

# **Use of Color in Minimalist Interior Spaces: with Different Function in Different Regions**

**Ghazal Taghilooha**

Submitted to the  
Institute of Graduate Studies and Research  
in partial fulfillment of the requirements for the Degree of

Master of Science  
in  
Architecture

Eastern Mediterranean University  
May 2011  
Gazimağusa, North Cyprus

## **ABSTRACT**

Minimalism is a style that suggested a method of reduction where every design elements has been reduced to their necessary, size, shape and form. Besides, the mentioned characteristic, it is important to understand, how color is effective on Minimalist spaces and what kind of role does color accomplish in those interior spaces?

This study therefore, first explains Minimalism, starting with its emergence and its relationship to Design, Interior Design, Art and Color. Second, mentions color as a significant character of design element and the special role it has in interior design. Therefore, in order to analyze those minimalist spaces, literature review on color carried out under three heading as: first, Color Perception, since color has a strong role that may change perception of the spaces and it can enhance the eligibility of environment or create illusion, contributes to advance or recede perception of spaces. Second, use of color explained as a special character that contribute to Principle of design, and how it is used to achieve, or create Contrast, Unity, Similarity, Proximity, and Dominance, Focal Point or Point of Interest. Third, discusses color schemes to get ready to evaluate interior spaces.

Case study research has been carried out to find use of color in Minimalist Interiors in 25 different cases, which were collected from different Regions of the world such as Asia, East Europe, West Europe, North America, and South America which have different functions.

As a result of the case study research, study achieve that generally color has been used in Minimalist Interior space to create Focal Point, the most proffered color scheme is Achromatic, which sometimes reinforced with one accented color. Mostly, Recede color used to make space look larger than they are. Beside, Advance color, used in the space to create point of interest. There are differences between interior spaces selected and evaluated from Asia and West Europe where they are compare to cases from others regions, in a way of use of color to create contrast. And, there is a similarity in all regions which color used to create Focal Point. Also study achieved that there are differences between Commercial and Cultural Minimalist interior spaces with the others in a way that, use of Advance color is more than Recede color. And the main similarity in all different spaces is the use of Achromatic color scheme more than the other color schemes.

Keywords: Minimalism, color, design and interior design.

## ÖZ

Minimalizm her bir tasarı unsurunun kendi gerekli ebat, şekil ve biçimine indirgendiği şekli ile kullanılmasını öneren, sadelik ve nesnelliği ön plana çıkaran bir akımdır. Bahsi geçen özelliğin yanı sıra, Minimalist mekanlarda rengin nasıl etkili olduğunu ve rengin bu iç mekanlarda nasıl bir rol oynadığını da anlamak ayrı bir önem taşımaktadır.

Bu bağlamda çalışmada ilk olarak Minimalizm'in doğuşundan başlayarak Tasarım, İç Mekan Tasarımı ve Renk kavramları ile olan ilişkisi tartışılmaktadır. İkinci olarak, renk kavramının tasarım unsurunun önemli bir niteliği olmasından yola çıkarak, iç mekan tasarımındaki etkin rolüne değinilmektedir. Bu kapsamda bahse konu minimalist mekanların analiz aşamasına ışık tutacak şekilde, renk konusu, kavramı üç başlık altında incelenmiştir. İlk olarak renk, renk şemaları gibi temel konular irdelenirken, devamında renk kavramı ve çeşitli kullanım yaklaşımlarının tasarım ilkelerine katkısı ve rolü-karşıtlık, bütünlük, benzerlik, yakınlık, dominans, odak noktası gibi kavramların oluşturulmasında nasıl kullanıldığı tartışılmaktadır.

Alan çalışması, Asya, Doğu Avrupa, Batı Avrupa, Afrika, Kuzey Amerika ve Güney Amerika gibi farklı bölgelerde, çeşitli fonksiyonlara sahip Minimalist iç mekanlarda renk kullanımının araştırılması amacıyla, 25 farklı örnek incelenerek ortaya konulmuştur.

Alan araştırması sonucunda, rengin genel olarak Minimalist mekanlarda odak noktası yaratmak amacı ile kullanıldığını, bunu yaparken en fazla tercih edilen renk

şemasının Akromatik renk şeması olduğunu, bazen de diğer bir renk kullanılarak desteklendiği sonucuna varılmıştır. Diğer bir sonuç ise renk kullanımının algıda seçicilik yarattığını, açık renklerin çoğunlukla mekanları olduğundan büyük göstermek amacı ile kullanıldığını, bunun yanı sıra koyu ve parlak renklerin ise odak noktası yaratmak amacı ile kullanıldığını sonucu ortaya çıkarmıştır. Asya ve Batı Avrupa'dan seçilen iç mekan örneklerinde diğer bölgelerdeki durumlar ile karşılaştırmalı yapılan değerlendirme sonucunda rengin karşıtlık yaratmak amacı ile kullanıldığı ve diğer bölgelere kıyasla bu açıdan farklılık gösterdiği sonucuna varılmıştır. Bir diğer sonuç ise odak noktası yaratmada renk kullanımının tüm bölgelerde benzer nitelik taşıdığıdır.

Bu çalışma ayrıca ticari ve kültürel minimalist iç mekanlarda diğer mekan türlerine göre kıyasla koyu renklerin açık renklere göre daha çok tercih edildiği ve bir farklılık yarattığı sonucunu ortaya koymaktadır. Tüm örnekler arasındaki ortak benzerlik ise Akromatik renk şemasının diğer renk şemalarına göre daha fazla uygulanmış olmasıdır.

Sonuç olarak, çalışma minimalist iç mekanların bölge olarak daha çok Batı Avrupa ve Amerika'da daha çok tercih edildiğini; farklı bölgelerde renk kullanımı açısından çok bariz farklar bulunmadığını; genellikle benzer renk şemasının tercih edildiğini; arada az bir farklılaşma olduğunu; farklı kullanımlar arasında küçük değişiklikler olduğunu; çok büyük farklılıklar olmadığını ortaya koymuştur.

Anahtar kelimeler: Minimalizm, Renk, Tasarım, İç Mekan Tasarımı

## **ACKNOWLEDGMENT**

I would like to show my appreciation to my supervisor Assist. Prof. Dr. Nil Pasaoglulari Sahin who helped me with every details of my thesis, I am grateful for her supports, suggestions and information. Without her invaluable guidance and supervision, this study would not have been successful.

*To My Parents, husband and my sister*

*Words are not enough to say thank you*

# TABLE OF CONTENTS

ABSTRACT.....	iii
ÖZ.....	v
ACKNOWLEDGMENT.....	vii
DEDICATION.....	viii
LIST OF TABLES.....	xi
LIST OF FIGURES.....	xii
LIST OF CHARTS.....	xviii
1 INTRODUCTION.....	1
1.1 Overview.....	2
1.2 Problem Statment.....	2
1.3 Research Questions.....	2
1.4 Research Methodology.....	3
2 LITERATURE REVIEW: MINIMALISM & COLOR.....	6
2.1 Minimalism in Interior Design.....	6
2.1.1 What is Minimalism.....	6
2.1.2 Minimalism and Design.....	11
2.1.3 Minimalism and Color in Interior Design.....	18
2.2 Color in Interior Design.....	21
2.2.1 Color is Energy.....	24
2.2.2 Color Groups.....	24
2.2.3 Color Schemes.....	26
2.2.4 Use/Role of Color in Design.....	31
2.2.4.1 Use/Role of Color in Interior Design.....	34



2.2.4.1.1 Color Affects Peception of Spaces .....	34
2.2.4.1.2 Color in Principles of Design .....	39
3 ASSESSMENT OF USE OF COLOR IN MINIMALIST INTERIOR SPACES .....	52
3.1 Method of Analysis.....	52
3.2 Assessment of Result .....	58
3.2.1 According to Perception .....	59
3.2.1.1 General Result (Perception) .....	59
3.2.1.2 According to Region (Perception).....	62
3.2.1.3 According to Function (Perception) .....	63
3.2.2 According to Design Principles .....	65
3.2.2.1 General Result (Design Principles) .....	65
3.2.2.2 According to Region (Design Principles) .....	67
3.2.2.3 According to Fuction (Design Principles) .....	68
3.2.3 According to Color Scheme .....	71
3.2.3.1 General Result (Color Scheme) .....	71
3.2.3.2 According to Region (Color Scheme) .....	74
3.2.3.3 According to Fuction (Color Scheme) .....	75
4 CONCLUSION: ROLE OF COLOR IN MINIMALIST INTERIOR SPACES .....	78
REFERENCES .....	87
APPENDIX.....	91
Appendix A: Inventory Forms of 25 Cases .....	92

## LIST OF TABLES

Table 2.1: The structural framework of the study .....	4
Table 2.2: List of parameters of use of color in interior spaces.....	50
Table 3.1: Case Studies.....	55
Table 3.2: Case studies in different Regions.....	57
Table 3.3: Case Studies with Advance & Recede colors.....	60
Table 3.4: Perception of color, which consists of Advance, Recede colors.....	63
Table 3.5: Case studies with Design Principles .....	66
Table 3.6: Distribution of color in Principle of Design.....	70
Table 3.7: Case studies with Color Schemes.....	73
Table 3.8: Color Scheme.....	77
Table 4.1: Comparative Result.....	79
Table 4.2: Result for Color Schemes in Different Regions and Functions.....	80
Table 4.3: Result for color in design principles in different regions and functions.....	81
Table 4.4: Result for color in design principles in different regions .....	82
Table 4.5: Result for color in design principles for different functions .....	82
Table 4.6: Result for color perception in different regions and functions.....	83

Table 4.7: Result for Perception of color in different regions.....84

Table 4.8: Result for perception of color for different functions .....85

## LIST OF FIGURES

Figure 2.1: Robert Morris Plywood Show, View of installation, Green, New York, 1964 (Editorial, 2006, p.35).....	7
Figure 2.2: Donald Judd untitled -1970 – (Foreground); Untitled – 1963 (Center) – Untitled – 1966 (Background) (Bertonni, 2004, p.9) .....	7
Figure 2.3: Donald Judd Exhibition on the 5 <sup>th</sup> floor of Spring Street 101 (NYC); Bed with Platform (Bertoni, 2004, p.8) .....	7
Figure 2.4: Japanese traditional design (interiordesignfurnishing.com).....	8
Figure 2.5:Piet Mondrain, composition II in red, blue, and yellow 1930 and composition oil on canvas 1937-42 (Wikipedia.com).....	9
Figure 2.6: Interior design inspired by De Stijl, using basic elements such as lines and analogous color. (forums.massassi.net).....	9
Figure 2.7: Tadao Ando’s Church .....	12
Figure 2.8:Luis Barragan’s Gilardi House, Mexico City, 1975-77.....	13
Figure 2.9:John Pawson’s own house, who design his house with only three materials; Stone, Timber, and white-painted plaster (Ypma, 1996, p.131).....	14
Figure 2.10: John Pawson’s dinning table (Ypma, 1996, p.136).....	15
Figure 2.11: John Pawson Marble bathtub in London house (Toy, 2003, p.117).....	15

Figure 2.12: Japanese oak is used for the floors and also to clad this cast iron bath (Left Photo) (Ypmaa, 1996, p.147). John Pawson cuts the sink from single solid block of stone. (Ypma, 1996, p. 137).....16

Figure 2.13: Maarten van Severen Blue Bench -1997 (Bertoni, 2004, p.204-05).....16

Figure 2.14: Djoke de Jong Red Cross (1997) and Arnout Visser – Drawer (1997) (Bertoni, 2004, p.21).....17

Figure 2.15: A historical pedigree combined with a quality to ensure that pieces such as Ray Key’s bowls will one day be seen as a “modern” design classic. (Ypma, 1996, p.121).....17

Figure 2.16: Raphael Moneo, Cathedral of Our Lady of the Angles (Meyers , 2006, p.100).....18

Figure 2.17: Seth Stein London house fuchsia form; Complementary color is used to add personality to the space (Toy, 2003, p.50).....19

Figure 2.18: Morris/Sato Studio in Manhattan’s Tribeca, the seating area’s variously colored elemental chairs invite movement and reconfiguration, for sitting, lying down or putting one’s feet to enjoy the view of the sky (Toy, 2003, p.42)..... 20

Figure 2.19: Richard Rogers, London townhouse; modern classics like Le Corbusier and Perriand’s chaise longue and Mies van der Rohe’s Tugendhat table; ensure minimal distraction and maximum freedom of light and space to awaken the occupants senses. (Toy, 2000, p.23).....21

