light value and density the warm color looks heavier. Heavy machinery in factories is mostly painted dark green to give the feeling of weight and confidence in them. But if we replace green color by yellow they will look unbalanced.

3.5.1.3 Estimation of Time

Although there is a contradiction in the relation between time and color, but there seems a relation between color and perception of time. There is a belief that in an environment of hot colors time seems longer, but with cool colors it seems shorter than estimated (Mahnke & Mahnke, 1993).

3.5.1.4 Noise and Sound

A number of psychologists, like Werner Hienz, Karvlen, Allen, and Schwartz, have studied the effect of sound on color perception in the surrounding environment, and

found that the loud sounds make the eye more sensitive to the green color, and less sensitive to the red color. For the purpose of design, designers may use the relation between color and sound, taking into consideration that senses stimulation, brightness, and noise, have a relation with warm colors, and the opposite is true. People talk mentally associate stark red color with a highly saturated color. The scarcely talk about stark blue or stark green colors. A noisy environment inspires the feeling of being noisier when painted bright red; and noises seem more active in dark color environments (Davidoff, 1980).

3.5.2 Color Usage in Interior Space and Its Impact on the User

White and off white color was, and is still so commonly used in interior spaces, almost like an epidemic. This color started to be used on walls in 1955 and was at its peak in 1975. But modern psychological and physiological studies proved that white color, and any color close to it, is unable to create an attractive and pleasant environment. And could have negative results in some cases, when used in certain interior spaces, as people spend much of their time in this environment. So they felt the need for color variety, to feel it and revitalize their activities, and to feeling comfortable (Mahnke & Mahnke, 1993).

The latest psychological studies showed that people are aware of the color and texture of the architectural environment they use, and they love its color variety. People, who enjoy achromatic environment, with all its purity and cruelty, are but limited, compared with those who hold the same aesthetic values of the architects who design colored environments. They find colorless environment akin to prisons atmosphere; cool and

lifeless. These are the conclusions of a study made at Goteborg University in Sweden, following a series of investigations which collectively indicated that most people are so much in need of colors. They showed a positive attitude towards happy colors which give them a feeling of enjoyment (Mahnke & Mahnke, 1993). This is especially the case when colors are used in interior spaces. Using white color as a background for a colored subject causes strain for the eyes, as a result of the color contrast, about which doctors do not advice. People feel negative towards an environment of less decoration and colorless (Muller & Lloyd 2004).

3.5.3 Color in Commercial Interior Spaces

Color has different effects on interior spaces; it could be cold or warm. It is also possible to compose color schemes in monochromic, bichromic, or trichromic; and make harmonious or contrastive color formations, pure or impure, rich or poor, weak or strong, with directed or reflected colors, historical or new. By means of these effects it is possible to vary our sensory perceptions, to have an effect on our sentiments and on our behaviour inside theses spaces (Ladau & Smith, 1989). The case is different in interior spaces of commercial buildings, where colors should look suitable and attractive to customers. It should also satisfy their instinctive needs by providing comfort and familiarity to enhance social interaction. Planning color formations hat attract customers and encourage them to roam around commercial centres, then making them attracted to buy one or more of the exposed goods, will increase commercial activities there. There are many basic usages of color inside interior spaces in commercial centres, as follows:

3.5.3.1 Psychological Application of Color

Certain colors are used to influence the feelings and sentiments of the receiver (Ladau & Smith, 1989). A color may have an effect on the perception of indicators in the space through inducing illusion in the perception of the form and size of the space, in time, in temperature, and in noise inside the space of commercial premises. Colors could also be used to create emotional effects by means of using color formations that attracts the customers, and encourage them to spend more time inside commercial spaces, and creating an aesthetic image that prompts the customer to respond to buy what is inside.

Commercial activities could be enhanced by using color tints which the customer responds to, by means of influencing his perception and understanding of the environment there (Faulkner, 1972). Colors can be used to realize aesthetic purposes by responding to the aesthetic taste of the people by means of three elements: culture, which offer comfortable and satisfactory color formations familiar to people, by pattern by choosing colors that agree with the common taste and by design by choosing colors on the basis of contrast. These three elements from our aesthetic taste in these spaces (Ladau & Smith, 1989).

3.5.3.2 Functional Application of Color

Certain colors are used to satisfy special requirements the aim of which is purely functional, like using color to express the quality of the tint matter of an object which is captured by the eye, and explains what operations happens on the light falling on an object (reflection, refraction, absorption) (Vodvarka & Malnar, 1991).

Reflecting and absorbing light rays for creating suitable environment in interior spaces offers the feeling of coolness or warmth. This happens when the physical properties of color work together with reflection and absorption of light on objects and surfaces of dark colors to create the sense of warmth. For light color surfaces and objects the light rays and heat are reflected to the rest of the space, which keeps them relatively cool, leading to feeling cool.

Camouflage in colors is used to make the objects obscure, or to change their form, identity, or size, for example by using dark colors in places where garbage is collected, to make their color suitable for the garbage, and to hide it. Color may also be used to create active and comfortable vision in interior spaces, where colors help the surfaces surrounding the space, like walls roofs, and floors, in making space shining. Blue tints are used in interior commercial spaces, where they look brighter in dim lighting (Faulkner, 1972).

CHAPTER 4

BRANDSPACING AND IMPORTANCE OF COLOR

In this chapter we will talk briefly on the concept of brand space in display spaces of commercial function, then we'll tackle the historical stages of its progression up to the modern concept with its trends; considering that brand space appears in terms of different brands and style so this search will determine it, as well as identifying its elements, features within the context.

The visual impact of the brand space in interior space of commercial buildings creates a positive interaction and stimulation to the observer towards specific products in order to trigger the observers' need to shop through the scientific use of different specification of color formations inside commercial spaces. A brand space is considered as an essential element in the practice of interior design which showed its apprehension value that can be applicable in three dimensional environment that signify the interior space, with the help of a good leadership from an architect or an interior designer we can design an atmosphere that reflects the competitiveness of the product in display.

4.1 Definition of Brand

A brand can be identified as a name, symbol, term, design or sign, or may be a combination of two or more of these terms, it is used to define the products or the services of what it needs to be sold or a group of it and signify them from other products or services from those that in compete with the product or services (Kotler & Armstrong, 1991). A brand is considered an identification card of the product, it is very essential in any institution's strategy which consists of other elements that identifies the product and gives it legitimacy from the legal and marketing aspects.

A brand is considered as the link between an institution and their customers whether they were consumers or distributors, and because of the multiple functions that a brand does with respect to its owner and users, it revolves around six milestones (Murphy, 1987).

- a. A group of positives: emotional and functional.
- b. A group of values: the institution value.
- c. Cultural: reflects a specific culture
- d. Characterized
- e. Efficient: targets specific consumers.

A stamp for the product: separate this product from other competitive products whether it was for the consumers or the distributors, it can also be considered a brand space for the product, it can be considered as a contract between the product and the consumer

that consist the characteristics of the products and what the consumer expect from it with respect to quality and value (Kotler & Armstrong, 1991).

The vernacular use of the term slang indicates a slight difference in its several meanings, the most widely used aims towards three different but related senses of the word, first it is used as a reference, second: identification to the good or the service and third is what the consumer expect and hope from the product or the company that provide it. Brand equity is the precise name, brand personality, brand promise and other references to the sum of all its features whether it was tangible or not as long as the product of the institution is distinctive from others (Aaker, 2004).

The third implementation of the word is little bit sophisticated than the common understanding of it, it pretty much signify brand's equity, characteristics such as personality and attributes, sometimes the word brand can have a negative meaning and denotes disgrace or stigma, a brand is a support generator for the product and a tool in marketing and advertising (Wheeler, 2009). Marketers interpretation of brand is a distinguished claim that make one brand stand out from its competitors and provide a genuine reason why someone should pick this brand, creating a brand is not just developing a logo, a brand doesn't reflect what marketers thinking is, it should reflect what consumers think it is, it is the message that is sent behind the product (Wheeler, 2009).

The use of the brand as a marketing tool is to conclude the meanings behind the institution like liability and good quality, it is thought by marketers that brands minimize

the hesitance when consumers risks buying something they haven't tried before or know little about cause once consumers get accustomed to certain products it is hard for them to change it to other substitute.

Institutions focus on ways to attract consumers attention by perceiving the value of the product and its position with the use of brand as consumers will react to, marketers understanding of brand is as an identification sign used by marketers as communication instrument that combines a sign, slogan, symbol or a name in a way that distinguish the institution and the product they sell from other competitors that carries the institutions attributes, reputation and history (Murphy, 1987).

4.2 Brand Culture Today

The consumption of goods has routed from one on one trading transactions to the internet, and from a space in the store to massive spaces inside giant retailer stores or commercial building , that route started around 1980's, the subtle transformation from the culture of consumption to the culture of branding (Murphy, 1987). Brands had become crystal clear to consumers whether it was a coffee shop around the corner to branding an entire nation; everybody rode the wave of marketing their product through the concept of branding in order to create their own identity in the marketplace.

This increase in branding in where we live has been one of most effective phenomena in past late century, it has touched everything from the way we dress and eat to how and where to go to work or vacation (Murphy, 1987).

During the seventies of the last century, logo clothing was tucked inside the collar, hidden and not visible to the public, only sport shirts such as golf and tennis shirts whose logo emblems were visible but that was only inside tennis court and golf courses, things had changed later in the 1970's when designers such as Ralph Lauren and Izod Lacoste managed to escape the sport fields into mainstream attire where Polo horseman of Ralphs and Lacoste alligator logos shown, these logo's main function didn't serve just as a mean to keep the shirt's tag on, it served more than that, it gave an added value to the items, and now we don't buy products and services; we buy brands (Schultz et al, 1993).

Brands became a useful way to separate specific consumers from others and replaced the use the common labels such as soft drinks to the use of specific brands such as Pepsi or coke, replaced the use of athletic apparels with brands such as Nike or Reebok and those brands ultimately became icons. Variety of brands in our lives brought new culture and people started to associate themselves with brands, brands gives attitude and eventually formed new classes and groups, unlike before when groups and classes, Unlike the past where groups were identified by their beliefs or geographic location. Now people are proud to show how loyal they are to the brand, brands has transferred what it stands for whether it was the identity or the value to consumers which eventually transformed the attitude of both marketers and consumers, brands had invaded all aspects of life and can be seen everywhere; politics, education and religion and in our house and street creating new sets of cultural scenarios (Koehn, 2001).

4.2.1 Globalization and Market Explosion

Globalization in a nutshell is a common term that first was used in the 1980's and refers to the processes that compressed the world in terms of time and space (Mogahed, 2003). Globalization connected and facilitated economic activities through lowering of trade and political barriers and helped business consider production as secondary activity and can be easily outsourced to the extent that institutional resources can make time to create a brand that is valuable.

That's why marketing development corporations exist now merely for creating and developing brands that attract consumers with compelling and astonishing meanings. Mass media advertising was the incubator that made branding phenomena possible, and now people aren't just buying products for their features but for the added value; a company such as Nike would aim for a connection that is emotional to people who are into sport and fitness, it would then address the challenges and have it interwoven with the life of the user (Knapp, 2001).

So brands has ridden the fast train to globalization and expanded the cultural boundaries and it was the conveyer of organizations' main values and identity. Brand had become the main marketing approach the motor the way business is done and advertising took small portion of the photographs of branding and therefore we can easily say that globalization paved the way for the marketing boom and was essential for the shift from the culture of consumer to the culture of brand (Kimmel, 2006).

4.2.2 Presence of Information Technology

The rise of brand consumption due to the technological development, it filled our minds with information but made our time more valuable, with the high pace in brand demand, the situation was aggravated by competitors who started mimicking each other's product features once they get to the market, a debate was risen among manufacturers to the quality of the products, consumers are now basing their choices on symbolism over reality.

Advancement in information technology was tremendously helpful in the aspects of communication which is important in marketing, it is no longer a way or path of information shared by platforms, it is more generic and consistent approach especially when media in its visual aspects compete with the physical aspect of it, the use of media as medium which had grew as a sharing of information fields such as blogs; organizations are now indorsing blogs a much as they endorse word of mouth, overall we can easily find that presence of information technology has been vital in the shift from the culture of consumer to the culture of brand (Robert & Lafley, 2005).

4.2.3 Post Modernity and Capitalism Condition

Modernism and postmodernism were distinct eras after the industrial revolution where transformation in the social and cultural aspects were noticeable, modernism is considered the era and product of the pioneers who took rationalism and made it the foundation of their culture, whereas postmodernity era focused on the downfall of industrial production, it was the link to the transformation from the industrial era to the technological era; the change from unity, rationality of thinking in the modern stage, to

pluralism, complexity and emotionality of thinking of the postmodernism, we can notice that modernism differentiate cultural aspects from social aspects and that's why modernism has separated mass culture from critical high culture, postmodernism on the other had unify the two by spreading popular mass culture masked by aesthesis of modernism (Harvey, 1991).

Late Capitalism is identified as the state of which structure of capitalism are operated by multinationals and works beyond nation, the system operated capitalism is so extreme and distant that the origin of power that controls our everyday life is inconsistently diminished, the appearance of a media culture dominated by symbols affect the recent changes in economy towards late capitalism as way to describe the increase in themed consumer spaces. Postmodernity has become a phenomena that has its own sign and symbols in the culture, with the transition from industrial modernity to the technological postmodernity economy, we can notice that organizations are trying to take over control by maintaining the overarching fundamentals that create symbolic values for the products (Harvey, 1991).

4.3 Brand Environment

The idea of environmental branding has earned huge momentum due to the overlap of objectives in design and marketing. Marketers have noticed how important to extend their strategy of their brand to their environment, whether they intended to do it or not they realized that environment communicate a message, marketers knew that they would weaken their brands if they left the environment unattended and thus looked for ways to design their environments.

Designers had played role especially interior designers, due to the fact that designers have the skill to craft environmental branding. Nevertheless; that term became widely used and referred to any everyday design output that comes from the practice of environmental branding (Baker & Cameron, 1996).

1. Marketing Perspective

10 years of the Internet age has passed and has maximized the possibilities of communication, marketers knew that they're going to have a very difficult task to attract consumers' attention with the media bombarding them with countless graphical images of ads, and for the marketers to make their way through the media bushes and connect with consumers, that's when they realize the need to shift attention from virtual space to physical space and extend the brand to the environment which helped internalize the message of the brand.

Brand environmental shows minor differences in brands and provide consumers with physical evidence to the voice of an organization; in a nutshell, successful brand environmental increase brand understanding on the short run, and in the long run with enough nourishment to the brand, a brand would establish a personality that understand and embrace what customer needs and hope (Cherulnik, 1991).

2. Design Perspective

"Victor Hugo" What he meant is that the advancement of printing press would eventually bring architecture to its death as being a main medium of communication. However, architecture did not die as primary medium of communication nor visual printings replaced building materials, it's all about finding ways to bond with consumers

and appeal to their senses through design and strategy. Appealing to senses is powerful and instant, able to change our lives deeply.

Victor Hugo proposed four pillars of branding in emotional aspects which are: relationship, sensorial experience, imagination and vision. Relationship is about relating to consumers and show respect to them, sensorial experience is about reaching and emotional contact that achieve brand preference and make consumers loyal. Imagination is the kick that make the process real. And vision is the design approach that identifies potential pathways into future; it has however gone through changes because of the socio-economic condition and the advancement of brand culture (Matt et al, 2002).