Figure 2.20: perception of color by eye.....	23
Figure 2.21: Color Wheel.....	25
Figure. 2.22: Primary color (Pile, 1997, P.12) .....	25
Figure 2.23: Warm colors (Pile, 1996, p.15) .....	26
Figure 2.24: Cool colors (Pile, 1996, p.15) .....	26
Figure 2.25: Achromatic colors (Pile, 1996, p.13) .....	26
Figure 2.26: Complementary color scheme and split complementary (Drawn by Author) .....	27
Figure 2.27: Complementary color on Chirstian Dior fashion show and psp’s cover.....	28
Figure 2.28: Complementary color on interior and exterior of car (Ford) .....	28
Figure 2.29: Complementary color in Interior space (Toy, 2000, p.50) .....	28
Figure 2.30: Analogos color scheme (Drawn by Author) .....	29
Figure 2.31: Analogos color scheme in Interior space and furniture .....	29
Figure 2.32: Analogous color in design (Berton, 2004, p.197) .....	30
Figure 2.33: Neutral colors .....	30
Figure 2.34: Example of interior spaces with warm and cool colors (Mendleberge, 2007, p.97) and (Schleifer, 2005, p.141) (Right Picture) .....	34

Figure 2.35: All white interiors for comparison (Left Photo), Enclosure appears narrower and higher. (Re-Drawn by Author).....	38
Figure 2.36: Enclosure appears shallower as the back is brought forward (Left Photo), Enclosure appears wider and shallower and the ceiling appears lower. (Re-Drawn by Author).....	38
Figure 2.37: Enclosure appears narrower and deeper and the ceiling appears higher (Left Photo), The structure appears warped. (Re-Drawn by Author).....	38
Figure 2.38: Figure 2.36: Robert Apartment in New York, USA (Simultaneous contrast make opposite color to come out) (Ojeda &, Mccown, 2003, p.13).....	39
Figure 2.39: Swimming pool-Le Bans, France. (Bright colors used in one corner to create contrast in an interior space dominated with white color) (Jodidio, 2010) ....	40
Figure 2.40: Using accented color for walls and yellow for entrance. (Ojeda &, Mccown, 2003, p.187).....	41
Figure 3.41: Additional design elements with accent color. ....	41
Figure 3.42: Using red and purple and combined with yellow and blue. Although colors are bold, the scheme does not feel overwhelming. (Ojeda &, Mccown, 2003, p.183).....	42
Figure 2.43: Gamma-Isaa House, Brazil, using white color for different element create a unity to the space (Schleifer, 2005, p.183) .....	44

Figure 2.44: Similar color .....	45
Figure 2.45: Gamma-Isaa House, Brazil (Schleifer, 2005, p.181) (Using white color for Walls, Furniture, Soft-Furniture, Lighting and Structural elements increase visual relationship to whole space) .....	45
Figure 2.46: proximity in form is stronger than using same color .....	46
Figure 2.47: Ciatti House, Italy. (Schleifer, 2005, p.45) .....	46
Figure 2.48: Dominance .....	47
Figure 2.49: Kandinsky's Painting .....	48
Figure 2.50: Ibirapuera Auditorium, Brazil(Create focal-point with using red color at the ceiling makes people to come and see upper floor) (Jodidio, 2007, p.390-91) ..	49
Figure 3.1: Scheme of Analysis.....	52
Figure 3.2: Example of the developed inventory for analysis.....	52
Figure 3.3: Example 1 (Color Perception).....	59
Figure 3.4: Example 2 (Color Perception) .....	59
Figure 3.5: example 1 (Design Principles).....	65
Figure 3.6: example 2 (Design Principles).....	65
Figure 3.7: example 3 (Design Principles).....	65
Figure 3.8: Example 1&2 (Color Schemes).....	72
Figure 3.9: Example 3&4 (Color Schemes).....	72



## LIST OF CHARTS

Chart 3.1: Color Perceptions.....	59
Chart 3.2: Color perceptions in different regions.....	61
Chart 3.3: Color perceptions in different functions.....	62
Chart 3.4: Color in design principles.....	64
Chart 3.5: Design principles in different regions.....	68
Chart 3.6: Design principles in different functions.....	69
Chart 3.7: Color Schemes.....	71
Chart 3.8: Color Schemes in different Regions.....	74
Chart 3.9: Color Schemes in different functions.....	75

# Chapter 1

## INTRODUCTION

### 1.1 Overview

Minimal as a vocabulary means least in amount or degree, what minimalism try to do is reducing “aspects of modernism and often ‘interfere’ as a reaction against abstract expressionism and a ‘connection’ to post modern art practice. The term ‘minimalist’ is often applied to design” anything, which is reduced to its essentials. Also “the term minimalism is used to describe a way in design and architecture where subject is reduced to its necessary elements”. The main idea generated with using basic elements such as lines, planes organized in its very specific manners. This sensibility has attached to a number of styles and fashions, which sometimes conflicted with its main principles of expressing as much as possible with as little as possible.

This study focuses on how simple and basic geometric shape that is used for designing a Minimalist space in order to achieve simpler characteristic and how it is achieve improved visual quality, with using colors. Beside, to find out effects of using basic geometrics shapes as outlines, using only single shapes or using similar shape very rarely for components to achieve unity with the use of non-fussy bright color combination, usually with natural textures and colors, and clean and fine finishes.

Minimalism suggests a method of reduction and in this reduction what kind of role/ approach does color accomplish emerges. The need to find answer to this question initiates this research.

Color has a significant role in design and it is one of the primary characters of design elements, which is used in different design disciplines to create specialty in design. In this research, use, role and significance of color in different design disciplines and use/role of color in interior design with a special point of view put on minimalist interior spaces is discussed. Aim is to find out similarities and differences in terms of color usage between minimalist interior spaces, which have different functions and also similarities, and differences between use of color in minimalist interior spaces from different regions of the world.

## **1.2 Statement of The Problem**

Besides the mentioned, the other problem is inadequacy of researches and studies specific to role and use of color in minimalist interior designs. Mainly, existing studies mention color as a decoration element, not as a significant tool of minimalist interior design. As it is mentioned above, color is one of the most significant characters of design elements and should not be considered as a simple decorative element. The precise break between the philosophy behind decoration and interior design increases the necessity and originality of this subject.

## **1.3 Research Questions**

Accordingly, this study questioned certain issues stated below:

1. What is the role/use of color in minimalist interior spaces?
2. What kinds of similarities are there between minimalist interiors with different functions in terms of color use?

3. What kinds of differences are there between minimalist interiors with different functions in terms of color use?
4. Are there any similarities/differences between minimalist interiors in terms of color use from different regions of the world?
5. Which color scheme is preferred in Minimalist interior space?

## **1.4 Research Methodology**

For the evaluation of the use or role of color in minimalist interiors it is important to understand the philosophy behind Minimalism and the significance of color in design elaborately. At first research structured with the literature review on the two key issues of the study: “minimalism” and “color”. The philosophy behind minimalism and the use of color in design and interior design should be understood well at the beginning. As a result of the literature review carried out, certain indicators is developed to evaluate use of color in minimalist interior spaces. As a method of analysis, inventory form developed with the help of listed indicators.

Therefore, the inventories have been designed in a way that, Minimalist interior space can be analyzed under three terms such as color perception, color reinforces/supports principle of design, and color scheme preferred in such spaces.

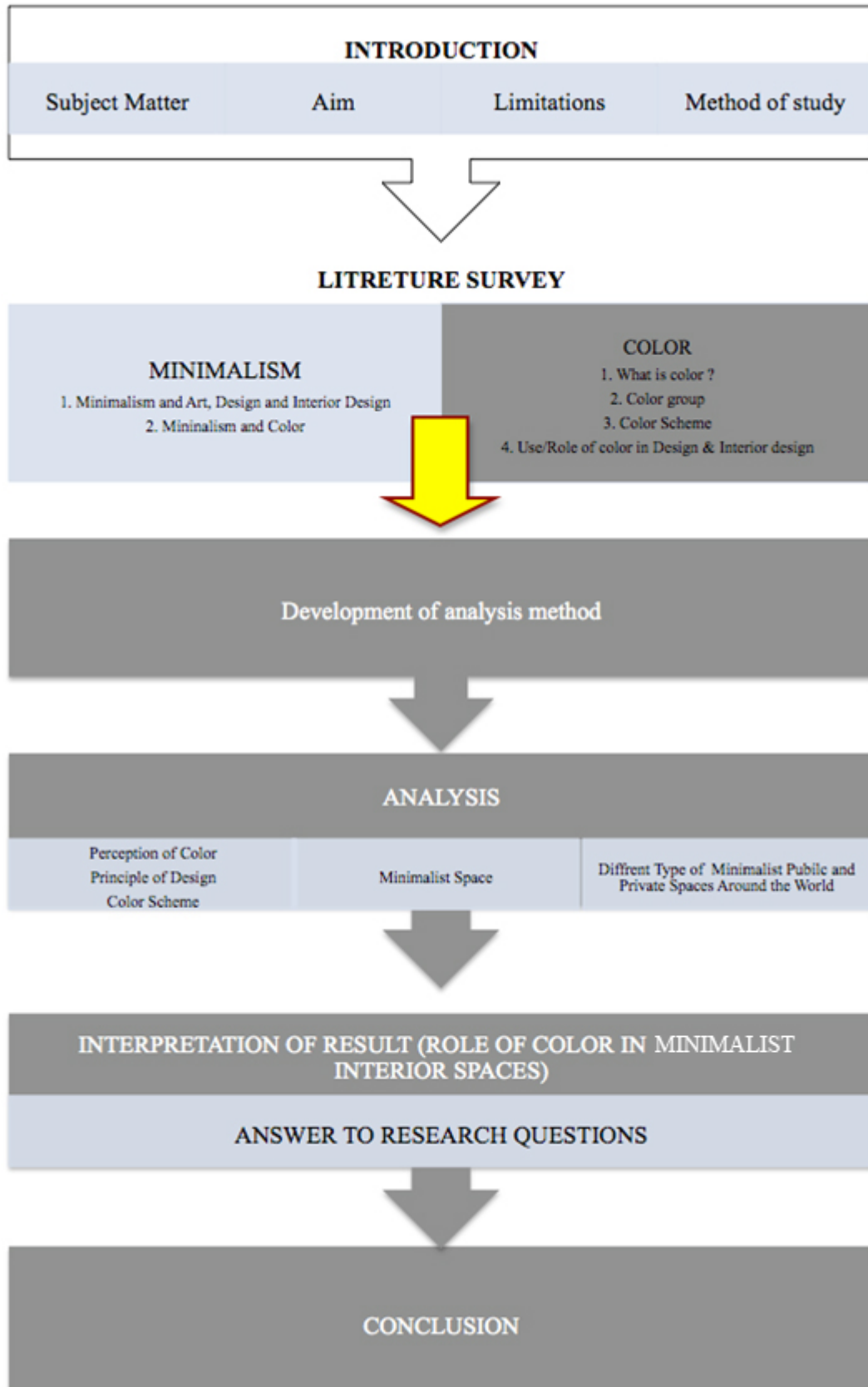
In order to achieve what is “role of color” in interior spaces, an assessment carried out on minimal interior spaces with different functions ranging from private to public. Such as residential, retail, educational, recreational, health or industrial spaces.

Selection of the cases is limited with selected 17 books published on minimalism between 2003 to 2010. Besides, it is aimed to carry out assessment by selecting cases

from different regions such as Asia, West Europe, East Europe, Africa, North America and South America that is analyzed under three terms; first color perception, which consist of Advance and Recede color; second, color as a special character that contribute to Principle of design which consist of Contrast, Similarity, Proximity, Unity, Focal Point or Point of Interest; third color scheme which consists of Achromatic, Chromatic, Monochromatic, Analogous, Complementary, Neutral and Accented Neutral.

Accordingly, target is to select from each region example of the stated various functions. Accordingly it is supposed to select from 6 regions – 8 cases, total 48 case study areas.

Table 1: The structural framework of the study



## **Chapter 2**

### **LITERATURE REVIEW:**

### **MINIMALISM & COLOR**

This chapter structured to carry out, a literature review on the two main issues of this study, which are minimalism and color. Firstly, what is minimalism, minimalism and art, minimalism and design, minimalism and color is put forward. Secondly, color groups and schemes, use of color in design and interior design is carried out.

#### **2.1 Minimalism in Interior Design**

##### **2.1.1 What is Minimalism**

Minimal as a vocabulary means least in amount or degree, also minimal art means nonrepresentational art consisting chiefly of geometric shapes and forms. “Minimalism is a new sensibility, a new system of creation arising from “minimal art” and based on a number of modernist ideals” and various form and design to describes movements of visual art, music, theater and cinema where the work is done to deep down fundamental features. It can be mentioned as a specific movement in the arts, that it is mostly identified with developments in post world war II with Western art, and strongly with American visual arts in the late 1960’s and 1970’s. The most famous artists associated with this movement are known as Donald Judd, Agnes Martin, Robert Morris and Frank Stella (Bertoni, 2004, p.6-10).

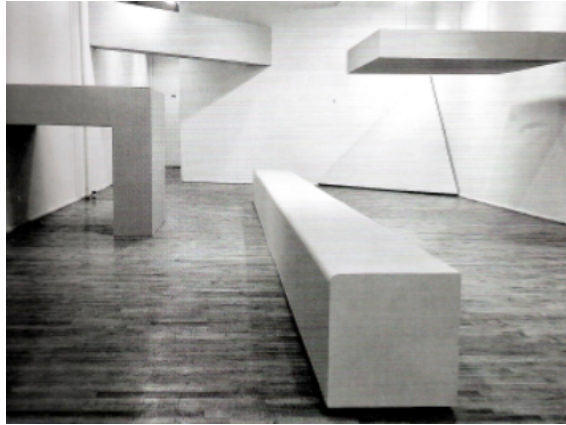


Figure 2.1: Robert Morris Plywood Show, View of installation, Green, New York, 1964 (Editorial, 2006, p.35)

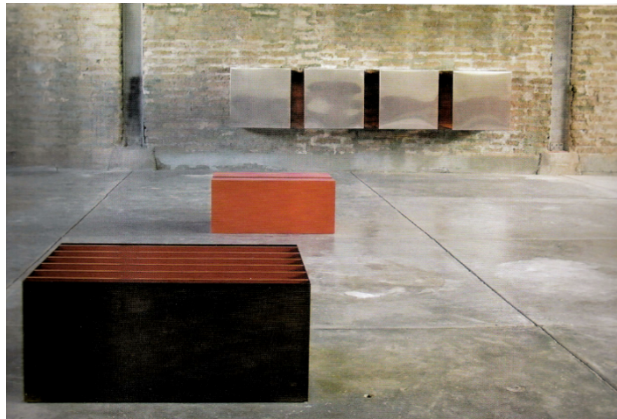


Figure 2.2: Donald Judd untitled -1970 – (Foreground); Untitled – 1963 (Center) – Untitled – 1966 (Background) (Bertoni, 2004, p.9)



Figure 2.3: Donald Judd Exhibition on the 5<sup>th</sup> floor of Spring Street 101 (NYC); Bed with Platform – (Bertoni, 2004, p.8)



What minimalism tries to do is to reduce aspects of modernism and often interfere as a reaction against abstract expressionism and a connection to post modern art practice. “The term ‘minimalist’ is often applied to design anything, which is reducing to its essentials”. Also the term minimalism is used to describe a way in design and architecture where subject is reduced to its necessary elements such as Japanese traditional design and architecture which has been influenced by minimalist design.



Figure 2.4: Japanese traditional design (interiordesignfurnishing.com)

In addition it is argued that, De stijl artist embraces minimalism as “a major source and took reference from this kind of work, De stijl” experience the idea with “using basic elements such as lines, planes organized in very specific manners”. This sensibility has attached to a number of styles and fashions, which sometimes conflicted with its principles of expressing “as much as possible with as little as possible.” Peit Mondian “was an important contributor to the De Stijl art movement and group, which” later influence many Minimalist designers.

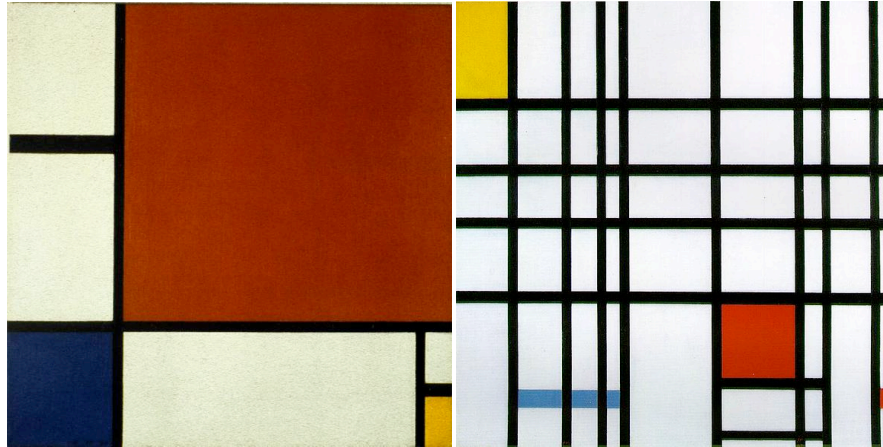


Figure 2.5: 'Piet Mondrian, composition II in red, blue, and yellow 1930 and composition oil on canvas' 1937-42 (Wikipedia.com)



Figure 2.6: Interior design inspired by De Stijl, using basic elements such as lines and analogous color. (forums.massassi.net)

Ludwig Mies van der Rohe who was a famous modern architect adopted the famous saying “less is more” to express his idea about “aesthetic method of organizing the various components of building to create a notion of extreme simplicity, by using every element to do multiple” functioning purpose (Editorial, 2006). What he means, does not refer only for a small space, but his saying refer to have a space, which can be used for more than one function, and take the most advantage from it.

Besides, designer Buckminster Fuller has a famous saying “doing more with less” but he paid more to be oriented towards technology and engineering rather than aesthetic of space. Another designer Dieter Rams has a similar opinion said that “less

but better” and he adopted his saying from Mies van der Rohe’s “structure that he uses, was relatively simple and has elegant designs”. There is a structure that is “determined by playing with lighting, using basic geometrics shapes as outlines; using only single” shapes or using similar shape very rarely for “components to design unity besides, using non fussy bright color combination, usually natural textures and colors, and clean and fine finishes. Sometimes he also used natural pattern of stone” and woods to improve visual aesthetic with using “color brightness, balance and contrast between surface” color (Editorial, 2006).

On the other hand, architect, designer and product designer, Dieter Rom’s motto on minimalism is: “As little design as possible”. Rom always respected the functionalism of Modern Movement that any change in form should be done in a way that makes object safer, simple and easy to use. It can easily be seen that every detail follows the function principle in Rom’s work. In his works, object must avoid negotiation in quality or surface decorative effects, and visually the product must not promise more than it can give, there is a restricted use of color, dominated by aesthetic impact, which is limited by black, clear forms, and by order that balances and harmonizes the visual elements. (Bretoni, 2004, p.104-109) It can be understand from all these statements that there is a strong influence, which adopted from Van der Rohe’s “less is more”. Since he didn’t mention, “what exactly should be less”, or “how much less is still more”, and it has applied to everything but color and texture, many designers have been followed his saying (Cloninger, 2009). What they tried was only emphasized what he said, otherwise, his saying include all of their statement such as “as little design as possible”, “doing more with less”, “less but

better”, as it is appears they tried to manipulated his saying and add something, but his saying covers all of the meanings.

### **2.1.2 Minimalism and Design**

Minimalism is an approach, which can be seen in different disciplines of design. And “although, formally speaking, a Minimalist school of architecture does not exist. Numerous modernist architects have sought purity and rigour in their design which can loosely be termed Minimalist” (Dempsey, 2002, p. 239). For instance, Bruno Munari professional graphic designer writes in *Verbale scritto*, Genoa, 1992 “Making things complicated is easy, it’s simplifying that’s difficult to complicate things you just need to add... everyone’s capable of making things complicated. Few are capable of simplifying. Removing instead of adding means recognizing the essence of things and communicating their essentiality. This process carries us away from time and fashion. Simplification is the sign of intelligence. As it is stated in the words of an old Chinese proverb: “what cannot be said in few words cannot be said in many” (Bertoni, 2004, p.118-121). What they all tried to say is that it is easy to design a complicated space, for instance if you combined five squares to each other, it can be a complicated spaces that works properly but it is hard to use only one square, which work as those five squares.

Francois Burkhardt write on this subject; “Munari and Wilson conceptually adopt the art of ‘removing’: subtracting matter, encumbrance, reducing the object to its minimal physical presence and maximum symbolic charge; in order to attain the stage where nothing more can be removed from the object without perverting it.” (Bertoni, 2004, p.122-127).

So it can be discovered, how the idea of simplicity has entered widely to different figures and cultural areas in time and space and also it has witnessed over past few decades in the field of design, a process of essential simplification and a new arrow on the design legacy of the last century and more.

Famous Italian designer AG Fronzoni claims that a “cube is a cube”. What he means refer to motivating an idea, which materials and forms cannot be considered as secondary elements to dominate human figure. And also nature with its form and color can’t be considered as subordinate elements, and also one person in relation to another. Fronzoni is famous for verifying the possibility of including abstraction in everyday life (Bertoni, 2004, 128-135). In addition, there are other famous Minimalist architects such as “ Luis Barragan, Claudio Silverstrin, Peter Zumthor, and Tadao Ando.” (Bhaskaran, 2005). For instance Barragan is famous for his geometrical purity and bold colors, which he used in painting, sculpture and architecture. (Dempsey, 2002, p. 239)



Figure 2.7: Tadao Ando's Church



Figure 2.8:Luis Barragan's Gilardi House, Mexico City, 1975-77

Minimalism is a philosophy, which can be applied to almost anything in life, because it is more than a style. Minimalism “is about space and light, function and refinement, clarity and precision”. It creates calmness through the chaos and world of complexity of city living. Minimalism offers visual tranquility. “Making use of materials of the highest quality in the simplest and most dramatic ways”, gives a good reason for minimal design (Ypma, 1996).

Minimalism in some space limits only to use nothing more than a single material and simple shape, for instance create visual drama with a single block of wood. When someone stand in minimalist space, he/she must feel entire notion of minimalism and it would be easier by eliminating all distraction, to let only surface's materials make attraction. It should be noticed that, this space must be precise and flawless, otherwise the eye would be distracted. Therefore any objects that is used in the minimalist space must be pure – in form, material and execution. Although in reality the path for achieving these results is complex and difficult. It must be applied in real minimalist space. And John Pawson was a minimalist architect who believed in this

as he describes it with the words: “cutting out the crap”. For him architecture is all rather simple and straightforward; Minimalism is about space, which is qualified by light, geometry, and repetition. But restraint is something he takes very seriously (Ypma, 1996).



Figure 2.9: John Pawson's own house, who design his house with only three materials; Stone, Timber, and white-painted plaster (Ypma, 1996, p.131)

Radical simplification is also evident in the field of design; it has no specified date, and geographical boundaries. Therefore, it is possible to perceive differences in each culture. As it is a more focus in Switzerland in terms of new environmental and ecological requirements: there is a least possible use of natural materials and extremely simplified forms. Therefore, different ideologies, in different regions, create a confusion and every peace of interior space, started to get changed.

For instance, instead of shower enclosure, designers used walls spouting water and floors into which the water disappeared, as if draining into slits in the rock, the anatomical shape of Bathtub was replaced by parallelepiped stone, marble or wood,

the exhausted porcelain form of washbasin was totally abandoned in favor of circular or rectangular stone version, taps, which consider as accessories, disappeared and replaced by simple curved pipes, cupboards has been eliminated as freestanding units, but blended into the walls, the chairs, sofas and armchairs has been reduced to their necessary form by using different plan, the previous tables with traditional material, was replaced by simple but well-crafted wood (Bertoni, 2004).

Le Corbusier once said the eye is naturally drawn to geometric shapes such as squares, circles, spheres and pyramids. John Pawson put the theory to the test in his own house.