Designers are now aware that design of environment has vital role in adding a connectivity layer between environment and beholder and by creating such connection using specific brand messages, environment has the capability to shape perception and generate behavior that designers can use to help convey these messages by creating solutions in design (Cherulnik, 1991).

4.3.1 Contemporary Manifestation of Branded Environment

Four formats of commercial building are identified as a result of different branding strategies and they are: retail stores, office building, mall and temporary pop-up stores. These formats can shift to one another like when a retail store would have a pop-up store within its retail outlet or the use of one store within another store for promotion purposes or one store get upgraded to a different format for expansion purposes, these formats morph back and forth depending on their marketing strategies (Najafi, 1976).

4.3.2 Critical Design Approaches of Branded Environments

In order to look at the concept of branded environment from design perspective we need to understand that environment is a very powerful media for nonverbal communication and a generator of multi-sensorial experiences.

In order to identify these design approaches we need to clarify how environment as a medium and as a tool in design creates brand related experiences, environmental psychologists noticed that we respond to our physical surroundings cognitively, emotionally and psychologically, those responses ultimately affect our behavior. Based on that Mary Jo Bitner professor of marketing at Arizona state university, has conducted a study to see how environment as a spatial element able to create certain mood or attitude and trigger cognitive, emotional and psychological responses, that study worthily showed how these responses generates brand related experience, a summary of her study is presented here (Wheeler, 2006).

1. Psychological Responses

Environment generates experiences, it is not just cognitively and emotionally triggered, psychological aspects play important role, physical responses towards anything such as level of noise, temperature of room, air quality or light may have impact on the emotional experience of the environment, hence the environment is the medium that create multi-sensorial and multi-dimensional experiences (Baker & Cameron, 1996).

2. Cognitive Responses

Environment perception can be a way to lead us to the beliefs and attributions that are associated with products, people and organization. General perception of the environment helps us translate the activity being done or performed like going to a restaurant and its environment can give us a cue from whether it's fast food restaurant or

a sophisticated sit-down one through particular type of configuration, other cues such as furniture, decorations can provide us with hints to the cost of the product or service provided in that environment. Environmental cues such as environment size or its furniture layout can give clues to relation between users of the environment or its working method. Other cues such as signage, ventilation and adequacy of space may have effects on the perception of the environment (Baker & Cameron, 1996).

3. Emotional Response

Environment from an aesthetic aspect can be seen as stimulus Element, experience that is pleasurable and fun creates emotional connection between users and environments. We tend to belong to environments that feels compatible to the overall image of the environment, it creates experiences that made us be sure that we are taken care of, it can be sometimes educational and generic, environment can create an emotional bond with people with the help of furniture and decor that acts as conveyers to the messages of the organization and then impact us emotionally (Gobe, 2009).

4.4 Colors as a Valuable Element in the Creation of an Identity for Brand Space

4.4.1 Associational Impact of Color

Color is a function of light and varying wavelengths, that's the simplest way of identifying color. Wavelengths consist of radiant energy that determine the hue of color, cool and warm color are created depending on how long is the wavelength, cooler colors are created with shorter wavelengths while warm colors are created with longer

wavelengths. Wavelengths are measured in nanometers; visible wavelengths to the human eye belong to the visible spectrum (Abbou, 1982).

Faber Birren (1961) a long time color researcher studied color and its effect on all life form ,observation both plants and humans. He examined growth pattern of plants when exposed to different wavelengths of light and found that plants exposed to red-orange light grew taller than plants exposed to other colors”. In humans Birren (1976) “study the way in which humans see color suggesting that it is more than fully what eye see, it is the how the brain interprets it”(Bellizzi& Hite, 1992). Zelanski and Fisher (2010) “characterize the effect that color has on the human body and what result from exposures to appointed colors of light. They explain that each color can be associated with a different part of the body for example orange wavelengths tend to affect the immune system and can help5the digestive system” (Zelanski & Fisher, 2010).

A research was done to a design of a commercial building, they found that color has the power to attract people to the building, they tested the psychological effect of colors and they noticed that warm colors make people more excited (Bellizzi& Hite, 1992), blood pressure get higher with more eye blinking, cooler colors brings a more relaxed feeling and that's why cooler colors was preferred over warmer colors, Warmer colors are associated with feeling of elation while cooler colors create a sense of relaxation (Lee & Rao, 2010).

4.4.2 Color Association for Commercial Environment – Brand Identity by Color

Most colors have meanings that consumers are familiar with; red is associated with fire, blood, health and courage; green is associated with nature, growth and jealousy (Kargere, 1979) orange is associated with wisdom or strength, yellow is associated with loyalty blue is identified as sincere and purple is recognized as sign of royalty. Color association can be based upon gender, blue is for males and pink for females (Grossman & Wisenblit, 1999).

Color can be a sign of recognizing brands like Chanel is black, McDonalds is red and yellow (Hynes, 2009). Consumers choice of purchase can be affected by the color of the product packaging, a company that uses white packages can give the impression to consumers that they are plain and boring, consumers can associate for example the color of calligraphy in health supplement bottle with poison if it was written in black and white (Grossman & Wisenblit 1999). Several studies discussed different side effects of cool and warm colors in commercial environment, their studies revealed the same conclusion, despite the fact that people are attracted to warmer colors, they feel that cooler colors inside commercial environment such as green or blue to be more pleasant and pleasurable, they were more likely to browse and buy products in a cooler color simulated store. The reason for this contradiction may be related to the fact that warmer colors can over stimulate consumers and impair their decision (Bellizzi & Hite, 1992).

4.4.3 Brand-Color as an Associated Characteristic

Logo can be defined as a symbol or a name that differentiate one brand from all others. It can consist of several design elements such as size, color, and image and is normally an array of graphics, colors and fonts. The main function of logo is to help create an

association between consumer and brand, a well-designed logo should hold meaning transcend the elements used to make it and should trigger emotional response from the consumer, that response is the sign of association with brand and make consumers recognize that brand instantly (Pittard et al, 2007).

Logos make consumers more confident in their purchase since they already experienced its quality from previous experience, recognizing the brand is a cue to purchase since they already trust the product or the service. Research shows that 40% of consumers purchasing decision happen outside the store that means that half of consumers purchasing decision happen while viewing the product on the shelf (Kholi et al, 2002) logos held setting apart one brand from another through emotional response (Pittard et al, 2007). “Beardsley (1961) explains that the term aesthetics is useful as a term that is generic for all works of art. Aesthetics can be defined as visually pleasing and artistically appealing” (Tractinsky & Lowengart, 2007). In works art of an emotional reaction is expected due to the aesthetic appeal and the same constructs should be expected from a well-designed logo; this helps to create resonance with consumers (Pittard et al, 2007). Design decisions influence the consumer in both their purchase intentions and their impression of the retailer (Tractinsky & Lowengart, 2007). One of the most important factors in choosing a logo is the clarity of the logo, it increases its value and keep it memorized in the memory, the use of words that are easy to pronounce, easy to remember, brief, media friendly, photographable, describable and doesn't contain unpleasant innuendos (Aaker, 2004).

Color is another important factor, in brands, the use of colors on opposite side of the color spectrum is commonly used among competitors, Kodak uses yellow while Fuji uses green, and coca cola uses red while Pepsi uses blue. It is important to choose basic colors because other colors don't leave the impact the basic colors do for example red is seen as sign of power and fun so companies use red to attract attention while blue is seen as sign of calmness and stability and that's why it's used by companies to show their stability and long history (Baker & Cameron, 1996).

Color is part of the aesthetic appeal since it is part of design elements. Consumers can easily judge the aesthetic appeal when they evaluate products and can result in positive or negative feeling (Tractinsky & Lowengart, 2007) because response time is important and essential to the success of the brand and get a positive feeling from the consumers (Grossman & Wisenblit, 1999).

Chapter 5

TESTING THE THEORY ASPECTS OF COLOR AND BRANDSPACE ON THE CHOSEN EXAMPLES

This chapter aims at outlining the theoretical framework presented in the previous chapters for the purpose of analyzing the chosen samples regarding the phenomenon of responding to certain color formations, and the effect of brand space in enhancing the commercial activities in commercial building. To realize these aims the investigation will deal with the elements of then theoretical framework in their final forms: colors and their formations, the identity of the brand space, and interior spaces of commercial building. These elements will be discussed in order to select the most effective ones, then attempting to put them in an initial form, by looking at indicators of color relation and its formations, at the identity of brand inside the interior spaces of commercial buildings, and the indicators of the relation of feeling, (attraction and excitement) of the color formations in the interior spaces of commercial buildings, and finally the indicators of commercial activities in the interior spaces of commercial buildings. To realize this aim certain samples will be randomly chosen by survey to subject them to theoretical framework analysis to arrive at the aim of the investigation.

5.1 Elements of the Theoretical Framework

5.1.1 Color

There are many different points of view in defining colors and their formations. The physicist defines color to be not only a property of things, of surfaces, or spaces, but also that feeling brought about by certain kinds of light that can be perceived and interpreted by the brain (Ching, 1987). The psychologist defines it as a psychological experience based on physical foundation, part of which is from our natural perceptive experience of the visualized world, in addition to being a perceptive experience originated as a function of limited properties of light as received by visual receptors (Saleh, 1982). Color may be defined by its basic components, known as the psychological properties of color, including hue, value, and chroma, as discussed in chapter three.

Theoretically colors are classified into two categories: chromatic colors, like red, blue and others; and achromatic colors which are the neutral colors white, black and gray (shirzad, 1997). Previous studies also presented another classification of color, based on the apparent warmth of color, and its psychological effects. There are warm colors, characterized by being energetic and visually motivating, exciting and able to release more physical energy, prompting quick reactions, and creating an atmosphere of instability in the space. And there are cold colors, like blue, green, and others, which provide a feeling of comfort, quietness, and makes things look larger than their actual sizes.

As discussed in chapter 3 a number of color systems, defines as the way colors are ordered in a logical sequence to present their properties in the form of a circle, mostly accompanied by a three dimensional image. There is a classification of the hues of the color system, the class of the main hues which include the basic and the secondary hues, the other class includes the intermediate hues that are produced by mixing the main hues, and finally the secondary hues produced by mixing a basic hue with an intermediate hue.

The hues are arranged in the form of a color circle that represents the circumference of the color tri-dimensional body in which the axis represents radiance, while the diameter of the cone represents color intensity. As discussed in chapter 3 there are three color systems, considered the most important in color systems: Munsell, Oswald, and NCS (Hamouda, 1981). We shall use Munsell system in the analysis of the properties of the colors used in the samples chosen for the investigation. Munsell's system comprises twenty hues, and value grades range between white and black, in nine grades. The hue grades are different according to the difference in the darkness or opaqueness of the hue, and the level of value according to Munsell's system.

Theoretical studies have adopted a number of color schemes and their psychological effects, which included two basic schemes, the first are called harmonious color schemes, and the other includes contrast color schemes. These two kinds of schemes depend on the harmony or contrast in the hues of the color scheme. The studies also presented another kind of classification called value key which is brightness. It is adding white color to the original color to give it a value higher than its own, which makes it more attractive and

exciting. The other is darkness, by adding black color to the original one to give it a lower value, making it dull and depressive. For example using colors of low hue in ceilings offers a feeling of comfort and quiet.

As discussed in chapter 3 the studies mentioned three patterns of intensities, the first called low purity chroma, which looks pale because of the disappearance of the color features in it, but is more comfortable and slow in performance. The second is called moderate purity chroma, which helps in social interaction. The third is called high purity chroma, which is exciting by nature, and could be tiring to the eyes. For that matter they are used in places of activity and movements.

The sources of lighting are classified into two kinds: natural lighting, and artificial lighting. The lighting systems are also classified into direct lighting and indirect lighting. The studies described color formations, which are known as the way of combining colors together in a harmonious or an inharmonious pattern of the components of that formation, which has a certain psychological function and effect that could be different from the functions and psychological effects of the colors that form it. There is also a number of ways of using colors inside the interior of a commercial space (functional utilization of color), like identifying the form, and the properties of the materials used, the psychological utilization which includes realizing the emotional effect suitable to the function of the space and drawing the attention to a certain surface or space.

5.1.2 Brand Space

A brand space is considered one of the important elements of the interior design of commercial buildings, which has become widely used in the last years, the matter that supports the aims of this investigation.

The previous studies had shown the importance of the identity of the brand space, and its effect on the interior spaces of commercial centers, which increases the trade activities. A brand space may have many different patterns and shapes. The commercial elements of a brand space, its form and size, can have a positive effect on the interaction with the viewer, creating a state of attraction and motivation to promote commercial activities.

5.1.3 Interior Space

The previous studies made it clear that the interior spaces of commercial buildings should have the environment that make the users live in a psychologically comfortable atmosphere, where they can take decisions on buying without hesitation, which promotes the commercial activists. The most important design features of these spaces are the interior form, the visual elements (color and lighting), and the material elements. The visual elements are the most important in this investigation, (as discussed in the previous heading). The material or components of the space comprise walls, ceilings, floors, and furniture, all of which determine the entity of the space. The materials used in these elements are paints, wallpaper and wood...etc for walls, paint, gypsum board, aluminum and wood...etc for ceilings, marble, wood and carpet...etc for the floors.

5.2 Analysis of Case Study Example

Commercial buildings are that type of buildings that depend on visitors' occupancy and attendance. They must give visitors the sense of comfort and excitement, and accommodate their psychological needs and meet their commercial requirements. Making the interior design of these spaces is not complete without proper selection of colors.

Because of the importance of color and brand space in the form of interior environment of commercial buildings, and to emphasize the importance of these two factors in increasing the commercial activities, the researcher adopted a descriptive method in analyzing the buildings samples chosen by him as they are suited to the topic of his statement. Because no suitable building samples can be found in the local environment, a number of commercial buildings samples to be analyzed were chosen from the survey. These samples included in the interior designs of commercial buildings of universal companies built in the period between 2006 and 2012. The choice of these samples was on the basis of their functions: offices, a museum, commercial center, and restaurant. The aim was to select a variety of designs that show the effects of color and the identity of the brand space on different commercial environments. These samples were of selective list of international companies most successful in the brand. Nike and Adidas are the first and second in the ranks of firms in sports equipment production, Mercedes is the first motor cars production, McDonald's is the first in the restaurants fast food, ING Bank is one of the international banks in providing banking and insurance services,

Google is the first in the range electronic search engine services and programs, and Vodafone is a pioneering company in communications. These 8 examples of commercial building were chosen for the research because of the colors of their brand are repeatedly used in the interior designs and decors of the buildings. The choice of these samples was basically depending on information acquired collecting data survey. In most of the other cases the information was not sufficient, in respect to photographs and plans, for the purpose of analyzing the contents of the samples, and arriving at satisfactory results for the research work. About twenty five samples of International companies were chose, but because of lack of sufficient data and photographs for some companies such as: (Apple, Amazon.com, Intel, HSBC Bank,3M...etc); repetition about color useg in brand and interior space such as: (Coca-Cola, Samsung, Canon, Colgate, Nescafe...etc); therefor only eight samples were used for the analysis.

For the purpose of choosing hypotheses for this study, the researcher depended on descriptive methods in analysing the chosen samples in this work, by choosing commercial buildings by means of a survey, according to the aims of the work, to investigate the effects of colors and brand space identity inside the spaces of these commercial buildings, by means of stating certain key points. The analyses depended on photos and sources. The samples were carefully selected from among buildings of different companies which are considered in the forefront (first and second) in the sphere of their functions.