Figure 2.10: John Pawson's dining table (Ypma, 1996, p.136)



Figure 2.11: John Pawson Marble bathtub in London house (Toy, 2003, p.117)





Figure 2.12: Japanese oak is used for the floors and also to clad this cast iron bath (Left Photo) (Ypmaa, 1996, p.147). John Pawson cuts the sink from single solid block of stone. (Ypma, 1996, p. 137)

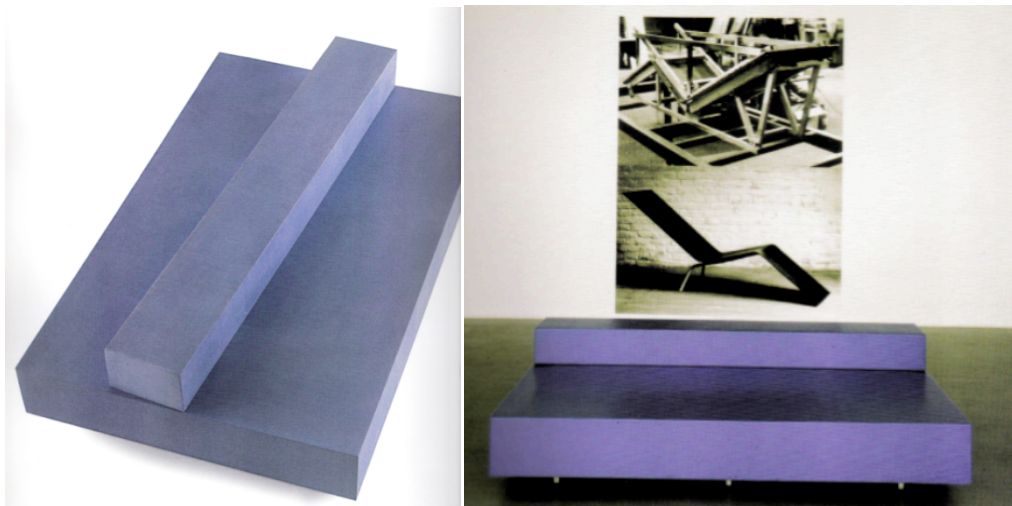


Figure 2.13: Maarten van Severen Blue Bench -1997 (Bertoni, 2004, p.204-05)

There were no more handles on doors and units, light fitting were concealed on wall and ceiling by translucent materials, kitchen became virtually indistinguishable from setting by their geometric solid, and also kitchen was hidden by low walls accessories for the bathroom; small sliding doors help to stored kitchen and hall behind them (Bertoni, 2004). In order to have innovation in all these reduction, handcrafted were added in minimalist interior spaces to suite each individual case and occasion. But usually nothing more than a single material and single shape, which can be created by single block of wood that each piece has the power of

clarity. These are something that can be seen in Ray Key's work, which entire notion of minimalism becomes easier to understand, because he eliminates all distraction that allow true attraction of the material to surface (Ypma, 1996, p117).

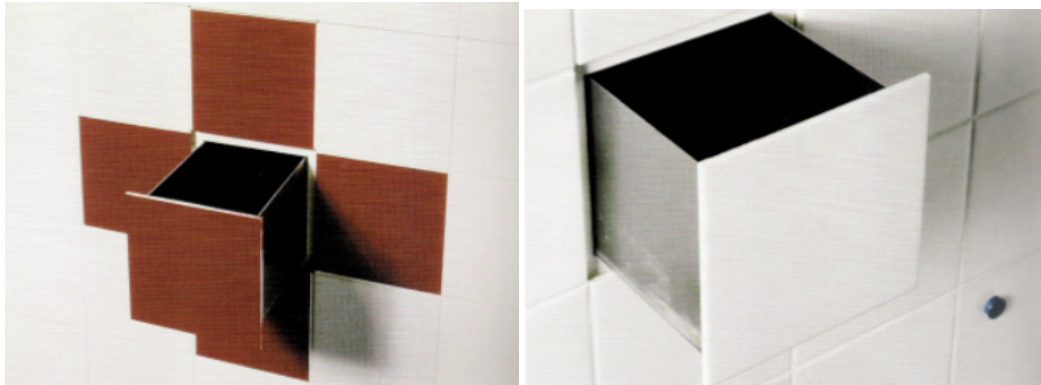


Figure 2.14: Djoke de Jong Red Cross (1997) and Arnout Visser – Drawer (1997)  
(Bertoni, 2004, p.21)



Figure 2.15: A historical pedigree combined with a quality to ensure that pieces such as Ray Key's bowls will one day be seen as a "modern" design classic. (Ypma, 1996, p.121)

### 2.1.3 Minimalism and Color in Interior Design

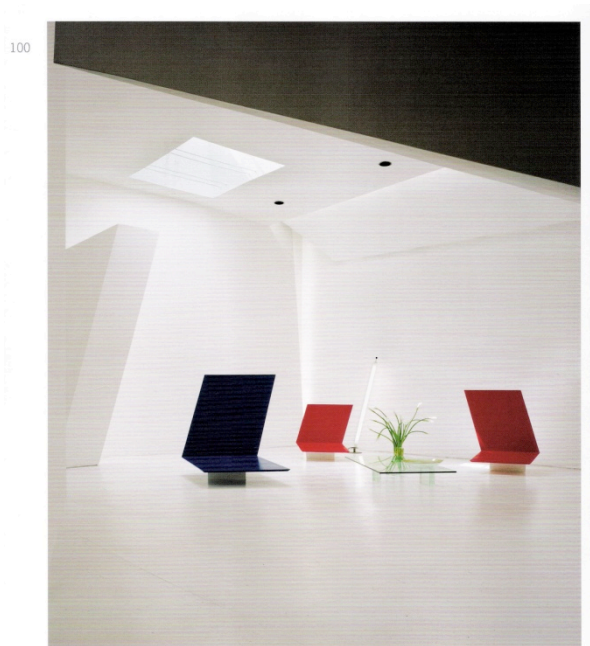


Figure 2.16: Raphael Moneo, Cathedral of Our Lady of the Angles (Meyers , 2006, p.100)

Color is a basic, for everything related to Art, which it help to define its elements, and it played a dominant role in underlying aesthetics of the artworks created, therefore the only design characteristic of design elements, which was not abandon in Minimalist style is color, since it is, the symbol of purity and simplicity. As Ypma stated in his book “London Minimum” on 1996: “Color plays a distinct role in shaping the visual culture .... It is one of the oldest form of communication known, and we are attracted to it like magpies to a shiny object. Colour is simple and pure”. Therefore, color is a characteristic of design elements, which is not needed to be reduced or eliminated, but it is only characteristic in Minimalism which might help to add personality to space. As Leonart, claimed in his book “Minimalism and Color” on 2009 that, “Minimalism is not style, it is about simplicity”. Minimalism has been used on various essential elements, which deals with effects achieved by them. And Minimalist spaces “goes beyond plain white surfaces to incorporate

aspects like textural subtlety and color accents”. Because only whiteness in Minimalist space reminds that, “white light is the origin of the whole spectrum of colors” (Leonart, 2009). It needs an accented color to show how white it is. In general Minimalism is a style, consists of ornamental criteria on color combinations to present harmonious space.

Contemporary’s Minimalism consists of a livable and flexible environment that can accommodate a range of expressions, personalities and activities. Although Minimalism is not a style, where ornamentation plays any role, but today it become merely an ornamental style and has lost the essence of its philosophy (Toy, 2003). As Adolf Loos, clamed in 1908 “cultural evolution is equivalent to the removal of ornament from articles of daily use” and as Le Corbusier affirmed that, which he adopted from the Loos, “the more cultivated a person becomes the more decoration disappears” (Toy, 2003). Therefore, it is clear that eliminating ornamentations was not just an aesthetic direction, but this reductivism was strongly linked with the cultural and social demands of the time. Therefore by eliminating ornament from design, the building’s functional aspects can work perfectly.



Figure 2.17: Seth Stein London house fuchsia form; Complementary color is used to add personality to the space (Toy, 2003, p.50).



Figure 2.18: Morris/Sato Studio in Manhattan's Tribeca, the seating area's variously colored elemental chairs invite movement and reconfiguration, for sitting, lying down or putting one's feet to enjoy the view of the sky (Toy, 2003, p.42)

Contemporary Minimalism has been purified from hundred years of innovation, high-minded design consciousness and social climate, which is not restricted by rule and design that is open to color, curve and candor (Toy, 2003). It is because criticisms often leveled at essential interiors are their perceived lack of personality. In a space, where any color other than white was rejected. However, in contemporary Minimalism color can be used boldly in a way that balance of composition is not disrupted. It can be used quite effectively as an architectural advice.

As it is explained above, color is only elements, which has been used from ancient time up to Minimalism, where aim was to eliminate ornamentations and create a space as simple as possible, and in the minimalist interior space, the only element that can not be eliminated is color, and it is because of its purity and simplicity of its own, which used to emphasize a Minimal space and also give some personality to a space.



Figure 2.19: Richard Rogers, London townhouse; modern classics like Le Corbusier and Perriand's chaise longue and Mies van der Rohe's Tugendhat table; ensure minimal distraction and maximum freedom of light and space to awaken the occupants senses. (Toy, 2000, p.23)

## 2.2 Color in Interior Design

“Color is the visual perceptual property and it derives from spectrum of light - distribution of light energy versus wavelength - interrelating in the eye with the spectral sensitivities of the light receptors. Color categories and physical specifications of color are also associated with objects, materials, light sources, etc., based on their physical properties such as light absorption, reflection, or emission spectra and perceived” (Pile, 1997, 16).

“Perception of color stems from the varying sensitivity of different types of cone cells in the retina to different parts of the spectrum; colors may be defined and quantified by the degree to which they stimulate these cells. These physical or physiological quantifications of color, however, do not fully explain the psychophysical perception of color appearance.” (Pile, 1997,17).

*“Color does not exist until it is seen”*, like a falling tree silently in forest, unless it heard by ears. It could not be said that “seeing” take place in the eye because it does not. The eye “sees” neither color nor what is colored. The light-sensitive area of eye is retina, and it is not like small screen that register images. Arriving light wavelengths only can activate cells in the retina to create minute electrochemical desires, which pass to higher levels in the visual system to decoding and converting to visual images where seeing takes place somewhere in the brain (Miller, 1997, p. 4).

Brightness information processes separately from hue information in visual system. Therefore brightness and hue have their own specific vibrant qualities. Seeing the world rely mainly on brightness differences, however hues add colors to the picture. “Hues interact with one another as hue information is processed through the visual system, the interaction between hues often strongly affects the appearance of each item” (Miller, 1997, p.5).

Radiant light is energy that comes from light source like the sun or light corm. It always remains invisible thus it illuminates the earth or in the dark, moon make it glow, or it creates daylight and drops on a surface, until it go through the earth’s atmosphere. “Radiant energy is the cause of illumination. Although light is invisible, when it illuminates particle in atmosphere, some wavelength are absorbed while others are reflected. The sky is blue because moisture or dust in the atmosphere scatters the short or blue wavelengths, but the longer red wavelengths pass through it” (Kuehni, 1983, p. 19). For instance, people can see rainbows because light is refracted and reflected by spots of moisture or dust in the air. Besides, it is the ambient light that illuminates the day and also makes surface and objects visible.

Without it, the whole world would be like airless moon and there would be a black sky and all surfaces, which receiving direct light would burn and shade and shadow would be frozen (Miller, 1997, p.1-2).

Color derives from light, but there would be no color if the light does not have the wavelength that surface could reflect it. For instance; if green grass and red flowers were put under a sodium vapor streetlight, all of them appear to be dirty gray, because there are no green or blue wavelengths in this light.

Summarily, “Color in the environment is characterized by brightness and hue, color is a general term that includes both brightness and hue, although it is popularly thought of as meaning hue.

- Brightness is determined by amount of light emitted by a light source and reflected by surface.
- Hue is determined by the kind of light- the particular wavelengths in light-emitted by a light source and selectively reflected by a surface” (Miller, 1997, p.3).

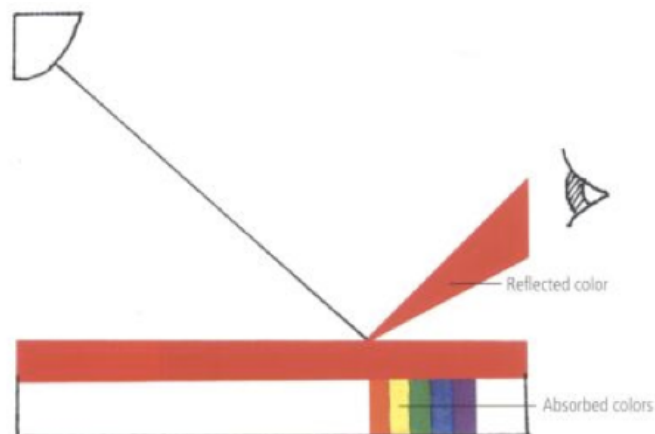


Figure 2.20: perception of color by eye



### **2.2.1 Color is Energy**

The fundamental source of life and all energy on the earth is the sun, however since it's light is invisible, you might be taken its power for granted. You can easily feel the heat that comes from summer sun on the desert, however you can imagine that in that white light, there are luminous inherent spectra hue. It is much more easier to understand, when energy in sunlight is separate and create visible individual luminous color components, which always surround you. As Miller (1997) reclaim that "if white sunlight is invisible energy, the colors reflected from surface color or filtered through a colored gel are visible energy. If light is directed through color filters, such as sheet of colored gel, only those wavelengths that correspond to the color filter can pass through it-all other wavelengths are blocked". The colored gel would not discolor the light, because the wavelengths of color that appears to be seen, its luminous *already exists in the light*.