The analysis operations depended on selecting certain samples for analysis, and explaining the properties of colors (hue, value, and chroma) used in their brand space and in the interior space of the commercial buildings, and to which color family do they

belong. The brand was analyzed, regarding its relation to its colors, and what are the psychological effects do they have on the users (the form and colors of the brand space). Finally, making an analysis of the interior organization of the commercial building through its main elements (walls, ceilings, floors, furniture, and other accessories used in that space), in addition to the psychological effects of color inside these spaces on the users. The effects of the identity of the brand space inside these spaces was also emphasized; as well as the concept of imparting the identity of the brand space to the design of interior spaces of commercial buildings (form and color).

An example analysis (table 5.1) has of the process of analysis was put forward as in the following sample:

Table 5.1: Example Analysis Table

<p>Interior Environment</p>	<p>1. Brief Description about the Chosen Example</p>	
	<p>Name:</p>	
	<p>Location:</p>	
	<p>Designed by:</p>	
	<p>Date:</p>	
	<p>Colors Used:</p>	
	<p>2. The Color Characteristics</p>	
	<p>Selected Color Indicators</p>	
<p>Visual Properties Of Color</p>	<p>Hue</p>	
	<p>Value</p>	
	<p>Chroma</p>	
	<p>Color Qualities</p>	
	<p>3. Brand Identity and Color Relationship</p>	
<p>Visual of Logo</p>	<p>Images / Font / Colors Used</p>	
	<p>Psychological Impact</p>	
	<p>4. The General Interior Character</p>	
<p>Interior Space</p>		

	Visual Elements	Color	
		Lighting	
	Psychological Impact of the Color Used		
	Physical Elements	Wall	
		Ceiling	
		Floors	
		Material	
		Furnishing	
	5. Colors Usage in Physical Elements of the Interior Space		
	Wall		
	Ceiling		
	Floors		
	Furnishing And Accessories		

5.2.1 Adidas Company

5.2.1.1 Brief Description about the Chosen Example

Adidas is a German company specialized in manufacturing sports gear, especially sports footwear. It also manufactures T shirts, sport bags, goggles, and all sports equipment. It has established its name all over the world as a competitive firm which has numerous branches in most countries of the world. It was established in 1924, and officially registered under the name Adidas in 1949 by Adolf Dassler. Hence its name derived from the name of its founder. It occupies position number one in sports gear in Europe, and the second in the world after Nike (URL 34).

The new headquarter of the company in Germany was built in 2011, designed by Kinzo Design. The designer understood the identity of the brand space, and used it as a part of the interior space environment. Which was embodied in a unique design of the building of Adidas. Both traditional and modern materials were used for colors, texture, furniture, and interior decor. All of that aim to inspire a simple image of sports, despite using complicated material technology. The design of the premises makes one live the atmosphere of Adidas. The building looks like one mass, to create an image of the brand in the minds of the users, creating a sense of belonging and loyalty to the brand space (URL 35).

5.2.1.2 The Color Characteristics

The color is one of the most important considerations for creating the brand identity with environments. As well as the excitement and enjoyment which increase commercial activities there, the colors used in the brand space issues can be variable in terms of hue,

value and chroma aspects. So color is the main factor in creating a brand space. By analyzing the shape of brand and color used in the example which chosen. The colors used in this specific space example of the Adidas we are black and white.

Black color is considered as a presumed color, because there is no color in fact, and because of that it does not reflect any light, and is one of the darkness colors, being opposite to the color white. Black is darkness, while white is brightness. White is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue. According to Munsell it is a neutral color.

5.2.1.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception to that environment, complementary to product design, advertising, promotion. This is clearly seen in the building on Adidas. So it should be focused, by designers and architects, on the three-dimensional position in brand space that fits brand identity creation through color that strengthens retail strategies of interior spaces in commercial buildings. As one of the largest international companies specialized in sportswear, therefore the Adidas logo represents and elegance. The first brand of company was formed like Trefoil logo, the form brand was changed to three parallel lines. Signifying a mountain, pointing to the challenge to achieve the goal as symbolizing featured performer to reach the goal, and used simple and prominent font (URL 36). Used black color for the brand, which comes as a motivation inspiring in the world of sports, uses black

with luxury products, strong color indicates simplicity, boldness, development and tradition. Easy to read, therefor Adidas Company preferred to use only black color to distinguish its brand. Logo design holds a qualities to impose an impression of development and durability by simple brand, but greatly affect the users

5.2.1.4 The General Interior Character

The Adidas building in Germany, by its office design, furniture, and interior decor, reflects the image and function of the brand space of the company. The design aimed at creating a strong relation between the inside and the outside, by using glass facades of large sizes, which offer a sense of relaxation by viewing natural scenes and beautiful gardens outside the building, as well as extensively using natural illumination. There is also simplicity in the design by a harmony between the building and the surrounding area. The distances between desks, the clean interior glass partitions, makes the interior environment, the floors, and the roofs one unit. The corridors between offices look entangled in their form, reflecting the form of sport shoe ties. The roofs are designed in parallel lines, like the lines of the company's symbol, and using direct artificial lighting of fluorescent tubes in straight lines.




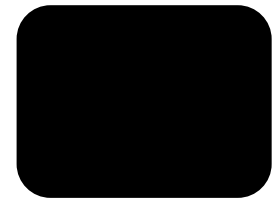

The floors are of white marble, meaning brightness and cleanliness, as well as good light reflection. The interior walls between office rooms are made of perforated glass to create a semitransparent environment between them. By using perforated metal partitions it is possible to hang photographs, drawings and samples. These perforated metal partitions are not only functional, but create visual effects as well. Using modern






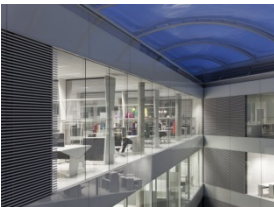
technology in the building, simplicity in design, allowed ease of movement inside the space. The effect of the brand space is even noticed on furniture designs. In this building white color predominates, used in furniture, accessories, and glass walls. It is noticed in all of the interior and external spaces, in walls and roofs, in floors and accessories. Using black with it create a degree of balance in that environment.

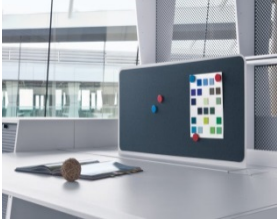



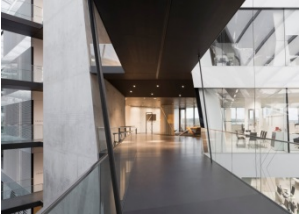




The extensive usage of white color in all parts of the building has many psychological meanings. It is the color of purity, motivation, and is bright and attractive. It is highly reflective of light. It is a color of cleanliness, and breaks the sense of boredom in the users, and gives a greater degree of contrast when used inside a space. For black, it should be carefully used in a space, so it was used for furniture, and some of the walls, in a semitransparent shade, that is to say it was not used to cover all of the wall, but as dots on glass partitions, to give a degree of transparency across walls, making that comfortable for users.

Black signifies strength and elegance, giving a sense of depth when used inside a space. Using white, with a limited amount of black, is attractive, and comfortable in work environments. These two colors are considered of the classical grades of colors. Effect of two achromatic colors create a sense of sufficiency, balance, harmony, and integration. They give dynamism, harmony, and confidence. This light-dark contrast is used in defining the facade of the building, in interior elements, like walls, furniture, and goods produced by Adidas, which is famous for choosing suitable colors for them; bright colors, and bold phosphoric materials, promoting sales activities.

Table 5.2: Analysis Example of Adidas Office

<p>Interior Environment</p>	<p>1. Brief Description about the Chosen Example</p>	
	<p>Name: Adidas Office</p>	
	<p>Location: Germany</p>	
	<p>Designed by: Kinzo Design</p>	
	<p>Date: 2011</p>	
	<p>Colors Used: Black and White</p>	
	<p>2. The Color Characteristics</p>	
	<p>Selected Color Indicators</p>	
<p>Visual Properties White Color</p>	<p>Hue</p>	<p>It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.</p>
	<p>Color Qualities</p>	<p>Achromatic Color.</p>
<p>Visual Properties Black Color</p>	<p>Hue</p>	<p>Is considered a presumed color, because there is no color in fact, and because of that it does not reflect any light.</p>
	<p>Color Qualities</p>	<p>Neutral color</p>
	<p>3. Brand Identity and Color Relationship</p>	
<p>Visual of Logo</p>	<p>Sign / Font / Color used – Black</p>	
	<p>Psychological Impact</p>	

     	<p>Sign / three parallel lines / Signifying a mountain / pointing to the challenge to achieve the goal / symbolizing featured performer to reach the goal.</p>				
	<p>Font / simple and prominent</p>				
	<p>Black color / comes as a motivation inspiring in the world of sports / luxury products / strong color indicates simplicity / boldness, development and tradition.</p>				
<p>4. The General Interior Character</p>					
<p>Interior Space</p>	<p>Embodied in a unique design of the building of Adidas / both traditional and modern materials were used for texture, furniture, and interior decor / that aim to inspire a simple image of sport, despite using complicated material technology .</p>				
<p>Visual Elements</p>	<table border="1"> <tr> <td> <p>color</p> </td> <td> <p>Used white as leading color / and a little of black color</p> </td> </tr> <tr> <td> <p>Lighting</p> </td> <td> <p>Extensively using natural illumination / using direct artificial lighting of fluorescent tubes in straight lines.</p> </td> </tr> </table>	<p>color</p>	<p>Used white as leading color / and a little of black color</p>	<p>Lighting</p>	<p>Extensively using natural illumination / using direct artificial lighting of fluorescent tubes in straight lines.</p>
<p>color</p>	<p>Used white as leading color / and a little of black color</p>				
<p>Lighting</p>	<p>Extensively using natural illumination / using direct artificial lighting of fluorescent tubes in straight lines.</p>				
<p>Psychological Impact of the Color Used</p>	<p>White color / brightness and cleanliness / good light reflection / purity and motivation / attractive / breaks the sense of boredom in the users / gives a greater degree of contrast when used inside a space /</p> <p>Black color / should be carefully used inside a space / signifies strength and elegance / giving a sense of depth when used inside a space.</p> <p>Using white, with a limited amount of black, is attractive, and comfortable in work environment / these two colors are considered of the classical grades of colors / effects of two achromatic colors to create a sense of balance, harmony and integration.</p>				

    	Physical Elements	Wall	Used bearing walls / non – bearing walls / partitions / glass partition / aluminum and glass wall facade.
		Ceiling	Used non – structural roof
		Floors	Used constructional floors
		Material	Wall: paint is used , glass partition, wood partition, glass façade, aluminum / ceiling: gypsum board is used, paint, glass (skylight), aluminum / floors: marble is used, iron structure is used
	Furnishing and Accessories	Using perforated metal partitions it is possible to hang photographs, drawings and samples. These perforated metal partitions are not only functional, but also create visual effects / using modern technology in the building.	
5. Colors Usage in Physical Elements of the Interior Space			
	Wall	  White Black	
	Ceiling	 White	
	Floors	 White	




	<p>Furnishing And Accessories</p>		
<p>(URL 37)</p>		<p>White</p>	<p>Black</p>



Figure 5.1: Color Graph of Interior Space of Adidas Office

5.2.2 Nike Company

5.2.2.1 Brief Description about the Chosen Example

Nike is one of the examples of commercial spaces, chosen to be analyzed in terms of the place of color in the creation of brand identity. Nike is one of the American multinational companies specialized in manufacturing sports clothing and equipment. It had established its position all over the world as a competing commercial firm with over 100 branches, in the US, GB, France, Turkey, Germany, UAE, Italy... etc. It was established in 1964 under the name of: Blue Ribbon Sports, by Phil Knight, Bill Bowerman. Then it officially became Nike in 1978. Its brand appeared in the international markets, as an important brand in the field of sport equipment industry (URL 38).

In 2008 Nike's showroom in Kuala Lumpur was designed by Ryan Cheah. The main emphasis of that design was to develop the experience of the users by comprehending the identity of the brand space, to make it part of the environment of the interior space of the commercial building. The experience in brand environment was used by projecting light on technology and grandeur, by creating trade brand spaces inside that space. The emphasis on the environment by employing the colors of the brand space is a universal trend, noticed in walls, roofs, and furniture, to form an image in the minds of the users that conveys a sense of loyalty (URL 39).

5.2.2.2 The Color Characteristics

The color as one of the most important impact is evident in mental, psychological, social and function situation of people experiencing the space. As well as the excitement and enjoyment which increase commercial activities there, the colors used in the brand space issues can be variable in terms of hue, value and chroma aspects. So color is the main factor in creating a brand space. By analyzing the shape of brand and color used. The colors used in this specific space example of the Nike in Malaysia is orange.

The orange color used in this example can be defined as warm color and with a long wavelength, as is known orange is a secondary color. In the order of colors orange is considered as an intermediate hue. As the result of blending two basic colors (red and yellow) in the visual spectrum. The specific definition of the orange used is medium saturated and dark shade, chromatic saturation value darkness, a medium degree of purity. Black color is considered as a presumed color, because there is no color in fact, and because of that it does not reflect any light, its neutral color. White is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue. Its achromatic color.

5.2.2.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception for that environment, complementary to product design, advertising, promotion. So it should begin to focus, by designers and architects, on the three-dimensional position in brand space and show the fourth dimension that fits brand identity creation. Through color that strengthens

retail strategies of interior spaces in commercial buildings. This is clearly seen in the building on Nike.

The brand Nike, known by the name Swoosh, which describes the fabrics used in Nike shoes, is represented by a wing of the historically famous statue of Winged Goddess of Victory. The name Nike is used in the sign, which signifies speed and strength in the Greek era. Using a simple and bold line gave the company a striking image (URL 40). Its color of an orange shadow, which is one of the warm colors that can be very clear to the viewers, made the products of the company stronger and assured, especially when viewed at a distance, making them easy to concentrate on. The color orange, which indicates vitality and activity, may render expensive goods seem less costly. Therefore, using orange color with the sign of the wing makes it easy to recognize it as Nike Company.

5.2.2.4 The General Interior Character

Nike of Malaysia defines the main character of the brand space Nike, and offers services for all the needs of the users, as seen by the experience of the brand space. The concept of the design of the shop depends on the identity of the brand space of Nike, as can be noticed on walls, floors, roofs, furniture and accessories, together with developing the plan of retail sales shops in presenting goods, and offering services to customers. The retail sales shops were designed in a simple and fine style with a unique character in the interior space. Marble was used for the walls, with middle glass partitions to present the goods. Some of the walls and furniture were of a curved shape that reflects Nike sign. The extensive use of glass facades creates an atmosphere of transparency between

interior and exterior spaces which makes it more visually effective. Different levels of height were used for the secondary ceilings, which enables recognition of different space limits and distinction of neighboring areas. The use of different kinds of indirect lightings through glass facades allows natural light to go through the interior. In the general design of the showroom the usage of modern technology and splendor allowed ease of movement inside the space. And as mentioned before, the strong effect of the brand space was employed to bring new concepts on the architectural design of the shop.