- Color affects the mood of the viewer, it delights or depresses, it stimulates or calms, and so on.

Expression of the energy and power that color and light transport to an interior, are what colors do. The colors that have been reflected from a surface, possess specific energy characteristic, and obtain a specific energy react in the viewer. (Miller, 1997 p.6)

### **2.2.2 Color groups**

A notional "illustrative organization of color hues around a circle", showing interaction between colors which consists of; "primary colors, secondary colors or tertiary colors, complementary colors", monochromatic colors or analogous colors called color wheel. Similar or in accordance with Isaac Newton's original color

circle, “the arrangement of colors around the color circle is often considered to be in association with the wavelengths of light, as opposed to hues” (Pile, 1997).

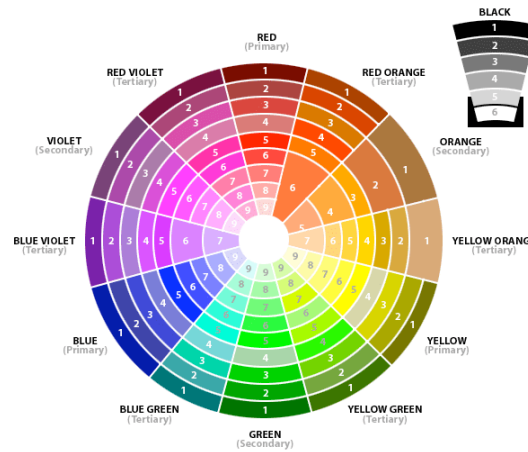


Figure 2.21: Color Wheel

**Primary colors** are those colors that cannot be created by mixing other colors. “The primaries of light are red, green, and blue; those of pigments and dyes are red, yellow, and blue” (Pile, 1997, p.13)

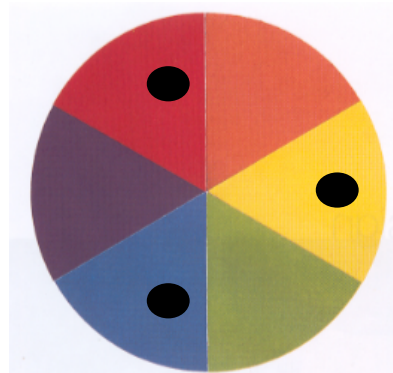


Figure 2.22: Primary color (Pile, 1997, P.12)

**Secondary colors** are those colors, which created by mixing two primary colors. “In pigments and dyes, the secondary’s are orange, green, and violet whereas, in mixing colored light, the secondary are blue-green, violet, and (somewhat surprisingly) yellow created by the mixture of red and green”.

Colors such as green, blue and purple are described as cool, while red, orange and yellow are warm but cool green can be warmed up by adding some yellow to it, while a warm red can be cooled by adding some blue in it.

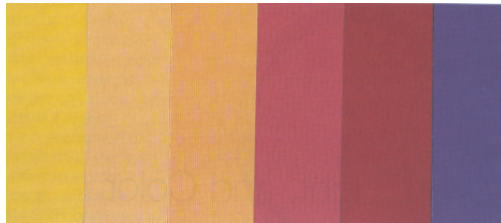


Figure 2.23: Warm colors

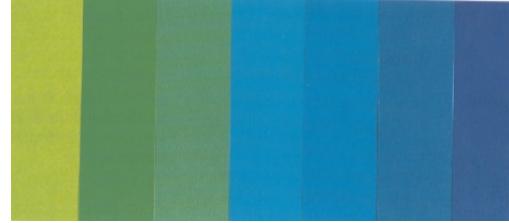


Figure 2.24: Cool colors (Pile, 1997,

p.15)

### 2.2.3 Color Schemes-

**i. Achromatic colors** are, Black, white, and gray.

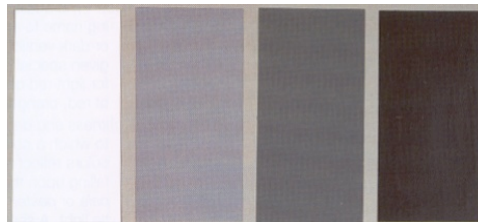


Figure 2.25: Achromatic colors (Pile, 1997, p.13)

**ii. Chromatic colors** are any color other than white, gray, and black.

**iii. Monochromatic colors** “are all the colors of a single hue including tints, tones and shades. Monochromatic color schemes are derived from a single base hue, which can be “extended by using its shades, tones and tints (that is, a hue modified by the addition of black, gray (black + white) and white)”. Therefore, the energy is more delicate and undisturbed due to a lack of contrast of hue. The one way to make Monochromatic color scheme more exiting is to use it in a design with diversity otherwise it may be considered boring” (Pile, 1997, p.53, 80). Tints colors are light

color tone produced by a mixture of a chromatic color with white or light gray and shade color are darker color tones produced by a mixture of chromatic color with black or gray.

**iv. Complementary colors** “are pairs of colors that are of “opposite” hue in the color wheel but in color theory, it only can be called complementary when, the two colors produce a neutral color-grey, white or black by mixing in a proper portion” (Pile, 1997).

“In most discussions of complementary color, only fully saturated, bright colors are considered. However, under the formal definition, brightness and saturation are also factors. Complementary colors are: red and green, blue and orange, yellow and purple. A different complementary scheme is split complementary. This is a color scheme that includes a main color and the two colors on each side of its complementary (opposite) color on the color wheel. These are the colors that are one hue and two equally spaced from its complement like red purple & yellow & green” (Pile ,1997, p.14,54,55,82).

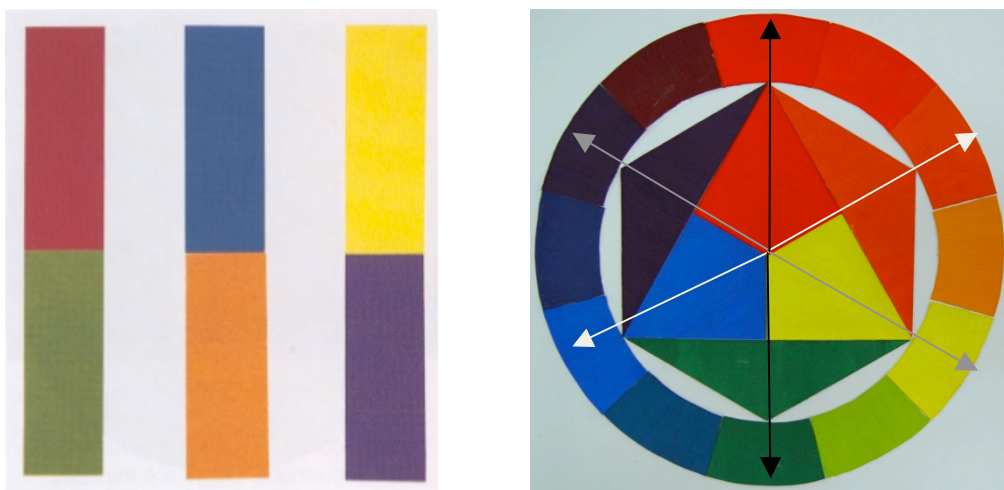


Figure 2.26: Complementary color scheme and split complementary (Pile,1997)



Figure 2.27: Complementary color on Chirstian Dior fashion show and psp’s cover



Figure 2.28: Complementary color on interior and exterior of car (Ford)



Figure 2.29: Complementary color in Interior space (Toy, 2000, p.50)

v. **Analogous colors** “are colors that are neighboring to each other on the color wheel. For instance red, red-orange and orange or green, yellow green, and yellow.

The Analogous color schemes can be found in nature and are pleasing to watch. This color scheme gives a brilliant and cheerful effect in the space, and is able to accommodate many changing moods. When using the analogous color scheme, one should make sure there is one hue as the main color” (Pile, 1997, p.53-54).

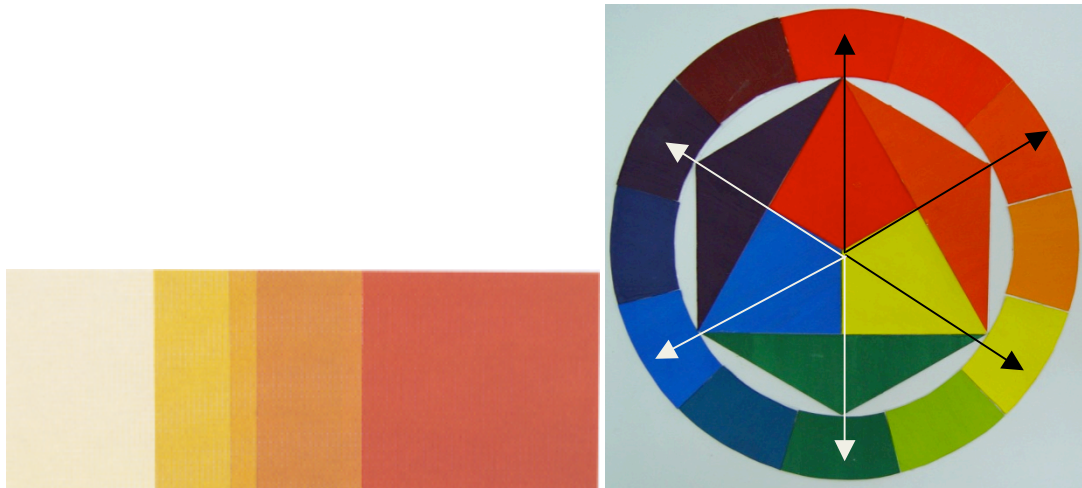


Figure 2.30: Analogous color scheme (Drawn by Author)



Figure 2.31: Analogous color scheme in Interior space and furniture

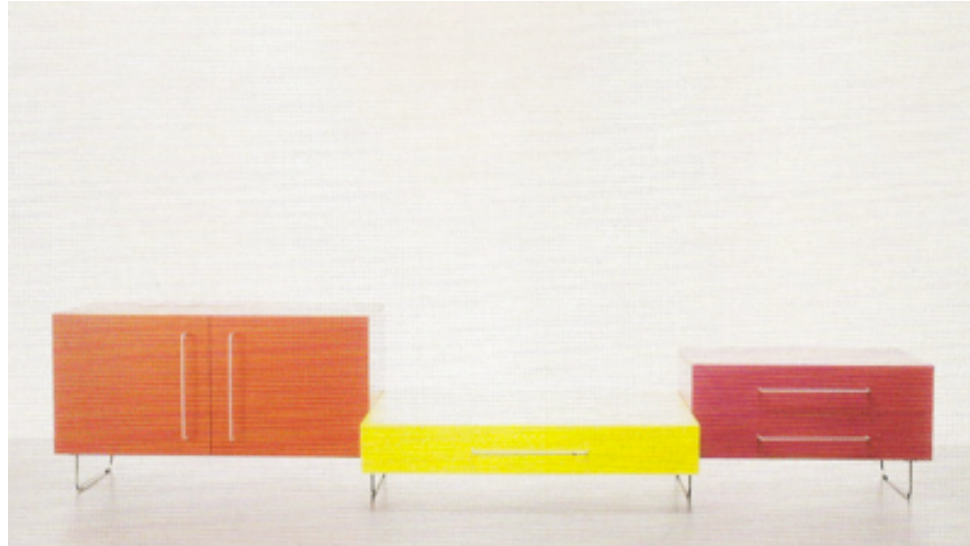


Figure 2.32: Analogous color in design (Bertoni, 2004, p.197)

**vi. Neutral colors:** “A color scheme that includes only colors not found on the color wheel, called neutrals, such as beige, brown, white, black, and gray called **neutral color scheme**.

**vii. Accented neutral color scheme;** a color scheme that includes neutral colors, like white, beige, brown, grey, or black, and one or more small doses of other colors e.g. brown and beige with blue, gray and black with red called **accented neutral color scheme**” (Pile, 1997, p.53-80).



Figure 2.33: Neutral colors

#### **2.2.4 Use/Role of color in design**

Color has a significant role in design and it is one of the primary characters of design elements, which is being used in different design disciplines to create specialty in design. In this section, use, role and significance of color in different design disciplines and use/role of color in interior design with a special point of view, is explored. It is clear that color is a main aspect of successful design. A space that create delightful and suitable impression, through use of color. Even a well-planed space will appear to be depressing, if colors does not work well. Color is very powerful design elements that can change perception or use of a space. When we are limited with space, material and beget that make designer to create confinements projects, the only elements that can help, is color (Pile, 1997, p.5).

“A designer can think about color in two ways: as design or as decoration. Color as design modifies or defines form. It can express history, shape or deepen space, add density, define edge, turn corners. Color as a design element cannot be formulaic, it does not use color in specific terms (red, blue, or yellow) bur rather in terms of what different tonal contrast can do to change a space. Color used as decoration employs specific color to create style. For example, it might deal with a specific fabric that could be enhanced by a particular wall color. Color as decoration uses aspects of history or recreate a feeling. It finds the metaphors in color and provides impact” (Ladau, Smith, & Place, 1989. P.7).

Color has been used in two ways, one as design elements and second as decoration. The main goal is, not to use colors, only as decoration elements and it should be used as character of design elements or at least construct a balance between two uses. “Approaching color is matter of thought before action. It is essential to begin with



concepts, then work toward solution.” (Ladau, Smith, Place, 1989. P.7). It is clear that color is not only passive attribute. It must be used as to reinforce design elements as same as form and materials.

Color can make a design “stimulating, calming, expressive, disturbing, impressional, cultural, exuberant, and symbolic. It passes through every aspect of our lives, make elegant out of the ordinary, and gives gorgeousness and tragedy to everyday objects. If black-and-white image bring us the new of the day. Color writes the poetry” (Holtzsche, 2006. P.2).

Although color can be used by everyone, but color is the most important aspect for designer because forms, colors, and their arrangement are consider as a foundation elements of design, and color is the most important element for designer. “A skilled colorist understands what color is, how it is seen, why it changes, it suggestive power-and how to apply that knowledge to enhance the marketability of a product. Whether the product is a graphic design, an item of apparel, an interior, automobile, toaster, garden, or anything else, proper use of color can determine its success of failure in the consumer market. For designer, color means business” (Holtzsche, 2006. p.2).

Designer uses color because their concern is to understanding what is seen, and if it is seen, how and why it is seen. Their concern is with result not with words, inspiration or reasons. For instance “how colors work is basic knowledge that supports the idea of art of color. Designer must work with color in their every design to have a comfort zone; a strong mix of fact, common sense and perception. An

expert colorist developed the lack of stability of color and uses them to create interest and life in design” (Holtzsche, 2006, p.3).

The use of color can be divided in to six elements; “definition, progression, emotion, aesthetic, manipulation, and dimension”. Definition, fundamentally fixes the boundaries of an object in space. Progression, describes how to move in a space, either literally or visually. It provides succession or progression for a space. Emotion, show aggression to the senses, provides strong feeling or causing strong response to color in a space. Aesthetics uses light and color to extract a response based in history or creative sources. Manipulation, adjusts the perception of a form or space to go well with a precise purpose. Dimension, identifies the particular position of an object or space in terms of adjacent objects or surroundings. It determines relative size and importance. View as entirety, these elements provides a logic or order for using light and color to adjust surrounding environments. (Ladau, Smith, Place, 1989, p.81)

#### **2.2.4.1 Use/Role of color in interior design**

##### **2.2.4.1.1 Color affects perception of spaces**

Color has a strong role that may change the perception of spaces; the feeling it gives to the perceiver. For instance, it can make a sunless room look cooler or make a sunny room, felt uncomfortable. For instance: as Mandelberg states (2007) “if we accidentally use a cool blue-white in a sunless room, the effect will be distinctly chilly. And the reverse is also true a warm white can make a sunny room feel uncomfortably warm”.



Figure 2.34: Example of interior spaces with warm and cool colors (Mandleberge, 2007, p.97) and (Schleifer, 2005, p.141) (Right Picture)

Although it is possible to measure physical temperature of a room with thermometer, perception of coolness or warmth is not measurable. Perception of room temperature is quite relate to light in color, color surface, and texture of material, and it is quite different from physical temperature of a room as Miller (1997) claim that “although some warmth seems to be essential in order to “humanize” architecture, people vary in their preferences for warmth or coolness”.

Perceived room temperature is resistant by the perception of the coolness or warmth of colors as Mandleberg (2007) assert that: “You sense when you walk in to a warm cozy room, or when a room feels clinical and less inviting, this is because some colors are cool, while others are warm”. What is important to know, though, is that cool colors look as if they are retreating, or moving away from you, while warm ones tend to move towards you. This means that a room with walls painted in a cool blue will look larger than it actually is.

*What color does?*

- “Color that advance or recede

As Miller reclaim that in 1997 “Color on interior surface can enhance the eligibility of environment or create illusion, because they perceived to advance and recede. Colors are generally regarded as more advancing as they become”;

- Lower in Value
- More highly saturated, and
- Warmer in hue

Advancing or receding is relative characteristic determined by making comparison.

- If two advancing colors appear together, one may seem somewhat more advancing than other.
- If two receding colors appear together, one may seem somewhat more receding than the other.

“A color may have both advancing and receding characteristics, depending on which characteristics are dominant in its intermix and which are subordinate. Value, of the darkness or lightness of color, and saturation, its vividness or grayness, can be more important characteristics of a color than hue in determining the spatial quality of color”.

For instance, “hottest and most advancing hue”, that is orange-red, can be describe as “pale, grayed pink” if it were high in value and low in saturation with one advancing characteristic and two receding characteristics.

In opposition, “the coolest and most receding hue”, that is Violet-blue, at “high-saturation and middle-value range”, appear to be hot. A pale blue with high saturation, can come into view pretty advancing, even more advancing than orange brown with low-saturation.

“Lightness, grayness, and blueness” appear to give distance to any color, “making it appear to recede”, like foggy atmospheric condition that make mountains come out “lighter, grayer and bluer” in distance.

- Color affects the size, shapes, and location of things and the sizes and shapes of enclosures.

“Color can extend walls, raise ceiling, eliminate corners, reaching beyond the limits of construction”, it can form a new space whose boundary are defined purely by the spectrum, whose geometry consists not carpenters planes, but of the lines where one hue begin and another one end. “Color create an architecture all its own” (Kaufman and Duhl, 1992, p.15)

As Miler state in 1997, “color on interior surfaces provides a powerful enhancing the legibility of the interior or for creating illusion. The physical structure hold the building together, but color defines the visual structure”. For instance; white wall surfaces expand the space, whereas black walls close in on you, like the night (Miller, 1997, p. 5)

The concept of interior space can be “room or space-bounding surface and spatial volumes” in this case determining use of color in interior space, is possible. A room can surround you with color, still “what does the color do to the space”? Color on wall defines room boundaries and also it effect height of room when it applies on floor and ceiling.

Rooms are most of the time, Boxlike, which can be found in offices, homes, hospital, schools, and everywhere else. Every so often the familiarity of a small-

enclosed space is desirable, still challenging in design made designer to “get the room out of box”.

If the room is larger with more window area, “the less the sense of confinement”. As Mock reclaim in 1946 that “continuous color on surface of a room can exacerbate the sense of confinement, particularly if the room is small, square or nearly so, and if it has no outside view”.

Also for this purpose Miller (1997) state that “Advancing color on all surfaces of a room closes in on the viewer to a greater degree than does receding color, which could make the enclosure seem comparatively larger.

Advancing color would be good if, they use in large spaces, like, auditoriums and Hotel’s Lobby, also it can be used in small spaces like, bistros or dens. They should be used for short period of time, because they may be dramatic in small spaces, like power room and foyer. And even advancing color can be used effectively in small living room, if the desirable to emphasize the sense of enclosure (Miller, 1997, p14).

“Neutrals and soft receding tints in medium to high value are popular background, especially for small rooms or where color is not intended to be the start performer, they lie flat on a surface and are nonintrusive, allowing the attention to be directed toward people and their interaction and activities, furnishing, art, the architecture, function, or whatever the occupants consider important” .(Miller, 1997, p14).

- Color affect the size and propotion of the enclosure;

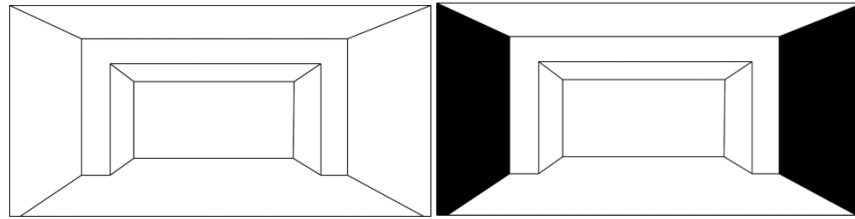


Figure 2.35: All white interiors for comparison (Left Photo), Enclosure appears narrower and higher. (Re-Drawn by Author) (Miller, 1997, p.17).

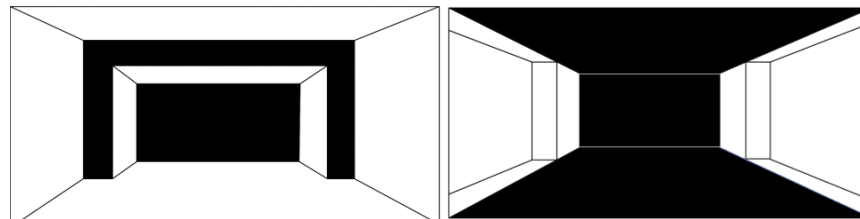


Figure 2.36: Enclosure appears shallower as the back is brought forward (Left Photo), Enclosure appears wider and shallower and the ceiling appears lower. (Re-Drawn by Author) (Miller, 1997, p.17).

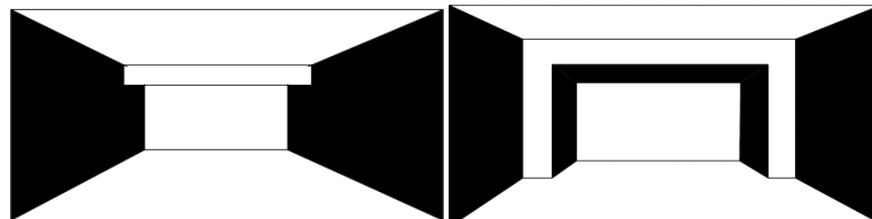


Figure 2.37: Enclosure appears narrower and deeper and the ceiling appears higher (Left Photo), The structure appears warped. (Re-Drawn by Author) (Miller, 1997, p.18).

#### 2.2.4.1.2. Color in Principles of Design

- *Color used to create contrast*

While the eye sees an object that has 2 surfaces or an edge, it can be distinguished color on both sides and it compares the color on both sides of it and computes and maximize the differences (Miller, 1997). This visual phenomenon is known as simultaneous contrast. Contrast could be achieved with the use of light color together with dark color where it makes dark color appear darker, and dark color make light

color appear lighter. Besides, complementary colors intensify one another. And hues adjacent to one another on the color circle seem to “push each other part”, as their differences are maximized. Also use of vivid colors will make grayed colors appear grayer, and grayed colors make vivid colors appear more vivid. (Miller, 1997, p.61).



Figure 2.38: Robert Apartment in New York, USA  
(Simultaneous contrast make opposite color to come out) (Ojeda &, Mccown, 2003, p.13)

For example, in a built structure that consists of several small spaces, rather than a large multi-function space, one of the spaces can be painted in bold color to make an effective contrast with the rest of the building. However, it is important to be aware in using colors that have same respond, for instance using a color group in spaces moving from green to gray, the eye obtain the same respond as previous color. As Miller (1997) states: “The brightness and hue of a space which you enter will be influenced by the brightness and hue of the space that you just left.” The bright interior space will get brighter, while eye adopted the darkness or as Gerritsen exemplifies: “Magenta will appear more intense if a cyan has been seen first. A yellow will look yellower if the eye is adopted to a blue surface just before viewing and so far” (1983, p138).





Figure 2.39: Swimming pool-Le Bans, France.  
*(Bright colors used in one corner to create contrast in an interior space dominated with white color) (Jodidio, 2010)*

- *Color used to add interest to a space*

Strong colors, as well as textures and bold pattern can be used to add interest to a space; however, when adding them, it is important not to make the space feel disjointed and uncomfortable. One way to avoid this problem is to use contrasting colors of complementary color schemes. For example, a tone of orange to contrast with tone of blue, or soft chartreuse to complement pale blue. These attractive contemporary combinations will add variety to a scheme without making the contrast feel too harsh and obvious. (Mandleberg, 2007)



Figure 2.40: Using accented color for walls and yellow for entrance. (Ojeda &, Mccown, 2003, p.187)

Alternatively, an accent color can be introduced with an additional design element. For instance in a residential interior space, in a living room this accent can be obtained with the use of accessories such as a collection of bottles or some cushions or throws-or use a beautiful two-tone wallpaper on just one wall, or in a bedroom with a fabric panel to make an unusual bed head.