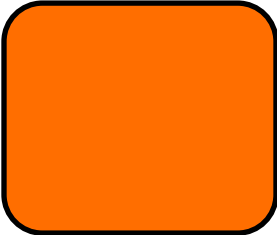
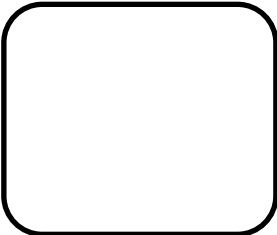
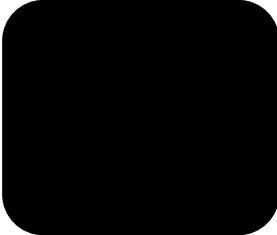
In this respect we notice the prominence of the colors of the brand space in this orange space, where it is used for walls inside the interior space, besides using white for roofs and furniture, and black granite for the floors and part of the walls. The amount of white and black colors is used to create a degree of balance.





It is noticed that Orange is extensively used in all parts of the interior spaces of Nike shop, being the human-being color of the brand space. Orange color combines the physical energy of red and the mental energy of yellow. The designer cleverly employed this color to express sport and energy. It is one of the brightest and warm colors, and signifies optimism and energetic vitality. All of these properties reflect the concept of sport and physical energy.

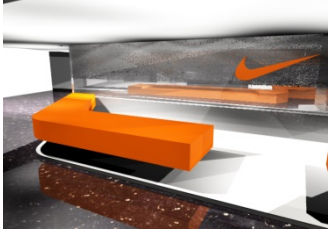

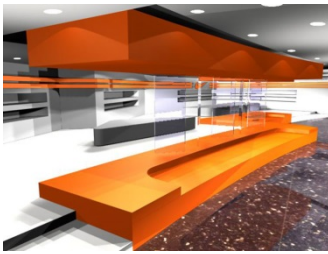
Using orange together with black and white creates the sense of movement and excitation. On the other hand using black and white does not create that, unless combined with one of the warm colors. This kind of harmony promotes energy, and offers a feeling of attraction and excitation. Besides that, black color is a neutral color

that signifies upward development, softness, and power. White color, which gives a neutral effect, is more brilliant when used for walls, furniture and accessories, and makes space look lighter and more spacious. All these harmonious color arrangements reflect the concept of sport, the energy of sport activities, and make it pleasant to be in that space, the matter that promotes commercial activities and increases sales.

Table 5.3: Analysis Example of Nike Showroom

Interior Environment	1. Brief Description about the Chosen Example	
	Name: Nike showroom	
	Location: Kuala Lumpur - Malaysia	
	Designed by: Ryan Cheah	
	Date: 2008	
	Colors Used: Orange, White and Black	
	2. The Color Characteristics	
	Selected Color Indicators	
	Visual Properties Orange Color	Hue Secondary Color
		Value dark shade / darkness
		Chroma medium degree of purity
		Color Qualities Warm Color/ Long Wavelength
	Visual Properties White Color	Hue It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.
		Color Qualities Achromatic Color
	Visual Properties Black Color	Hue Is considered a presumed color, because there is no color in fact, and because of that it does not reflect any light.

		Color Qualities	Neutral color
	3. Brand Identity and Color Relationship		
	Visual of Logo	Sign / Color used – orange	
		Psychological Impact	
		Sign / known by the name Swoosh / is represented by a wing of the historically famous statue of Winged Goddess of Victory / signifies speed and strength in the Greek era /	
		Orange color / can be very clear to the viewers / when viewed at a distance, making them easy to concentrate on / indicates vitality and activity / may render expensive goods seem less costly.	
	4. The Interior Organization		
	Inerior Space	were designed in a simple and fine style with a unique character in the interior space / usage of modern technology and splendor allowed ease of movement inside the space / strong effect of identity of the brand space was employed to bring new concepts on the architectural design.	
	Visual Elements	color	Used orange is extensively used in all parts of the interior spaces / supplemented with a large amount of white color / used the black color

		Lighting	The use of different kinds of indirect lightings through glass facades allows natural light to go through the interior / Artificial lighting
	Psychological Impact of the Color Used	<p>Orange color / Orange color combines the physical energy of red and the mental energy of yellow / employed this color to express sport and energy / signifies optimism and energetic vitality.</p> <p>White color / more brilliant when used for walls / makes space look lighter and more spacious.</p> <p>Black color / signifies upward development / softness / power.</p> <p>Using orange together with black and white creates the sense of movement and excitation / This kind of harmony promotes energy, and offers a feeling of attraction and excitation / make it pleasant to be in that space</p>	
		Physical Elements	Wall
Ceiling	Used non – structural roof		
Floors	Used constructional floors		
Material	Wall used paint , glass partition, marble / ceiling used gypsum Board, paint / floors used marble		

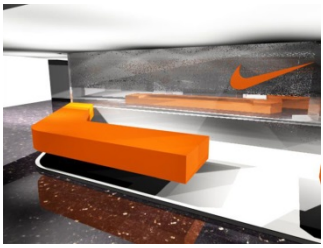
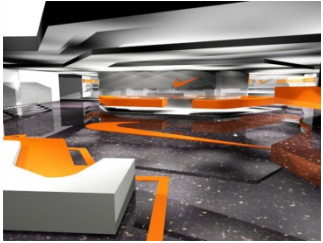












		Furnishing And Accessories	usage of modern technology and splendor allowed ease of movement inside the space / use sophisticated techniques for Showing the goods	
5. Colors Usage in Physical Elements of the Interior Space				
	Wall	 Orange	 White	 Black
	Ceiling	 Orange	 White	
	Floors	 Orange	 White	 Black
(URL 41)	Furnishing And Accessories	 Orange	 Black	



Figure 5.2: Color Graph of Interior Space of Nike Showroom

5.2.3 Mercedes-Benz Company

5.2.3.1 Brief Description about the Chosen Example

Mercedes-Benz Company as one of the examples of commercial firms whose space is chosen to be analyzed in terms of the place of color in the creation of brand identity. Mercedes is a German company specialized in manufacturing luxury cars, buses, trucks, and engines. It is the firm with a name of respectable history in the field of car industry. It had established its position as a company that manufactures cars for heads of states, kings, and high ranking people. It has numerous showrooms in most countries and factories in many states. In 1926 the first cars under the name of Karl-Benz appeared in the markets in 1926 the first car under the brand Karl-Benz. The first car to have the patent of a car powered by petrol was under the name of Daimler AG in 1886. The two firms amalgamated and they acquired the famous brand space of Mercedes Benz (URL 42).

The new building of Mercedes-Benz museum in Stuttgart in Germany, opened in 2006, which was designed by UN Studio. The basic design of the premises reflects the identity of the brand space, where the form of the brand is an integral part of the interior environment, by using circles in the design. The advanced form of the building of the museum combines modern technologies and programming. There are various methods of presentation of the products by using many techniques. Besides traditional ways of presentation here are modern ones, like lifted spaces, and using glass and lighting systems to highlight the cars in the spaces. All the methods are employed to reflect innovations, efficiency, development, and strength used in manufacturing Mercedes

cars. Ultimately, the design aims at asserting loyalty to the brand space of Mercedes, impressing the image in the minds of the users.(URL 43)

5.2.3.2 The Color Characteristics

The color is one of the most important considerations for creating the brand identity with environment in the commercial building. This important impact is evident in mental, psychological, social and function situation of people experiencing the space, as well as the excitement and enjoyment which increase commercial activities there. The colors used in the brand space issues can be variable in terms of hue, value and chroma aspects. Therefore, color is the main factor in creating a brand space. By analyzing the shape of the brand and color used in this specific space example of Mercedes-Benz it is determined as silver and gray.

Silver color, whose name is taken from the name of the metal, is basically a gray color, used to show the reflection of light on metal surfaces. The color gray is of different shades between white and black, which are called neutral colors, or achromatic colors, there is no value.

5.2.3.3 Brand Identity and Color Relationship

The brand is a combination of mood, look that creates a perception that environment, complementary to product design, for advertising and sales promotion. Therefore, it should begin by a focus, by designers and architects, on the three-dimensional position in brand space, and show the fourth dimension that fits brand identity creation through colors that strengthens retail strategies of interior spaces in commercial buildings. This is clearly seen in the museum of Mercedes-Benz. The brand space of Mercedes Benz is

one of the oldest brands in the world, used in the distinguished cars. The tri-heads star is derived from the concept of using the tool from ground, air and sea. The idea belongs to the founder of the company Karl Benz, to make a vehicle with an engine operated by fuel to move on roads, fly in the air, and sail on water, although the company never manufactured planes or ships. This sign is considered most simple and elegant. The name Mercedes was that of the daughter of Emil Jellinek, who was organizing car races for the company, and they added the name Benz which is the name of one of the founders of the company. These names were honoured by many achievements for excellence. The circle that surrounds the star represents the earth. The silver color of the mark is taken from one of the cars that was supposed to take part in the car race, but the organizing team refused it because its weight is more than the limits (URL 44). The color of that car was erased, and the original color of the metal appeared, which was silver. That car achieved good results in the race, and the color silver was adopted for the brand space. Silver color had become the prestige of the brand of the company, inspiring confidence and elegance (URL 44). The color indicates richness, and is related to the color of the moon, which suggests secrecy in nature. The design of that brand granted it the strength to give the users the feeling of confidence, pride, and elegance.

5.2.3.4 The General Interior Character

In its general and interior design, the building of the Mercedes Cars Museum reflects the form and identity of the brand space of the company. The idea is for three concentric circles to inspire infinity. It looks like three clovers leaves crossing each other. The concept of the building design is inspired by the form of its brand. Using modern material for cladding the exterior of the building by glass and aluminum gives the building an atmosphere of transparency between the outside and the interior of the building. It also creates a relation between the beautiful nature in the outside and the interior space of the building, and using these kinds of material gives a sense of weightlessness of the structure. There is an extensive use of natural lighting in the interior of the site, which makes it nature friendly.

In the inside of the building there are large halls, open to each other, to show samples of the cars manufactured by Mercedes Benz along time. Applying the idea of elevated spaces takes the viewer along rising levels to follow the cars samples according to the date of their production. And using different materials from different periods indicates the stages of development of the company, while at the same time using aspects of modern technology in the building to assert the modernity of the building.

The interior space is designed on the basis of open space concept, with different heights for the large exhibition space which are interconnected in a beautiful style by using fixed partitions to present the history of Mercedes Company. Glass walls are used in building these rooms to create a feeling of transparency inside the building. Secondary roofs are


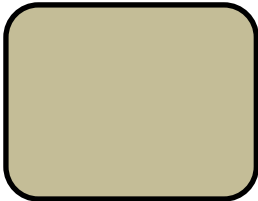

used in different designs as required, with different levels. There are lifts to take visitors to the different levels of the building.





It is noticed that wood and hide were used for the interior decor. Wood was used for the floors and covering certain parts of the walls, to find a relation with nature in the open, and to give the feeling of warmth in the place, its expanse, and feeling nature inside it. Artificial lighting in different colors was used, beautifully distributed in a modern way, side by side with direct natural lighting, directly and indirectly as required by the exhibition space needs. For the floors, different materials were used; as natural marble in graded shades of gray color in most of the parts of the building. Wood floors were used for the places where cars are shown. In other places glass was used with artificial lighting, to create a sense of having the old and the modern in the building design.





Different shades of gray were used in all parts of the interior space. Gray color has psychological connotations. It is a neutral color, composed of white and black, taking its richness from the white, and its softness and attraction from the black, therefore representing a middle place between them. If gray is used in one tone it leads to monotony, so it is preferable to use it in different shades. It is better to use for the background, or next to other colors. Gray color is associated with wisdom and decorum, and also to power, distinction, development and culture. The silver color used in certain parts of the building of the interior decor is a classical color with modern techniques. It represents grandeur, and makes space brighter. Using silver besides other colors gives them brightness and tenderness. It is a shining and beautiful color, reflecting beauty and elegance. As the basis of silver is gray; it is considered a color of achromatic harmony.

It is used extensively, dark gray in corridors, making one feel as if walking is a street. Also using it in different shades on the walls makes them a beautiful background that highlights the cars displayed, making it easy to notice and concentrate on them, which creates a kind of attraction to the colorful display of cars. That brought about a kind of excitement in the place, by making numerous effects by changes in the features of that space, and inspiring different colors used in the space. The colors of lighting change in time and as required to changes in the colors of the space. That makes it possible to feel the effects of form and color of the brand space inside and outside the space, which reflects the effect of the identity of the brand space on the design, ultimately creating excitement and attraction to that space, and enjoyment for the users.

Table 5.4: Analysis Example of Mercedes-Benz Museum

Interior Environment	1. Brief Description about the Chosen Example		
	Name: Mercedes-Benz Museum		
	Location: Stuttgart - Germany		
	Designed by: UN Studio		
	Date: 2006		
	Colors Used: Silver and Gray		
	<p align="center">2. The Color Characteristics</p>		
	Selected Color Indicators		
	Visual Properties Silver Color	Hue	Silver color, whose name is taken from the name of the metal, is basically a gray color, used to show the reflection of light on metal surfaces.
		Color Qualities	Achromatic Color
	Visual Properties Gray Color	Hue	The color gray is of different shades between white and black, which are called neutral colors, therefore no value and it recipe
Color Qualities		Achromatic Color	
	<p align="center">3. Brand Identity and Color Relationship</p>		
	Visual of Logo	Sign / Font / Color used – silver	
		Psychological Impact	

 		<p>Sign / The tri-heads star is derived from the concept of using the tool from ground, air and sea / make a vehicle with an engine operated by fuel to move on roads, fly in the air, and sail on water.</p> <p>The circle that surrounds the star represents the earth.</p>			
		<p>Silver color / had become the prestige of the brand of the company / inspiring confidence and elegance / related to the color of the moon</p>			
<p>4. The General Interior Character</p>					
 	<p>Interior Space</p>	<p>There are various methods of presentation of the products by using many techniques. Besides traditional ways of presentation here are modern ones, like lifted spaces / The idea is for three concentric circles to inspire infinity. The concept of the building design is inspired by the form of its brand.</p>			
	<p>Visual Elements</p>	<table border="1"> <tr> <td style="text-align: center; vertical-align: middle;">color</td> <td>Used gray as leading color and silver color</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">Lighting</td> <td>There is an extensive use of natural lighting in the interior of the site, which makes it nature friendly / Artificial lighting is used directly and indirectly. Different lighting colors were used, beautifully distributed in a modern way.</td> </tr> </table>	color	Used gray as leading color and silver color	Lighting
color	Used gray as leading color and silver color				
Lighting	There is an extensive use of natural lighting in the interior of the site, which makes it nature friendly / Artificial lighting is used directly and indirectly. Different lighting colors were used, beautifully distributed in a modern way.				

	Psychological Impact of the Color Used	<p>Gray color / Different shades of gray were used in all parts of the interior space / composed of white and black, taking its richness from the white, and its softness and attraction from the Black color / If gray is used in one tone, it leads to monotony, so it is preferable to use it in different shades / wisdom and decorum / development and culture.</p> <p>Silver color / classical color with modern techniques / represents grandeur / makes space brighter / Using silver besides other colors gives them brightness and tenderness.</p> <p>Wood / to find a relation with nature in the open, and to give the feeling of warmth in the place, its expanse, and feeling nature inside it.</p> <p>It is better to use the gray for the background, or next to other colors / makes them a beautiful background that highlights the cars displayed, making it easy to notice and concentrate on them, which creates a kind of attraction to the colorful display of cars</p>	
		Wall	Used bearing walls / non – bearing walls / glass partitions / Aluminum and glass wall facade
		Ceiling	Used non – structural roof
		Floors	Used constructional floors / secondary floors
	Physical Elements	Material	Wall: used paint , glass partition, partition, glass façade, aluminum, wood / ceiling: used gypsum board, glass (skylight), paint / floors: used marble and wood




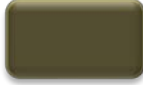

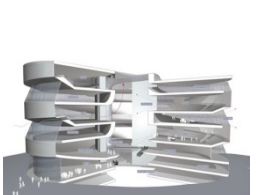
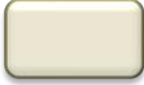
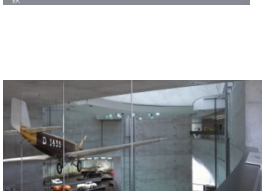
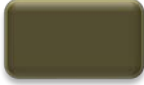



		Furnishing And Accessories	Use of technological equipment required to provide amenities and high standard and quality of furnishing and accessories / data show / TV screen.
5. Colors Usage in Physical Elements of the Interior Space			
	Wall	 Silver	  Gray Wood
	Ceiling	 Gray	
	Floors	 Gray	 Wood
(URL 45)	Furnishing And Accessories	 Gray	 Wood



Figure 5.3: Color Graph of Interior Space of Mercedes-Benz Musuem

5.2.4 Ferrari Company

5.2.4.1 Brief Description about the Chosen Example

Ferrari museum is one of the examples of commercial spaces chosen to be analyzed in terms of the place of color in the creation of brand identity. It's an Italian company, specialized in sport car industry, and considered first companies in the world in the field of sport cars production, making the first sport car allowed to be used in common roads (URL 46). It established its name as a pioneering firm in manufacturing sport cars, and as show rooms in most countries of the world. The company was established in 1929, by Enzo Ferrari, whose name was given to the cars. A brand space was registered in Italy, and became famous in international brand, as an most important brand space in the field of sports cars in the world (URL 46).

The new Ferrari museum in Modena, Italy was inaugurated in 2012, designed by the architect Jan Kaplisky. The overall shape of the building looks like a Ferrari car, with simple references from the identity of the brand space in certain places of the interior design. There are openings in the ceiling of the building, which reflect the shape of the cooling gills in the bonnet that cover the engine of the cars, and the curving image of the façade. To be also noticed is adding to the historical architectural style of the original building, with modern technological features in the second building which was recently added to the original one. It is a building designed to bring in the concept of development, innovation, and streamlining. At then, the building can be considered to be built on the basis of loyalty and attachment to the brand space (URL 47).

5.2.4.2 The Color Characteristics

The color is one of the most important considerations for creating the brand identity with environment in the commercial building. This important impact is evident in mental, psychological, social and function situation of people experiencing the space. As well as the excitement and enjoyment which increase trade activities there, the colors used in the brand space issues can be variable in terms of hue, value and chroma aspects. So color is the main factor in creating a brand space. By analyzing the shape of brand and color used. The colors used in this specific space example of the Ferrari are black, yellow, green, red and white.

Black color is considered as a presumed color, because there is no color in fact, and because of that it does not reflect any light, and is one of the dark colors. Black is darkness, therefore no value and it recipe and is one of achromatic color. The yellow color used in this example can be defined as warm color and with a long wavelength, is one of the primary colors. The specific definition of the yellow used is highly saturated and bright tint. Chromatic saturation value is brightness, a high degree of purity. The green color used in this example can be defined as cold colors and with a medium wavelength, is one of the secondary colors. In Munsell color system the green color is one of the principle hues. The specific definition of the green used is low saturation and low tone, chromatic saturation value tone, a low degree of purity. The red color used in this example can be defined as warm color and with a medium wavelength, in Munsell color system is one of the principle colors. The specific definition of the red used is intermediate saturated and bright tint. Chromatic saturation value Brightness, an intermediate degree of purity.

It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue. Its one of achromatic color.

5.2.4.3 Brand Identity and Color Relationship

This one of the most famous brand space in the field of sports cars industry. It takes the horse as a symbol, to commemorate one of the pilots who died in the First World War, and used to draw a horse on the wing of his aircraft. Looking at a jumping horse inspires the feeling of speed, and signifies authority and good luck to the people in a race. Black color was chosen for the horse, and elegantly put inside a yellow rectangular form. At the top of the rectangle they put the three colors of green, red, and white, which are the colors of the Italian flag, and the name Ferrari is inscribed bellow, in a simple and elegant way (URL 48).

The many colors of the brand space signify the many usages of the cars. It is the first sports car allowed to be used on the public roads. The black color in the brand symbolizes the strength of the sports car, used in some brand space as a neutral and serious color. The yellow color occupies a larger space in the brand. This yellow hue makes the brand conspicuous at a distance. The color yellow is one of the most brilliant in brand. It is an energetic color, merry, and youthful. Using yellow as a background for black makes the shape of the brand clearer. This harmonious way in using and distributing the colors creates the element of balance between cold and warm colors, together with using neutral colors with them. That is more comfortable for the viewer, and draws the attention to this brand.

5.2.4.4 The General Interior Character

The building of the Ferrari car museum inspires the form of a Ferrari car, with simple touches from the brand space in the design of the general building, and the interior design of the premises. The concept of the design is to model the edifice on the shape of Ferrari cars, in the details of the overall form and the interior décor. The museum comprises two buildings: the first belongs to the nineteenth century, which is the original building where Ferrari put his workshop, and was later renovated (URL 46), and the second building that is recently erected, using modern materials in building it. It can be noticed that the glass façade covers the building in the shape of curves, and an aluminum ceiling with slots which are cooling vents, and the interior lightings of the interior space of the building that resemble air slots on the engine cover of the car.

Entry to the building is through a sloping passage that leads to the lower level, which is the main showroom of Ferrari cars. This building combines modern construction materials and technology, with means saving energy. In the interior décor of the gentle curves, ventilation slots in Ferrari cars are symbolized. Besides removing recent additions to the building, its general shape was conserved, and so were the original wooden ceilings, as a kind of respect to the history of the edifice. Modern means of air conditioning and lighting were used, and means of exhibiting the history of the company.

The second building was designed on the principle of providing the maximum amount of transparency in the façade, multiple windows to create a suitable atmosphere, and using cooling and floor heating technology, as well as modern lightings and water

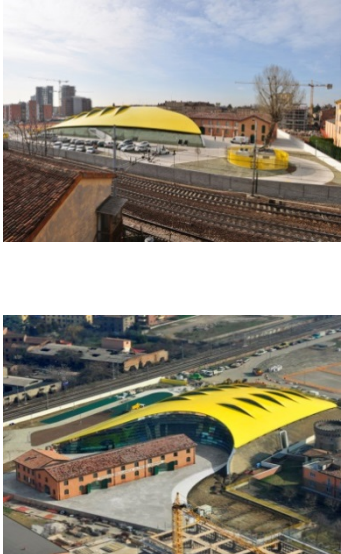

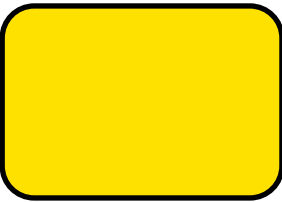

recirculating means. The area for cars exhibition can be seen by means of using open space style. The building contains a library and a cafeteria for the convenience of the visitors.





The way of exhibiting the cars is by using an elevated platform to enable looking at the exhibits from different angles; digital projections and tables of information. There is an design concept in building curving walls in the interior décor in the form of ventilation slots of a car, like a large size book in which visitors can read the history of the company, just like turning book pages, reading every chapter in an exciting sequence. The building is environment friendly in using modern technological means in the design. Marble is widely used for the floors, with natural means of lighting through wide glass facades and large windows, in addition to artificial lighting by suspended lights, or wall mounted ones. Glass accessories are used to exhibit the collections and history of the company.





The color white is extensively used in the building, for floors, ceilings and walls, with simple touches of yellow. White has a psychological effect on people, inspiring a sense of cleanliness. It is related to light, purity, and quality. It can be used with many colors, where it makes them prominent. It is useful in diverting the attention towards the Ferrari cars exhibited in the place, which are known by their many colors. This color shines well with attraction and brilliance, and is useful for breaking boredom inside a space. The color yellow inspires warmth and activity, and is related to power and wealth. It is a good inciter for activities, and attractive. It is used sparingly in interior spaces, to avoid nervousness. That is why it should be used in small quantities in a space. We can notice

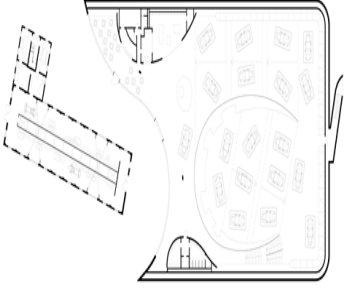





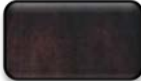
a harmony in this space, by using yellow that creates joy and optimism with a neutral color like white. This harmony creates movement and activity in this space, eventually creating a kind of attraction and pleasure in the users of this space.

Table 5.5: Analysis Example of Ferrari Museum

Interior Environment	1. Brief Description about the Chosen Example		
   	Name: Ferrari museum		
	Location: Modena - Italy		
	Designed by: Jan Kaplisky		
	Date: 2012		
	Colors Used: Black, Yellow, Green, Red and White		
	2. The Color Characteristics		
	Selected Color Indicators		
	Visual Properties Black Color	Hue	Is considered a presumed color, because there is no color in fact, and because of that it does not reflect any light.
		Color Qualities	Neutral Color
	Visual Properties Yellow Color	Hue	Primary Colors
Value		Brightness / Bright tint	
Chroma		High Purity	
Color Qualities		Warm Color / medium wavelength	
Visual Properties Green Color	Hue	Secondary Colors	
	Value	low tone	
	Chroma	low degree of purity	
	Color Qualities	Cold Colors / Medium Wavelength	

	Visual Properties Red Color	Hue	Principle Colors
		Value	Brightness / Bright tint
	Visual Properties White Color	Chroma	Intermediate degree of purity
		Color Qualities	Warm Color / Long Wavelength
	Visual Properties White Color	Hue	It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.
		Color Qualities	Achromatic Color
3. Brand Identity and Color Relationship			
Visual of Logo	Imag / Font / Colors used – Black, Yellow, Green, Red and White		
	Psychological Impact		
	Image jumping horse / inspires the feeling of speed, and signifies authority and good luck to the people in a race. Name Ferrari / is inscribed below, in a simple and elegant way.		
top of the rectangle they put the three colors of green, red, and white, which are the colors of the Italian flag. Black Color / symbolizes the strength of the sports car, used in some brand space as a neutral and serious color. Yellow Color / occupies a larger space in the brand / conspicuous at a distance / energetic color / youthful. many colors of the brand space signify the many usages of the cars			
			

	<h4>4. The General Interior Character</h4>					
	<p>Interior Space</p>	<p>The overall shape of the building looks like a Ferrari car / openings in the ceiling of the building, which reflect the shape of the cooling gills in the bonnet that cover the engine of the cars / adding the historical architectural style of the original building, with modern technological features in the second building which was recently added to the original one / It is a building designed to bring in the concept of development, innovation, and streamlining.</p>				
	<p>Visual Elements</p>	<table border="1"> <tr> <td data-bbox="911 829 1094 951"> <p>Color</p> </td> <td data-bbox="1094 829 1448 951"> <p>Used white as color leading / a little used yellow color</p> </td> </tr> <tr> <td data-bbox="911 951 1094 1140"> <p>Lighting</p> </td> <td data-bbox="1094 951 1448 1140"> <p>Used natural lighting and artificial lighting is used directly, it used together in interior space</p> </td> </tr> </table>	<p>Color</p>	<p>Used white as color leading / a little used yellow color</p>	<p>Lighting</p>	<p>Used natural lighting and artificial lighting is used directly, it used together in interior space</p>
<p>Color</p>	<p>Used white as color leading / a little used yellow color</p>					
<p>Lighting</p>	<p>Used natural lighting and artificial lighting is used directly, it used together in interior space</p>					
	<p>Psychological Impact of the Color Used</p>	<p>White color / extensively used in the building / inspiring a sense of cleanliness / related to light / purity, and quality / It can be used with many colors, where it makes them prominent / useful for breaking boredom inside a space.</p> <p>Yellow color / warmth and activity / is related to power and wealth / inciter for activities / attractive.</p> <p>We can notice a harmony in this space, by using yellow that creates joy and optimism with a neutral color like white. This harmony creates movement and activity in this space, eventually creating a kind of attraction and pleasure in the users of this space.</p>				

  	Physical Elements	Wall	Used bearing walls / non-bearing walls / glass wall / partitions
		Ceiling	Used constructional floors / non – construction
		Floors	Used constructional floors
		Material	Wall: used paint , glass partition, partition, glass façade, aluminum / ceiling: gypsum board used, paint, glass (skylight), aluminum / wood. Floors: marble used,
		Furnishing And Accessories	The building contains a library and a cafeteria for the convenience of the visitors / using an elevated platform to enable looking at the exhibits from different angles / digital projections and tables of information / The building is environment friendly in using modern technological means in the design
5. Colors Usage in Physical Elements of the Interior Space			
Wall	  White Yellow		
Ceiling	  White Black		





 <p>www.</p>	<p>Floors</p>	 <p>White</p>
 <p>(URL 47)</p>	<p>Furnishing And Accessories</p>	 <p>White</p>



Figure 5.4: Color Graph of Interior Space of Ferrari Museum

5.2.5 Google Company

5.2.5.1 Brief Description about the Chosen Example

Google center as one of the examples of commercial space chosen to be analyzed in terms of the place of color in the creation of brand identity. It is one of the companies that provide internet and programming services (like electronic internet research works, electronic messages, advertisements, and all kinds of programs on the internet and world wide social interaction like USA, GB, France ...etc). It was established in 1997 by Sergi Brin and Larry page. Initially it was called Black Rub, and in 1998 its name became Google, as an important American and international brand space, involved in electronic online research activities (URL 49).

In 2009 Google inaugurated a new center in Cairo, Egypt, designed by Mohamed Radwan. The building was designed on the idea of creating a new concept that offers a private space for customer companies. It was an important purpose for Google to show a colorful atmosphere that reflects the culture of Google. It was also necessary to make it very enjoyable to customers, by making the brand space able to build a sentimental and loyal tradition. That was evident in the design by using the basic colors of the brand in the interior space of the building: on the walls, the floors, the ceilings, and the furniture (URL 50).

5.2.5.2 The Color Characteristics

Color is one of the important elements in creating a brand space that is in harmony with the environment inside a commercial building. This is evident by its psychological, social, and functional effect, besides the excitation and attraction that enhance the market activities. The colors used in a brand space vary in their hue, value, and chroma, through the analysis of the form and color of the brand space used.