Figure 2.41: Additional design elements with accent color.

On the other hand, boldly contrasting color can work well too, but should be its use should be limited that it doesn't overpower the space, while using a strong color, it can be used as an accent for example a red chair in pale gray room, or a modern zingy orange roll top bath in a white bathroom (Mandleberg, 2007).



Figure 2.42: Using red and purple and combined with yellow and blue. Although colors are bold, the scheme does not feel overwhelming. (Ojeda & Mccown, 2003, p.183)

- *Color reinforces unity in the space*

Unity is one of the general principles of design that known as the law of arrangement, where elements and structures have a visual connection and appeared as they form a complete entire piece of work (Chang, 2002).

“Unity refers to a sense that everything in the artwork belongs there, and makes a whole piece. It is achieved by the use of balance, repetition and/or harmony in design. Giving these similar features like a shared Complementary or same color floor design can unify two objects like a living room and a dining room. Unity helps

the objects like furniture look like they belongs together. Unity is also achieved when the object like a fixture such as a scone looks like it belongs in its room” (Slideshare.net).

1. Colors play major key to create a sense of order in unity. A constancy of dimensions and forms, a harmony of color or pattern repetition of key elements, harmonizing them throughout the composition, adding a little variety for providing sense of personality.

2.The only design that can be considered as one piece, and not as separate elements, is a design that have unity, it gives elements the appearance of completeness that they belong together. In order to have unity in a space, designers must be avoid using to many forms, unless they need to create a disorder and complicated design (Slideshare.net).

It is important to consider the area as a whole. For instance, in a small space, in particular, it is important to choose a color scheme that will bring scenes of unity to the space; a color scheme based on a monochromatic color scheme. For instance, Mendelberg states that in a residential space “We should try carrying the chosen color through every space of the house, varying it slightly from one area to another with changes of tone and shade, we should be picking out different accent colors, perhaps, and adding patterns and texture” (Mandleberg, 2007 p. 109).

And also giving these similar features like a using Monochromatic or same color floor design can unify two different functions like a living room and a dining room. . In this term color has major effect for achieving unity in space, because using

Monochromatic or even same color for different function can help to have unity in space.



Figure 2.43: Gamma-Isaa House, Brazil, using white color for different element create a unity to the space (Schleifer, 2005, p.183)

- *Color creates similarity in the space: to reinforce unity.*

“Objects that are similar, with like components or attributes are more likely to be organized together and perceived to be more related. Repeating colors, shapes, values, textures, or lines to create a visual relationship between the elements: unify all parts of a design because it creates a sense of consistency and completeness” (Schamber, 1986).

“Through repetition of color, size, orientation, texture, font, shape, etc. we can design elements so they appear more related. Assuming they are all blue and underlined they clearly send a message to the viewer that they are related” (Venseodesign.com).



Figure 2.44: Similar colors create visual relationship

As it is shown at the above example “Color has been used above to denote similarity in the image above. You should see alternating columns of black and red squares. Each column is determined by the similarity of color of the circles that make up the column” (Vanseodesign.com). For instance repeating same color for furniture, lighting and structural element, create visual relationship between them.

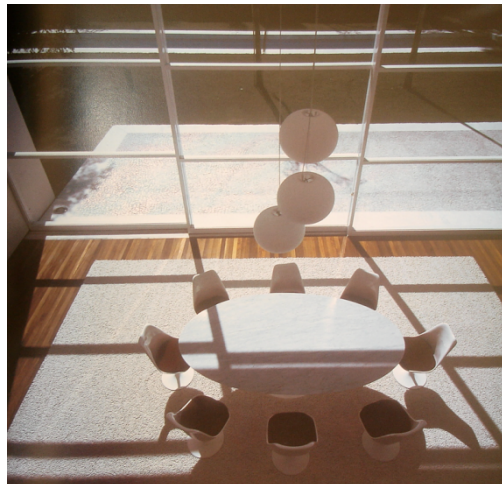


Figure 2.45: Gamma-Isaa House, Brazil (Schleifer, 2005, p.181)  
(Using white color for Walls, Furniture, Soft-Furniture, Lighting and Structural elements increase visual relationship to whole space)

- *Color can be useful to create proximity in the space: to reinforce unity.*

In order to create a one cohesive group rather than a cluster of unrelated elements, items need to be grouped together. Therefore the only elements that are positioned close to each other can be considered related, whereas elements that are farther apart are perceive to be less related. In general any items that are close to one another are

perceived to be more related than items that are positioned farther apart (Vanseodesign.com).



Figure 2.46: Proximity in form is stronger than using same color

As it is appear above, these three groups of black and red circles creates proximity. But the position of the circles near each other creates stronger proximity “than the similarity of the colors. In a larger composition, the color similarity would still correspond to the objects, because of the similarity between them”.

It is possible to produce harmony in interior design by locating similar objects near each other or placing them closer together physically. For instance, it is not appropriate if different furniture styles with different colors placing near each other in a small bedroom but it would be look proper if the same furniture placed further apart in a large living room (Schleifer, 2005, p.45).



Figure 2.47: Ciatti House, Italy (Schleifer, 2005, p.45)

- *Color used to create a focal point (Dominance)*

Dominant (*adj*) – “commanding, controlling, or prevailing over all others. By the given definition of dominance it wouldn’t be too hard to understand it as a design component. Therefore when designers try to create dominance in their work, they are creating elements that draw attention and triumph over other elements. Every design should have a primary area of interest or focal point that serves as a way into the design. From the primary dominant element, design flow can be achieved by creating elements with secondary and tertiary dominance” (Vanseodesign.com).

The best way to create dominance is to use contrast, since without contrast everything would be the same. “It might even appear of dominance as contrast in extreme, though it doesn’t have to be. Consider two squares of different sizes. The larger square will probably dominate (even if it’s only slightly larger) and the greater the difference in size between the two squares the more the larger will dominate the smaller” (Vanseodesign.com).

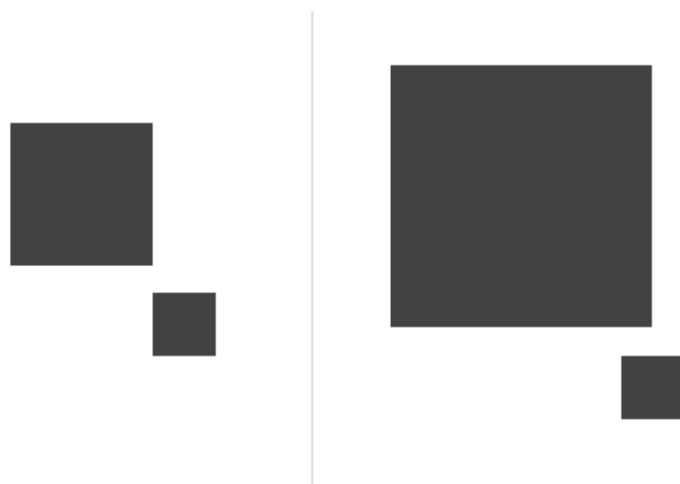


Figure 2.48: Dominance

“In the image on the left the larger square dominates the smaller square, though not



to the extent that the larger square in the image to the right dominates its smaller sibling” (Vanseodesign.com).

More visual weight to elements might be added through: by changing its size, by playing with the weigh of its colors, by changing its density, and by ranging its value. Creation of a point of interest, will take the attention of the viewer (Vanseodesign.com).



Figure 2.49: Kandinsky’s Painting

For instance, “When seeing Kandinsky’s painting above it appears more than first notice the dark circular form in the upper left. This is the focal point and thus the entry point into the painting. The focal point captures your attention and from there your attention flows to other parts of the painting” (Vanseodesign.com).

In this term, color can be used to create a focal point or to make emphasis. There are several methods and uses of color to emphasize a focal point in the space. For instance, by painting one wall or a dividing panel, or placing a brightly colored special element can create focal point.



Figure 2.50: Ibirapuera Auditorium, Brazil  
(Create focal-point with using red color at the ceiling makes people to come and see upper floor) (Jodidio, 2007, p.390-91)

Consequently in order to analyze Minimalist interior spaces, each of these color characteristic, such as color perception, color principle and color scheme must be analyzed to achieve the key role of color in Minimalist interior spaces.

Accordingly, use of color in interior design can be summarized as a result of literature review and will help to develop inventory forms for the assessment as follows:

Table 2.2: List of parameters of use of color in interior spaces.

<p>1.A) Color affects perception of spaces</p> <ul style="list-style-type: none"><li>• Use of cool color give the feeling as if they are retreating</li><li>• Use of warm color give the feeling as if they move towards</li></ul> <p>B) Color enhances eligibility of spaces.</p> <ul style="list-style-type: none"><li>• Create illusion: they perceived to advance and recede, due to selection of all different saturation levels.</li></ul>
<p>2. A) Color affects appearance of spaces.</p> <ul style="list-style-type: none"><li>• Contribute to size and shape of enclosure</li><li>• Give emphasis to meaning of enclosure</li></ul> <p>B) Contributes to size and proportion of space</p> <ul style="list-style-type: none"><li>• Look larger – appear to be expanded</li><li>• Look smaller – appear to be close in</li></ul>
<p>3) Color used to reinforced principles of design</p> <ul style="list-style-type: none"><li>• Use to create contrast:<ul style="list-style-type: none"><li>- Light color with dark color</li></ul></li><li>• Use to add interest to space.<ul style="list-style-type: none"><li>- Strong colors, textures, and blood pattern.</li><li>- Use of accent color.</li></ul></li><li>• Reinforce the unity in a space.<ul style="list-style-type: none"><li>- Use of similar features.</li><li>- Consistency of color and shape</li><li>- Repetition of key elements in color</li><li>- Use of same color on different shapes</li><li>- Grouping similar colored objects.</li></ul></li><li>• Contributes to the creation of focal point<ul style="list-style-type: none"><li>- Larger colored elements</li><li>- Lighter element in a darker space</li><li>- Colored element with exaggerated shape</li></ul></li></ul>

## **Chapter 3**

### **ASSESSMENT OF USE OF COLOR IN MINIMALIST INTERIOR SPACES**

#### **3.1 Method of Analysis**

To find how color used in the Minimalist Interior spaces, it is aimed to select Minimalist interior spaces from different regions of the world such as Asia, East Europe, West Europe Africa, North America, and South America. Besides, cases with different functions have chosen in the mentioned regions. Accordingly the target was to have 48 cases (6X8=48) chosen from different publishing, which, are published in minimalism books from 2003 to 2010.

Therefore in order to analyze those Minimalist interior spaces, an Inventory has been designed, which consist of three main section, first color perception, second color in principle of design and third preferred color scheme. The color perception has been dealt in this inventory to understand color characteristic in the interior space, if it has a Recede effect or it has Advance effect; why it is Recede or Advance and which is used more than the other. The second phase, assess color as a character of design elements and its usage in principle of design. To explore if it helps to achieve Unity, provide Similarity, if it is grouped for Proximity, if it creates Contrast, or dominates Focal Point. The third section evaluates, Color Scheme, which has been used mostly in Minimalist interior spaces. Assessment is made through seven color schemes such as Achromatic, Chromatic, Complementary, Monochromatic, Analogous, Neutral, and Accented Neutral.