The blue color used in this example can be defined as cold colors and with a short wavelength, in Munsell color system is one of the primary colors. The specific definition of the blue used is highly saturation and bright tint. Chromatic saturation value brightness, a high degree of purity. The red color used in this example can be defined as warm color and with a long wavelength, in Munsell color system is one of the primary colors. The specific definition of the red used is highly saturated and bright tint. Chromatic saturation value Brightness, a high degree of purity. The yellow color used in this example can be defined as warm color and with a medium wavelength, is one of the primary colors. The specific definition of the yellow used is highly saturated and bright tint. Chromatic saturation value Brightness, a high degree of purity. The green color used in this example can be defined as cold colors and with a medium wavelength, is one of the secondary colors. In Munsell color system the green color is one of the principle hues. The specific definition of the green used is highly saturation and light tint. Chromatic saturation value tint, a high degree of purity. White is the color the human eye sees when it looks at light which contains all the wavelengths of the visible

spectrum, at full brightness and without absorption. It does not have any hue. It's one of achromatic color.

5.2.5.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception that environment, complementary to product design, advertising, promotion. So it should be began to focus, by designers and architects, on the three-dimensional position in brand space and show the fourth dimension that fits brand identity creation through color that strengthens retail strategies of interior spaces in commercial buildings. This is clearly seen in the office on Google Inc.

The term Google was used as the name of the search engine, which is derived from the term googol, which is a mathematical term for the digit 1 followed by 100 zeroes (URL 51). By this term Google passed their message that there will be unlimited amount of information in the net. The brand Google comprises four colors, opting on not using one or two colors only. Using different colors means that it can contain that huge amount of different applications in the net. Using the contrast between warm and cold colors creates an increasing amount of positive feeling for attraction. The colors used follow the rule of fourth colors harmony within integral harmonies, which produces an element of balance between warm and cold colors in the environment. Besides that, Google keeps introducing simple modifications to its slogan without changing its basic form, especially in certain occasions like Christmas, Earth Day, Teachers Day ...etc.

5.2.5.4 The General Interior Character




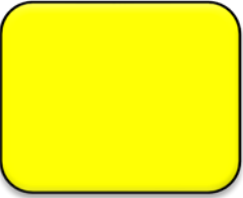
The Google office in Cairo is the environment of brand space that enhances the image of Google Company, which is the property of all Google office around the world. Because of its bright color image, and its joyous atmosphere it has adopted an inspiring simple design when browsing through the web, to make it a pleasure to move from the real world to the electronic domain. The formal space is where all working stations, meetings rooms, and private offices, are where all users are placed. There are also rooms for informal work, in addition to a beautiful open veranda. There are different colors that give certain feelings of individuality, as represented by offering many choices towards a hypothetical world. It is also designed as an open working space as reflected by the brand image that says: Google, we are the youth, and vitality, and what an emotional work we are doing. The interior design of Google is an environment friendly concept, offering people the opportunity to spend long hours at work. The interior design is far from being a luxurious atmosphere, but a good service place supported by environment friendly space.






It is also noticed that the colors used in this commercial space are derived from the colors of the brand space Google which are red, blue, green and yellow, with white as the neutral color. Woodwork and parquet floors were used, as wood is the element associated with warmth and tranquility. In the interior design open space, moveable partitions and fixed glass partitions were also used. Space was divided into geometrical forms, and the symbol could be noticed on the roofs and walls, to make the viewer live with Google. Natural lighting is used through glass facades and large windows.

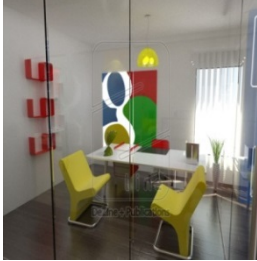
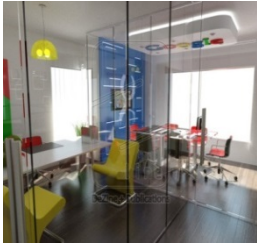


Artificial lighting is also used directly. Comfortable and simple furniture were used for users, besides using modern technology inside the building.

Colors were distributed in the building in a beautiful and comfortable manner for the benefit of the users; red color was faced by green on the walls, and lighting was directed on the red color to attenuate its effects on the users. On the roofs, floors, and furniture white color is chosen, and yellow was used for the accessories. That way, color contrast between two opposing colors was adopted, the red and the green, which represents a balance between warm and cold colors, together with a neutral color to reduce the strong effect of this contrast on the users inside the space. Red color, considered a warm color, gives the effect of warmth and activity and is used in the inside to create a feeling of liveliness and energy. Green color, on the other hand, which is a cold color, gives the feeling of freshness and life, being a symbol of nature, and creates a balance inside the space. Using white color in floors reflects smoothness and brightness. Used in furniture it also creates a degree of balance in the space. Using blue color on walls of the offices brings in creativity, quiet, and relaxation, with touches of red used for the furniture. Yellow color is used as a secondary color element, or in the accessories and furniture, because using too much of it is likely to excite the neural system; that is why it is advised to use it sparingly, especially in offices, as it helps in concentration, and it is used with other colors as a pacifying element. The application of harmony between complementary colors and distributing them in a harmonious manner creates simplicity and quiet. Color distribution inside a space in this way leads to the feeling of attraction and enjoyment, which will enhance commercial activities. When you enter into this kind of space you will have the feeling of being inside Google.

Table 5.6: Analysis Example of Google Office

Interior Environment	1. Brief Description about the Chosen Example		
   	Name: Google Office		
	Location: Cairo - Egypt		
	Designed by: Mohamed Radwan		
	Date: 2009		
	Colors Used: Blue, Red, Yellow, Green and white		
	2. The Colors Characteristics		
	Selected Color Indicators		
	Visual Properties Blue Color	Hue	Primary Color
		Value	Brightness / Bright tint
		Chroma	High Purity
Color Qualities		Cold Color / Short Wavelength	
Visual Properties Red Color	Hue	Primary Color	
	Value	Brightness / Bright tint	
	Chroma	High Purity	
	Color Qualities	Warm Color / Long Wavelength	
Visual Properties Yellow Color	Hue	Primary Color	
	Value	Brightness / Bright tint	
	Chroma	High Purity	
	Color Qualities	Warm Color / Long Wavelength	

	Visual Properties Green Color	Hue	Secondary Colors
		Value	Light Tint
Chroma		Purity	
Color Qualities		Cold Colors / Medium Wavelength	
	Visual Properties White Color	Hue	It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.
		Color Qualities	Achromatic Color
3. Brand Identity and Color Relationship			
  	Visual of Logo	Font / Colors used – Blue, Red, Yellow and Green	Psychological Impact
		The term Google was used as the name of the search engine, which is derived from the term googol, which is a mathematical term for the digit 1 followed by 100 zeroes.	The brand comprises four colors / Using different colors means that it can contain that huge amount of different applications in the net / Using the contrast between warm and cold colors creates an increasing amount of positive feeling for attraction.
		4. The General Interior Character	
		Interior Space	The building was designed on the idea of creating a new concept that offers a private space for customer companies / It was an important purpose for Google to show a colorful atmosphere that reflects the culture of Google / luxurious atmosphere.

	Visual Elements	color	Used white as leading color / Red color / Blue color / Green color / a little amount of yellow
		Lighting	Used natural lighting and artificial lighting they are used directly, it used together in interior space.
  	Psychological Impact of the Color Used	<p>Red color / gives the effect of warmth and activity / feeling of liveliness and energy.</p> <p>Green color / gives the feeling of freshness and life / being a symbol of nature / creates a balance inside the space.</p> <p>White color / reflects smoothness and brightness / Used in furniture it also creates a degree of balance inside the space.</p> <p>Blue color / offices brings in creativity / quiet / relaxation.</p> <p>Yellow color / using too much of it is likely to excite the neural system / as it helps in concentration / used with other colors as a pacifying element.</p> <p>Wood is the element associated with warmth and tranquility.</p> <p>Harmony between complementary colors and distributing them in a harmonious manner creates simplicity and quiet.</p> <p>Color distribution inside a space in this way leads to the feeling of attraction and enjoyment.</p> <p>Represents a balance between warm and cold colors, together with a neutral color to reduce the strong effect of this contrast on the users inside the space.</p>	


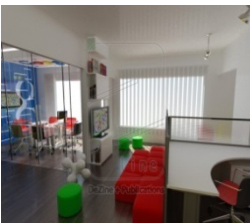
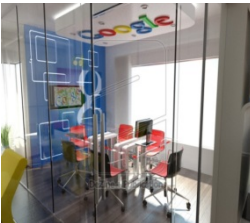
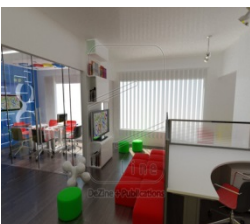

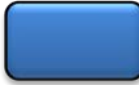








    <p>(URL 50)</p>	Physical Elements	Wall	Used bearing walls / partitions
		Ceiling	Used structural ceiling
		Floors	Used constructional floors / secondary floors
		Material	Wall: used paint , glass partition, glass facade / aluminum partition. ceiling: used paint / gypsum board floors: marble used and wood
		Furnishing	Comfortable and simple furniture were used for users, besides using modern technology inside the building / TV screen
5. Colors Usage in Physical Elements of the Interior Space			
Wall	   Red Blue White		
Ceiling	 White		
Floors	  White Wood/Parquet		
Furnishing And Accessories	   Red Yellow Green  White		



Figure 5.5: Color Graph of Interior Space of Google Office

5.2.6 Vodafone Company

5.2.6.1 Brief Description about the Chosen Example

Vodafone as one of the examples of commercial space chosen to be analyzed in terms of the place of color in the creation of brand identity. Vodafone is one of the British multinational companies specialized in providing mobile phones services. It offers its services in more than forty countries, like Great Britain, Finland, New Zealand, Italy, Egypt, UAE, Australia...etc. It was established in 1982 by an amalgamation of two companies under the name of Racal Vodafone. In 1992 it became Vodafone, and a new important brand space appeared in the markets for the company that provides mobile Phones services (URL 52).

In July 2009 Vodafone opened a retail sales shop in Qatar, designed by Fitch Design Company. The main emphasis in the design was to develop the experience of the service at a universal scope, understanding the identity of the brand space by bringing it out to the retail sales space. It is a kind of employing experiences of brand environment by super technology. There were rich and colorful expositions by Qatar Vodafone, using digital media, to extend these special properties to the customers, and creating brand spaces inside that space. The emphasis on the environment of the brand space was achieved by using its colors in the interior spaces of the building, which is a comprehensive style noticed in walls, roofs, and furniture (URL 53). To form the image of the brand which inspires a feeling of close relationship with the customers.

5.2.6.2 The Color Characteristics

Color is considered one of the means for creating a brand space inside its environment in a commercial building. This effect is clear on the psychological, social, mental, and professional attitudes of the users in that space, in addition to the attraction and excitement that promote commercial activities in the space. Because that color is a principle element in creating the proper space of a brand space, it is noticed here that the colors used are red and white.

The red color used here is one of the warm colors with long wave length, and is one of the principle hues, according to Munsell system. The kind of red color used is that of high purity and brightness value. It is one of the monochromatic harmony colors. White is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue. A neutral color in the color wheel.

5.2.6.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception that environment, complementary to product design, advertising, promotion. So it should be began to focus, by designers and architects, on the three-dimensional position in brand space that fits brand identity creation through color that strengthens retail strategies of interior spaces in commercial buildings. This is clearly seen in the building on Vodafone. Vodafone people know very well how to promote their products, having a strong brand space, simply designed as an active symbol. The original brand was of a form of a SIM Card in red, with the name of the company inside it. Later on the form of the SIM card

was cancelled, which added more strength to the brand space, and the new image became a sign of quotation inside a circle with the name of the company in red and white (URL 54). From the psychological sight effect it creates a feeling of attraction. The sign of the brand space refers to vocal connections and conversation, as it represents that famous brand of communications, portraying its message by means of an elegantly drawn sign. Vodafone symbol uses custom typeface, specially designed for them, with the sign inside it that means the beginning and the end of writing. The circle sign means global circulation.

Using red color, which is a very clear color, tends to make things larger and more significant, easy to concentrate on. It creates a feeling of attraction and causes people to exaggerate estimation of time. Red color in the modern Vodafone symbol represents sentiment and sound. The white color is a neutral color and using it in the design of the symbol enriches its image, and makes it easy to read next to an exciting color like red. White also has the ability of reducing the strong effect of any color next to it, especially with warm colors. This property is important for the recognition of brand space.

5.2.6.4 The General Interior Character

Vodafone center in Qatar defines the basic character of the brand space of Vodafone, while providing all services for its customers, as signified by the experience with the brand space, by emphasizing the concept of common space. Retail sales shops are developed to present their products, and providing an atmosphere for consultations. These retail sales shops were planned in an attractive manner regarding their interior design, including curving walls and glass facades. Vodafone is keen to bring in new

architectural concepts that follow the vital values of their brand space. The basic design idea in the design is the central point that makes walls, floors, and roofs attract customers towards the center of the place. The same concept is used in the artificial direct and linear lighting order that guides towards the center point. Smooth interior furniture's where store working spaces are concealed to make sure there is no reduction in the flow towards central starting point that ignite it all, this includes the ingenious magnetic modular wall bays that reside on both sides. Design language based on angles to bring the starting point that ignites all back to life in the space, the use of premium mirror finishes as extra to lure regional consumers to communicate with the energy and vitality of Vodafone personality.

Breaking with convention, space doesn't give much consideration to handsets anymore; the main idea is for the consumers to acquire the whole package from Vodafone products rather than focusing on luring them with the latest upgrades. Spark effect addition to the space can enhance the overall general look of the space through careful placement on lighting units reflecting off reflective surfaces.




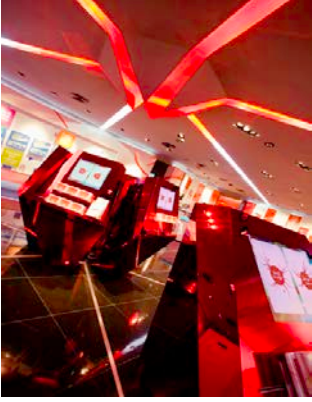
The colors used in the interior space are dominated by the colors of the brand space of Vodafone, red and white, with black floors. The red color strongly imposes itself, to be augmented by a large amount of white color. This color choice realizes balance inside the space. The color specialist A. Halse (1978) stated that the choice of one color with White does not provide excitement and movement, unless these colors are identified with a warm color family.




Colors have a psychological effect on the feelings of the users. They feel comfortable about the size of the interior space, and what relation is there with the choice of colors used. As the focus of interior architecture is to characterize the varieties of surfaces defining any space, color is a very important element employed to separate the design elements by varying values and differences. The colors used of spatial boundaries of this Vodafone Inc. are psychologically, functional impact on the eye to generate the case of positive feeling within the space.

It is noticed that color distribution is beautiful and comfortable to users, where red is used with white for the walls, furniture, and accessories. The color red is also used in graded shades within the space, to give a kind of monochromic harmony. The red color helps in attracting customers, thus it is used in commercial spaces. It gives the feeling of vitality, energy, and life in the space. White color inspires purity, truth, comfort, and quality. It is used in some spaces in variable sizes. Using black in floors gives the feeling of depth and elegance. It should be carefully used in space and in a limited amount. Red color is not suitable medium for tranquility, therefore, with color should be used with it to make it less exciting and quieter. Using these two colors in a harmonious form is likely to bring in attraction and enjoyment for the customers, ultimately to enhance commercial activities. It also emphasizes the character of the brand space inside the space, making it relevant to Vodafone.

Table 5.7: Analysis Example of Vodafone Store

Interior Environment	1. Brief Description about the Chosen Example		
	Name: Vodafone Store		
	Location : Qatar		
	Designed by: Fitch Design Company		
	Date: July - 2009		
	Colors Used: Red and White		
	2. The Color Characteristics		
	Selected Color Indicators		
	Visual Properties Red Color	Hue	Primary Color
		Value	Tone
		Chroma	Low Purity
		Color Qualities	Warm Color / Long Wavelength
	Visual Properties White Color	Hue	It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.
Color Qualities		Achromatic Color	

  	3. Brand Identity and Color Relationship	
	Visual of Logo	Sign / Font / Colors used – Red and White
		Psychological Impact
		added more strength to the brand space, and the new image became a sign of quotation inside a circle with the name of the company in red and white / The sign of the brand refers to vocal connections and conversation / means the beginning and the end of writing.
	Red color / is a very clear color / tends to make things larger and more significant / Red color in the modern Vodafone symbol represents sentiment and sound. White color / the symbol enriches its image / makes it easy to read next to an exciting color like red .	
	4. The General Interior Character	
	Interior Space	The main emphasis in the design was to develop the experience of the service at a universal scope / It is a kind of employing experiences of brand environment by super technology / using digital media, to extend these special properties to the customers, and creating brand spaces inside that space / The basic design idea in the design is the central point that makes walls, floors, and roofs attract customers towards the store of the place
	Visual Elements	color
Lighting		Used natural lighting and artificial lighting together in interior space / The same concept is used in the artificial direct and linear lighting order that guides towards the centre point.

  	Psychological Impact of the Color Used	<p>Red color / used in graded shades within the space, to give a kind of monochromic harmony / helps in attracting customers / It gives the feeling of vitality, energy, and life in the space.</p> <p>White color / inspires purity, truth, comfort, and quality / It is used in some spaces in variable sizes.</p> <p>Black color / gives the feeling of depth and elegance.</p> <p>Red color is not suitable medium for tranquility, therefore, with color should be used with it to make it less exciting and quieter. Using these two colors in a harmonious form is likely to bring in attraction and enjoyment for the customers.</p>
Physical Elements	Wall	Used bearing walls / glass wall
Ceiling	Used non – structural ceiling	
Floors	Used constructional floors / secondary floors	
Material	Wall: paint used , glass / ceiling: gypsum board used, paint / floors: marble used	
Furnishing and Accessories	Smooth interior furniture's where store working spaces are concealed to make sure there is no reduction in the flow towards central starting point that ignite it / brand environment by super technology	









  <p>(URL 53)</p>	5. Colors Usage in Physical Elements of the Interior Space	
	Wall	  <p>Red White</p>
	Ceiling	 <p>White</p>
	Floors	 <p>Black</p>
	Furnishing	  <p>Red White</p>



Figure 5.6: Color Graph of Interior Space of Vodafone Store

5.2.7 ING BANK

5.2.7.1 Brief Description about the Chosen Example

ING Bank as one of the examples of commercial space chosen to be analyzed in terms of the place of color in the creation of brand identity. It is an international company that provides insurance and financial services in more than fifty countries, such as (Netherlands, Poland, USA, France, UK, Turkey and Northern Cyprus). Founded in 1991 after the union between National Insurance Company and National Bank in Netherlands, it appeared to Netherland's market is a global brand. Brand spacing is an important issue in the field of banking (URL 55).

The ING Bank opened a new office in Warsaw-Poland in April 2012, designed by Robert Majkut Design. The building was design of the concept creating a new, impersonal space for corporate customers sector, which is a very important factor for the bank. Providing private banking services, as a specific way to build approaching links between the bank and the customer, as an understanding of the brand identity from outside, required a special approach in terms of design. This shows that consumer service area, which leaves a lot to be desired, is the area of cooperation with corporate clients (URL 56). On the basis of the possible formation of a brand image that involves aspects of relationships or emotions and loyalty. The use of primary colors of the brand in the interior space of the building is holistic approach; that is to say on the walls, floors, ceilings, furniture, and carpet.

5.2.7.2 The Color Characteristics

This important color impact is evident in mental, psychological, social and function situation of people experiencing the space. As well as the excitement and enjoyment which increase commercial activities there, the colors used in the brand space issues can be variable in terms of hue, value and chroma aspects. So color is the main factor in creating a brand space. By analyzing the shape of brand space and color used. The colors used in this specific space example of the ING Bank we are blue, orange and white.

The blue color used in this example can be defined as cold colors and with a short wavelength, is one of the complementary colors. The specific definition of the blue used is highly saturation and dark shade. Chromatic saturation value darkness, a high degree of purity. The blue color used in this example can be defined as cold colors and with a short wavelength, in Munsell color system is one of the primary colors. The specific definition of the blue used is highly saturation and bright tint. Chromatic saturation value brightness, a high degree of purity. The orange color used in this example can be defined as warm color and with a long wavelength. As is known orange a secondary color. As the result of blending two basic colors (red and yellow) in the visual spectrum. The specific definition of the orange used is highly saturated and bright tint. Chromatic saturation value Brightness, a high degree of purity. White is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue. It is one of achromatic color.

5.2.7.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception that environment, complementary to product design, advertising, promotion. So it should be began to focus, by designers and architects, on the three-dimensional position in brand space and show the fourth dimension that fits brand identity creation through color that strengthens retail strategies of interior spaces in commercial buildings. This is clearly seen in the building on ING Bank.

The use of font and images in the logo of ING Bank, that image represents the lion orange color; both represent a national icon in the Netherlands. The font derived from the names of the companies combined with each, and the color blue is also a national symbol (URL 57). Either from the psychological, psychology and functional impact on the eye to generate if you feel emotion to attract attention. Considered as a lion is in the brand a source of strength and safety, the orange color used is from a family of warm colors that are more visual, make things look bigger and closer. Also used for the color orange in the banking business in the Netherlands successfully in all over the world (URL 56). Also combines brightness and joy of yellow with energy and boldness of red, excitement and attraction.

The font represents the combined of companies, now representing afford prescription brand confidence, safety and profitabili

ty. The color blue is from the family of cold colors seemed less obvious and tends to make things look smaller and farther, it is not easy to focus on. Blue is the most popular choice for the colors used in the brand space. Blue as stated earlier, give a character to space trustworthy, reliable, makes you feel secure, responsibility, progress, trust. These characteristics are important in terms of brands. The use of contrast for chromatically of colors as warm and cold is considered opposites depending on the colors complementary aspects. This is one of the richer color projects and contrast contained to warm and cold colors, check contrast and tight attention also in increasing positive feeling about the excitement and attractions. So the brand space of ING Bank took into worldwide when deliberately lion with orange by eye translate directly the brain as ING Bank together with the blue, as its contrasting color.

5.2.7.4 The General Interior Character

High requirements regarding the level of service and sensitivity to how to build relationship between people and the environment. Is achieved by the interior design of this chosen

example use of technological equipment required to provide amenities and a high standard of furnishing, have continue from here confirmed not only a distinctive way to build brand image in the interior space, but also the quality of given services.

Kind of visual translucent screens show entrances and hallways and doors and customers in the entire interior. Curving wall surfaces give the effect of free-flow performance of the taste. The same rule created the task island, which makes

it kind of landing at the reception, and roofing of snowflakes that specially designed as outstanding, transparent forms to which lighting is integrated. Interior colors that dominate the ING brand colors are orange, blue with the addition of white. Using these colors more densely in this brand than the other branches of the ING Bank. Where the imposition of the same orange color leading, supplemented with a large amount of white and few of. The blue color visible mainly in the carpet and furniture in the social infrastructure, breaking vital warm climate, thus achieving balance, makes it quieter.


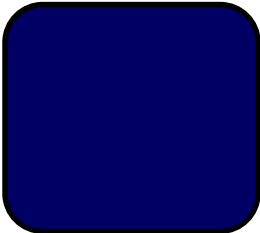
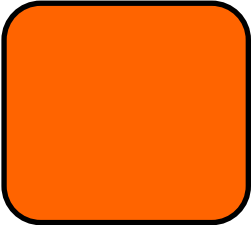
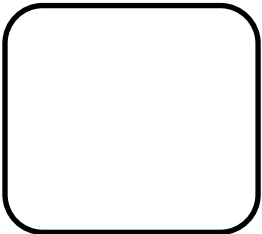
The is a choice of colors with white. A color scientist A. Halse states, the choice of two colors with White do not provide excitement and movement unless these colors are identified with a warm color family. Colors significantly affect the feelings of the users. Comfort psyche and sense of interior space are all closely related with color choices. The use of complementary colors have a significant impact on physiology where the eye nerves movement to topple the colors leads to retinal movement refreshed through which the viewer feels joy, fun and attractions. As the focus of interior architecture is to characterize the varieties of surfaces defining any vacuum, color is a very important element employed to separate the design elements by varying values and differences. The colors used of spatial boundaries of this ING Bank are psychologically, functional impact on the eye to generate the case of positive feeling within the space, the orange color used frequently indicates that color Inductor movement gives a sense of comfort and contributes to the increase of state fun. Orange gives a sense of warmth to the







space from the family of warm colors and contribute to increased activity and may cause tension for some preferred to use color complementary to it when used in interior spaces.





Blue color is the best to inspire calmness and quiet, and has an effect opposite to that of the red color. Blue color can be in various degrees of intensity, and gives a feeling of cool, being one of the cool colors, reduces blood pressure and anxiety, and so it is the first in offering a feeling of relaxation. It reflects the color of the sky and the ocean; it also makes one feel rather close to the place, which may be beneficial to its owners, under the effect of its short wave length, when received by the eyes and analyzed by the brain, creating a sense of psychological pleasure.

White and gray are of the neutral colors, signifying purity and quiet when used in interior spaces, creating a sense of quiet, especially when a pure tint is used. They also offer a sense of interior spaciousness when used in walls and floors. By reflecting light and brightness they are likely to make a space look larger. When choosing colors it is necessary to consider the matter of maintaining a feeling of concentration by the users, avoiding boredom, which can be achieved by using white on the roofs and walls, to reduce visual strain. When used a complement color gives you a feeling of excitement and attraction, it a plan of comprehensive tints has a pleasant psychological effect, giving a sense of delight and pleasure. It reflects an aesthetic value that makes people feel happy, entertained, and attracted, besides expressing a feeling of contrast and attention to the surroundings.

Table 5.8: Analysis Example of ING Bank

Interior Environment	1. Brief Description about the Chosen Example		
   	Name: ING Bank		
	Location : Warsaw - Poland		
	Designed by: Robert Majkut Design		
	Date: April - 2012		
	Colors Used: Orange, Blue and White		
	2. The Color Characteristics		
	Selected Color Indicators		
	Visual Properties Blue Color	Hue	Complement Color
		Value	Darkness/ Dark Shade
		Chroma	High Purity
Color Qualities		Cold Color/ Short Wavelength	
Visual Properties Orange Color	Hue	Secondary Color	
	Value	Brightness/ Bright Tint	
	Chroma	High Purity	
	Color Qualities	Warm Color/ Long Wavelength	
Visual Properties White Color	Hue	It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.	
	Color Qualities	Achromatic Color	

     	Visual Properties Blue Color	Hue	Primary Color
		Value	Brightness/ Bright Tint
		Chroma	High Purity
		Color Qualities	Cold Color / Short Wavelength
	3. Brand Identity and Color Relationship		
	Visual of Logo	Images / Font / Colors used – orange and Blue	
		Psychological Impact	
		Lion is national icon in the Netherlands. Lion / strength and safety	
		Orange color / national icon in the Netherlands. Orange color / more visual – make things look bigger and closer .	
		The font ING / represents the combination of companies. The font ING / confidence and profitability	
Blue color / national icon in the Netherlands. Blue color / less obvious – make thing look smaller and farther / most popular choice for the colors in the brand / secure / reliable / trust.			
Used of contrast for chromatically of color as warm color and cold color / considered contrast depending on the colors complementary (I) aspects between orange and blue.			
4. The General Interior Character			
Interior Space	Providing an environment with comfortable climate for customers by used a high level of service, use of technology and wi-fi zone, private meeting room customers, cafeteria ... etc.		

	Visual Elements	color	Used orange as color leading / supplemented with a large amount of white color / a little of blue color used
		Lighting	Used natural lighting and artificial lighting together in interior space
	Psychological Impact of the Color Used	<p>orange color / gives a sense of comfort / warmth to the space / increased activity / may cause tension for some preferred to use complementary color.</p> <p>Blue color / best color that suggest clam / give you a sense of cool / reduces blood pressure and agitation / relaxing color / feeling to enjoy.</p> <p>White color / purity code leaves a tinge of cold / reflect light effectively / smoothness / reduce visual strain.</p> <p>Complementary color gives you a feeling of excitement and attraction.</p> <p>When used two colors with white, this does not provide excitement and movement unless identified with a warm color family.</p>	
		Physical Elements	Wall
	Ceiling		Used non – structural ceiling
	Floors		Used constructional floors / secondary floors
	Material		Wall: used paint , glass partition, wood partition, glass facade / ceiling: used gypsum board, paint / floors: marble used and carpet
	Furnishing And Accessories		Use of technological equipment required to provide amenities and high standard and quality of furnishing and accessories / TV screen






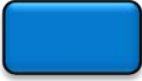



 <p>(URL 56)</p>	5. Colors Usage in Physical Elements of the Interior Space		
	Wall	 Orange	 White
	Ceiling	 White	
	Floors	 White	 Light Blue
Furnishing And Accessories	 Orange	 Dark Blue	 Light Blue



Figure 5.7: Color Graph of Interior Space of ING Bank

5.2.8 McDonald Company

5.2.8.1 Brief Description about the Chosen Example

McDonald's company as one of the examples of commercial space chosen to be analyzed in terms of the place of color in the creation of brand identity. McDonald's is an American company, considered one of the greatest chain restaurant firms in the world. It owns more than thirty thousand branches of fast food restaurants in 121 countries, and is in partnerships with other similar companies. It is a symbol of capitalism and the concept of globalization. It was founded in 1940 by the brothers McDonald and Ray Kroc, under the name McDonald's (URL 58). The new built restaurant of McDonald's Company in France is one of the examples of commercial buildings chosen to be analyzed in terms of color choice in the brand identity.

The new building of McDonald's in Villefranche- Laurgais in France was renovated by reshaping its exterior and interior decor, designed by Patrick Norguet, and was opened in 2010. The new design of the restaurant shows the effect of the identity of the brand space. The application of modern technology is evident in the design of the interior space, as well as maintaining the original forms when the first restaurant was opened by the brothers McDonald, which served fast food for families, then became a meeting place for the youth. Special corners were designed for families in the interior space. (URL 59) Besides that the design was faithful to the brand space of McDonald's by using arches and curves, reflecting the form of the symbol, and enhancing the loyalty of the users to the concern.

5.2.8.2 The Color Characteristics

Color is one of the most important considerations for creating the brand identity with environment in the commercial building. This important impact is evident in mental, psychological, social and function situation of people experiencing the space, as well as the excitement and enjoyment which increase commercial activities there, the colors used in the brand space issues can be variable in terms of hue, value and chroma aspects. Therefore, color is the main factor in creating a brand space, which is golden and red.

The color gold is one of a group of colors, yellow and orange, that give the impression of Gold. The specific gold color used in this building has high value, and has a high degree of brightness and purity. The red color used in this example it's a primary color, can be defined as warm color and with a long wavelength, in Munsell color system is one of the principle hue. The specific definition of the red used is highly saturated and dark shade, chromatic saturation value darkness, a medium degree of purity. It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.

Its achromatic color.

5.2.8.3 Brand Identity and Color Relationship

The brand is a combination of mood, look, creating a perception that environment, complementary to product design, advertising, promotion. So it should be began to focus, by designers and architects, on the three-dimensional position in brand space and show the fourth dimension that fits brand identity creation through color that

strengthens retail strategies of interior spaces in commercial buildings. This is clearly seen in the store McDonalds.

There was a need to make a strong brand for the chain restaurants of McDonald's, which signifies quality and originality, simple, clear and elegant. The brand designed for the first restaurant of McDonald's was in the form of two arches, representing the letter M. (URL 60) the colors gold was used for the two arches. It was a simple brand that will stick in the minds of the users.

The color gold is one of the warm colors, which is bright color, related to the sun and energy and good health, visually attractive, and represents success and achievement. The color red is clearer, and creates excitement and attraction, use more in the brand of fast food restaurant. Using these two colors of the warm family strongly draws the attention to this brand space, and creates familiarity between it and the customers.

5.2.8.4 The General Interior Character

The design of the new McDonald's restaurant in France is an attempt to create a new architectural identity to their restaurants. The concept of the new design is to establish a relation between the brand space of McDonald's and the interior space of the restaurant, by adopting the shape of the brand space in the design of the space. There is a movement towards the past, in allotting special spaces for families, avoiding depending only on youth customers, for whom there are special places where they may take their meals standing. That was done by designing shelves and storage cabinets made of wood, in the form of curves and circles closely like those of the brand space.

These shelves were used in different places in the restaurant to provide spaces for the different social requirements. The organic and the function of the place were embodied in the design of the furniture and the interior decor, by the way chairs and tables and the serviced for the customers were arranged. Digital centers were placed at the tables around the space, with one in the center, so that customers may place their orders without leaving their tables.

The designer looked for an approach of a particular radical nature in selecting materials for the place, using aluminum plates, plywood, and concrete. He used metal chairs, tables and benches specially designed for the restaurant, to create a space of more elegance that offers relaxation and romantic enjoyment for the customers and users. Open and concealed lighting were used as required to create an atmosphere of relaxation and pleasure, which make it more pleasurable to be in the place. Seating arrangement were in the shape of curves that reflects the brand space, which makes one feel attached to the two arches of the letter M of the brand space. Secondary ceilings of different heights were employed to give the impression of movement inside the space, in order to avoid the feeling of monotony. Glass partitions are used to separate the sitting places of families for more privacy, in case of private parties or occasions.

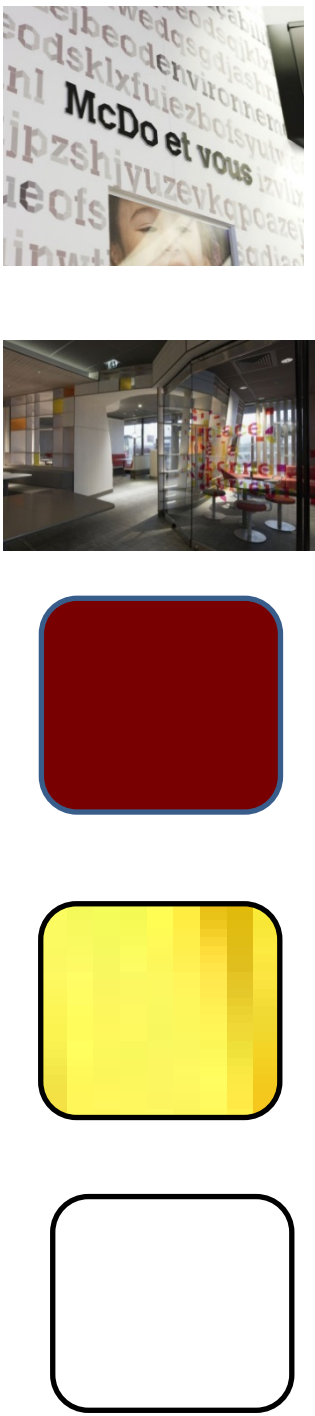
The color white is extensively used besides other colors, to get a unique architectural impression. It is used on walls, ceilings, storage cabinets, and shelves, together with touches of yellow and orange on the cabinets. Red color is used for furniture pieces and some of the walls. This combination of using a neutral color with warm colors creates





excitement and dynamism in the place, as well as a beautiful color formation that makes one enjoy being in the place.





Warm colors are much used in restaurants, and arranging them in this way brings in vitality and spirit to the place. The extensive use of white color as it signifies purity and cleanliness, besides being the brightest color, thus more reflective of light, which means using less energy for lightings. It is a color of content and delight. It inspires peace and quiet. It is largely used to weaken the strong effect of red color in the space. It is used for chairs and some walls decors. Being a color of strong effect, it is used in restaurants to attract customers and make them eat fastes and leave. More than that, it is a color of passion, familiarity, energy, and activity.

The colors yellow and orange, of which the color gold is formed, are sparingly used for shelves and some furniture units. Orange is the color of activity and emotion. It helps digestion, and is socially more acceptable. It can make people feel hungry, thus eating more, that is why it is much used in fast food restaurants. The yellow color is that of brightness and merry, attractive, but should be used sparingly inside spaces. When yellow is used on a white background it makes one feel warm, tender, and in a deep place. Using these two colors, in combination with white, creates a balance in the space, enriching the sense of pleasure and excitement in a space. Using wood for partitions and floors makes the place feel arm, and back to nature. Ultimately, all these colors used in the place are much likely to enhance its commercial activities and profitability.

Table 5.9: Analysis Example of McDonald Restaurant

	1. Brief Description about the Chosen Example		
	Name: McDonald Restaurant		
	Location: Villefranche- Laurgais - France		
	Designed by: Patrick Norguet		
	Date: 2010		
	Colors Used: Red, Gold and white		
	2. The Color Characteristics		
	Selected Color Indicators		
	Visual Properties Red Color	Hue	Color complementary
		Value	dark shade / darkness
Chroma		medium degree of purity	
Color Qualities		Warm Color / Long Wavelength	
Visual Properties Gold Color	Hue	Monochromatic colors	
	Value	Bright tint / brightness	
	Chroma	high degree of purity	
	Color Qualities	Warm Color / Long Wavelength	
Visual Properties White Color	Hue	It is the color the human eye sees when it looks at light which contains all the wavelengths of the visible spectrum, at full brightness and without absorption. It does not have any hue.	
	Color Qualities	Achromatic Color	

   	3. Brand Identity and Color Relationship	
	Visual of Logo	Font / Colors used – Gold and Red
		Psychological Impact
		<p>The brand designed for the first restaurant of McDonald's was in the form of two arches, representing the letter (M) like this arches.</p> <p>Gold color / related to the sun and energy / good health / visually attractive / represents success and achievement.</p> <p>Red color / clearer / creates / excitement and attraction / use more in the brand of fast food restaurant</p> <p>Using these two colors of the warm family strongly draws the attention to this brand space, and creates familiarity between it and the customers.</p>
4. The General Interior Character		
Interior Space	The application of modern technology / maintaining the original forms when the first restaurant was opened / Special corners were designed for families in the interior space.	
Visual Elements	color	Used white as leading color / Red color/ Orange color / a little of yellow color.
	Lighting	Open and concealed lighting were used as required to create an atmosphere of relaxation and pleasure, which make it more pleasurable to be in the place.

 	<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Psychological Impact of the Color Used</p>	<p>White color / extensively used , to get a unique architectural impression / purity and cleanliness / more reflective of light / inspires peace and quiet.</p> <p>Red color / strong effect / used in restaurants to attract customers / make them eat fats and leave / passion, familiarity, energy, and activity.</p> <p>Orange color / help digestion / activity and emotion / make people feel hungry.</p> <p>Yellow color / brightness and merry / yellow is used on a white background it makes one feel warm / tender and in a deep place.</p>	
 		<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Physical Elements</p>	<p>Wall</p>
<p>Ceiling</p>	<p>Used non - structural ceiling</p>		
<p>Floors</p>	<p>Used secondary floors</p>		
<p>Material</p>	<p>Wall: paint used, glass partition, wood partition, glass facade / ceiling: gypsum board used and paint / floors: used wood</p>		
<p>Furnishing And Accessories</p>	<p>Comfortable and simple furniture were used for users, shelves and storage cabinets made of wood / Digital centers were placed at the tables around the space, with one in the center, so that customers may place their orders without leaving their tables / besides using modern technology inside the building / TV screen</p>		

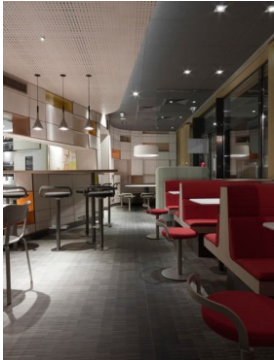

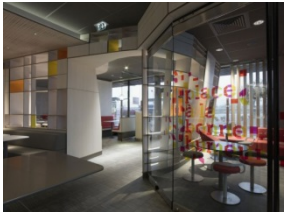

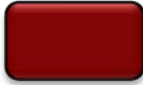






   <p>(URL 59)</p>	5. Colors Usage in Physical Elements of the Interior Space		
	Wall	 White	 Red
	Ceiling	 White	
	Floors	 Wood	
Furnishing And Accessories	 White	 Red	 Orange
	 Yellow		



Figure 5.8: Color Graph of Interior Space of McDonald Restaurant

Chapter 6

CONCLUSIONS

In the course of this work a strong relation was outlined between the general environmental design on one hand, and color patterns and brand space identity on the interior spaces of commercial buildings on the other hand. The conclusions of this research work were drawn depending on the theoretical framework and the samples of commercial buildings which were analyzed. These analyses confirmed the relation between colors and their patterns and the identity of the brand space in creating a certain feeling for the receiver at the interior space of a commercial building, which help to activate commercial operations, besides confirming the important role of the colors and brand spaces in bringing out the identity of these spaces. Color is one of the most important main elements in any commercial space, by means of which it becomes possible to identify the elements of interior space in regards to the users. The research work led to form a point of view about the identity of brand space, confirming more than anytime, the strong relationship between the color usage and design of commercial building spaces and the identity of the brand space. It is clear that the brand space can be accepted to not only represent a sign or a motto, but a three dimensional environment where commercial activities take place. Brand space became one of the most common fields of interior design, especially after the impetus of globalization in postindustrial communities.

The research study adopted a comprehensive point of view about the psychological effects of color and how color patterns have a visual effect on human-being, in addition to a deeper understanding to color relationships and the identity of the brand space in interior space of commercial buildings. Color may have a strong effect on human psychology in everyday life, where it may have different meanings according to the cultural and social values of the community. Besides that, color is a rich element of design, that has to be understood in a full context. It is an element of design that should be analyzed side by side with its three dimensions (hue, value, chroma).

Space design should be made with consideration of the colors used, to create the suitable emotional and psychological conditions, together with physical conditions, according to the behavior and activities of customers inside these spaces. Commercial activities are a response to emotional motivations (attraction, enjoyment, and excitement) towards the color patterns of the space elements in the commercial interior space. Variations in color patterns and their properties may prompt these emotions, which enhances commercial activities. By means of the chosen samples of brand spaces, it can be concluded that using the colors of brand spaces at the interior spaces of commercial buildings makes the users in these spaces live up to the character of the brand space, when their concept is imprinted in the design of buildings, in the interior, and the design of furniture and accessories.

Color plans may differ in the extent of realizing the highest degree of color excitement inside commercial spaces. Generally, it was noticed that basic and secondary colors were extensively used in the forms of brand spaces, especially the bright colors which

can be recognized at great distances, besides making good use of the concept of contrast between warm and cold colors. Moreover, the choice of colors in a brand space defines its function. Such as (ING Bank, Adidas Company, Google Office, Ferrari Museum, Mercedes-Benz Company, Nike Store, McDonald, and Vodafone Store).

The use of neutral colors, especially the white color to a great extent inside commercial spaces with colors of the warm family creates a kind of activity and excitement in these spaces. Such as Nike Company used the orange color with white and black, Ferrari museum used yellow color with white color, Google Office used red color with white color, McDonald used red, orange color with white color, Vodafone used red color with white and black color, and ING Bank used the orange color with white color. Together with that, it was noticed that some transparency was created between the inside space and the outside area, to make use of natural lighting, and provide an atmosphere of unity between the two spaces. Furthermore, the color choice for interiors, as a branding strategy, are made visible from outside as well. This is also apparent in all the examples for the study.

By the analysis of the main elements that form internal space it was possible to arrive at all the samples where open space was used, with using dividing walls made of glass or in most cases aluminium sometimes wooden partitions were used to have connections among the whole of the internal space. Together with that secondary ceiling were used in most of the samples for the purpose of placing electrical connections and cooling channels above them, and to create an aesthetic image into the internal space. In most of the samples JIB boards were used for ceilings to produce different suitable designs,

according to the nature of the internal space, while for some internal spaces aluminium sheets were used. In some spaces sky lightings were used to create a relation between internal spaces and external spaces, and to make large scale use of natural lighting inside these spaces.

For the floors it was noticed that ceramic tiles were mostly used, being more suited to these spaces, together with wooden floors in some places, to create an aesthetic image for the space. In some cases carpeting was also used, as in the case of (ING Bank) Staircases are one important element of internal spaces, where most of the samples non constructional stair cases were chosen. Regarding the openings in the analyzed buildings it is noticed that glass fronts were widely used to have a kind of integration between the internal spaces of these buildings and the external space surrounding these commercial buildings, as well as the optimum usage of lighting was used. Simple forms of furniture and accessories were used in the internal spaces of commercial buildings, with elegant style of distribution, to allow the customers to have easy movement around these spaces. Besides that, the furniture was designed to be complementary with the form of the brand space in the space. The colors of the brand were also used to a large extent in all of the samples chosen for analysis.

For the complementary elements of internal spaces which are lighting and color, it was noticed that natural lighting was widely used in all of the internal space of the samples studied, in addition to direct artificial lighting in a number of samples. Regarding the colors used, which is the theme of this investigation, we consider it adequate to use the colors of the brand extensively inside the internal spaces of these buildings. Moreover,

using colors with a degree of contrast and complementation produces a sense of movement, excitement, and enjoyment inside the internal spaces of commercial buildings.

It can be concluded from the study, of the interior designs of commercial buildings of companies with brand reputation, that the identity and the concept of brand space were impressed by their premises, as well as the used color patterns in the designs of their interior spaces. The decision on the choice of colors is also important on those who use these spaces. The relations between colors used for a commercial interior space should have a psychologically acceptable balance, whether in color harmonies or in contrasts, or on how to form certain color patterns.

With the analysis made for the chosen examples, it can be said that color can be used to realize certain emotional aims by using certain color patterns that create an atmosphere of attraction and excitement inside commercial spaces, by creating an exciting aesthetical image for the customers, which enhance commercial activities. That this is aspect adopted by the researcher for the theoretical framework discussed in chapter color, to arrive at this conclusion in the process of analysing and all this references has been check with in chosen examples. Using the concept of the brand space through a symbol or a commercial name, side by side with color patterns at interior space of these companies, enhances the image of their brand spaces, making them ever-present in the minds of those who prefer commercing with the brands having these spaces.

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