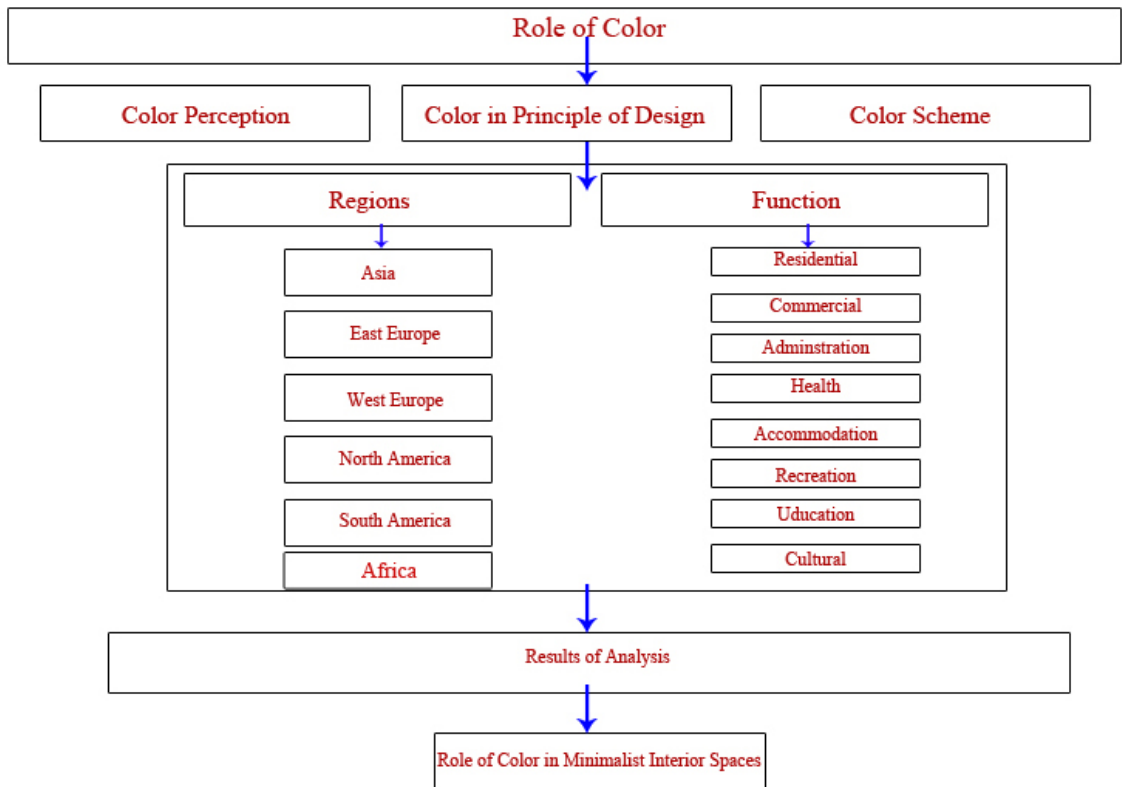


Figure 3.1: Scheme of Analysis

The color perception has been dealt in this inventory to understand color characteristic in the interior space

The second phase, assess color as a character of design elements and its usage in principle of design

The third section evaluates, Color Scheme, which has been used mostly in Minimalist interior spaces.

Perception of Color	Advance	Higher in Value				
		Saturation Level	High			
			Medium			
			Low			
		Warm in Hue				
	Create illusion					
	Legibility enhanced					
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating			
		Legibility enhanced				
	Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of The Enclosure	
		Space Looks Larger	Space looks smaller		Define boundary of the space	Give emphasis to Meaning of enclosure
Appear to be Close in		Appear to be expanded				
Color in Principle of design	Contrast					
	Add Interest to a Space	By using strong color				
		By using accent color on additional element				
		By using strong contrasting color				
	Unity	Make visual connection				
		Consistency of color and shape				
		Repetition of key elements in color				
		Separated elements looks as one piece				
	Similarity	Using repeated color in basic shape				
		Having same color for different shape				
	Proximity	Feeling of consistency and completeness				
Cohesive grouping						
Same position of colored elements						
Focal Point	Similar object near each other					
	Larger					
	Denser					
	Lighter					
Point of interest	Darker					
	Exaggerated shape					
Color Scheme	Achromatic Color					
	Chromatic Color					
	Monochromatic Color					
	Complementary Color					
	Analogous Color					
	Neutral Color					
	Accented Neutral Color					

Figure 3.2: Example of the developed inventory for analysis

Through random sampling method, 17 books published between 2003 to 2010 has been overviewed in order to find 8 examples from 6 regions with different functions. However, aimed number of examples could not be achieved. As a result, 25 examples are found from the overviewed publications (See Figure 3.1).

Cases were selected accordingly:

- More than 80 examples have overviewed.
- There were cases, which was given as minimalist however neglected due to classical details existed in some part of them.
- Minimalist spaces, which have colored elements and component, have preferred in selection.
- Cases which have details in line with prescription of the minimalism, and have characteristics which was described in the definition of minimalism have chosen .

Table 3.1: Case Studies

Name	Region	Function	Visual Info
University Library	Amsterdam, W.E	University	
Florida Museum of Art	Florida N.E	Museum	
Modern Contemporary Art	Australia, A	Exhibition	
University of Nucia	Nucia, Spain. W.E	University	
Faculty of Technology and Management	Beja, Portugal, W.E	University	
St Pancras Offices	Netherlands, W.E	Office	
101 Colourful Office	Panama, North America	Office	
Met Hotel	Greece. E.E	Hotel	
Bains France	France W.E	Pool	
Madras Fabric	London, W.E	Shop	
Wolff Poeschl, Mayrhofer	Linz, Austria .E.E	Shop	
Issy Miake	New York N.A	Shop	
Long Bubble 32	Beijing, China , A	Exhibition	
3 Dental Clinic	Vienna, E.E	Dental Clinic	
Burnet Office	Singapore, A	Office	
Distrito Capita	Mexico City, S.A	Hotel	
Hosting Offices	Spain. W.E	Office	
Empire in Paris	Paris, W.E	Shop	
Ima Issa House	Sao Paulo, S.A	Residential	



Each case study has been coded according to the function and Regions. For instance, a Residence in Asia, has been coded as AS-R1 (Figure 3.2)

**Case areas selected at Asia are categories**

- Residential space; AS-R4
- Cultural space; AS-E2, AS-E3
- Administrative; AS-O3

**Case areas at East Europe are categories**

- Residential space; EE-R1
- Cultural Space; EE-E1
- Commercial; EE-S1
- Touristic: EE-H1

**Case Areas at West Europe are categories**

- Residential; WE-R2, WE-R3
- Commercial; WE-S2, WE-S3
- Administrative; WE-O1, WE-O2
- Recreation; WE-P1
- Educational; WE-U1, WE-U2, WE-U3
- Health; WE-D1

**Case areas at North America are categories**

- Cultural; NA-E4, NA-E5
- Commercial; NA-S5
- Administrative; NA-O4

**Case areas at South America are categories**

- Residential; SA-R5
- Touristic; SA-H2

## Case areas at Africa are categories

- No proper example found (See Table 3.1)

Table 3.2: Case studies in different Regions

		Region					
Function	Residential	Residential	East Europe	West Europe	Asia	North America	South America
			Scenography EE-R1	Casa son Vida WE-R2	Small Apt AS-R4		Gamma Isaa SA-R5
				Ciatti House WE-R3			
	Cultural	Exhibition	Tampa EE-E1		Hutong Bubble AS-E2	Bed With Platform NA-E4	
					Sherman Contemporary AS-E3	Untitled NA-E5	
	Commercial	Shop	Jeweler Mayrhofer EE-S1	Kvadrat Fabric WE-S2		Issy Miake NA-S5	
				Camper Paris WE-S3			
	Administrative	Office		Post Panic WE-O1	Leo burnett AS-O3	Modern Colorful NA-O4	
				Dianhosting WE-O2			
	Recreational	Pool		Le Bains Farnce WE_P1			
Education	University		University Library WE-U1				
			Seu University WE-U2				
			Sh of Technologyt WE-U3				
Health	Dental Clinic		Gkk WE-D1				
Touristic	Hotel	Met Hotel EE-H1				Distrio Capital EE-H2	

## 3.2 Assessment of Result

There are total 25 case studies that were analyzed in 5 regions of the world: Asia, East Europe, West Europe, North America, and South America. 4 case studies analyzed at the Asia, 4 case studies at the East Europe, 11 case studies at the West

Europe, 4 case studies at the North America, and 2 case studies at the South America. There are 5 Residential, 5 Cultural, 4 Administrative, 1 Recreational, 3 Educational, 1 Health, 2 Accommodation, and 3 Commercial spaces. (Table 3.1)

Cases are evaluated under 3 sections. First, according to the use of color and the effect on perception: second, use of color as a design element and its usage in principle of design: third as a color scheme to clarify, which color scheme is the most preferred in Minimalist Interiors. A comparative analysis carried out due to selection of case areas from different regions of the world and with different functions. This will lead this research to a conclusion to achieve similarities and differences of the use of color in Minimalist interior spaces at different regions and interior spaces having different functions.

### **3.2.1 According to Perception**

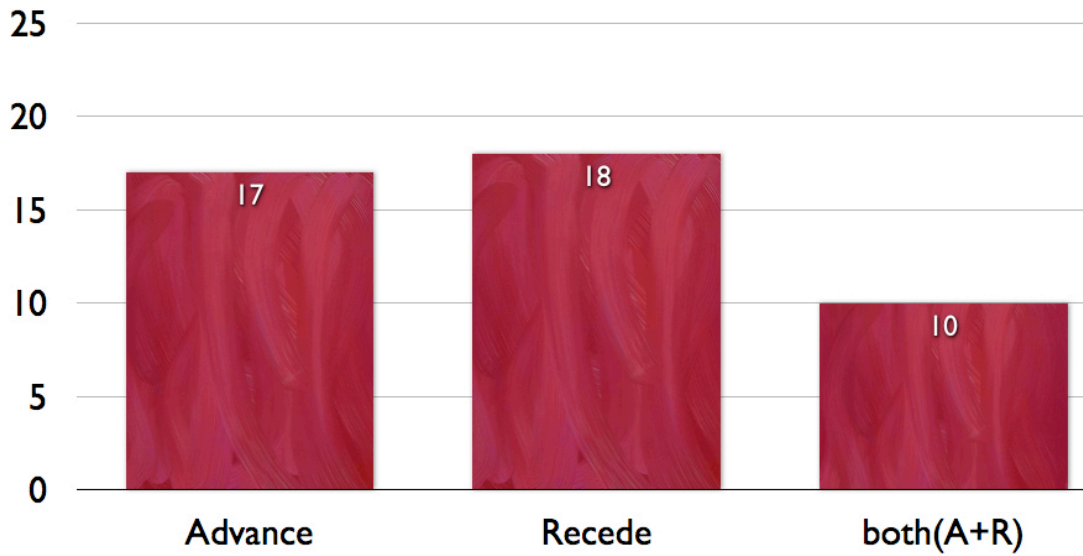
At first selected case studies have been analyzed in order to find effect of color on the perception of spaces.

There is a possibility that both Advance and Recede color has been used together in a space.

#### **3.2.1.1 General result (Perception)**

As the result of the assessment, it has been achieved that at 17/25 Case Studies, Advance color have been used, and at 18/25 Case Studies, Recede color have been used. Also both advance and Recede color have been used in 10 cases.

Chart 3.1: Color Perceptions



As it is given in the below cases effect of use of advance and recede colors are as follows.



Figure 3.3: Example 1 (Color Perception)

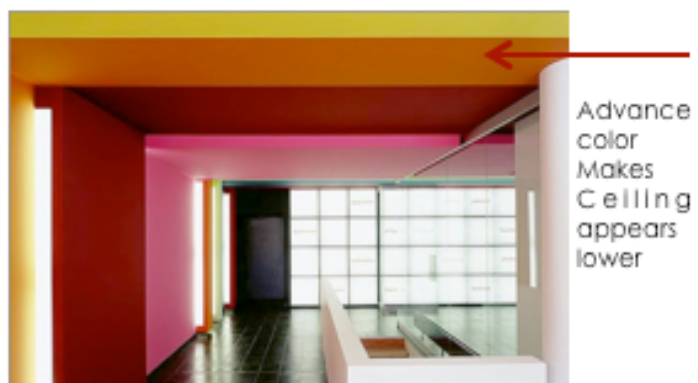
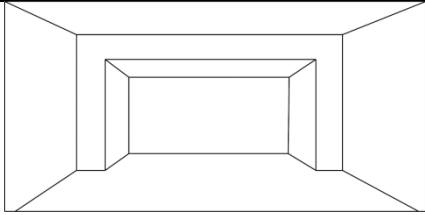
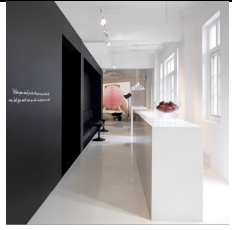


Figure 3.4: Example 2 (Color Perception)

Table 3.3: Case Studies with Recede and Advance Color

								
			<p>Enclosure appears narrower and higher</p>			<p>Enclosure appears shallower as the back is brought forward</p>		
								
								
								
								
<p>Enclosure appears wider and shallower and the ceiling appears lower</p>			<p>Enclosure appears narrower and deeper and the ceiling appears higher</p>			<p>The structure appears warped</p>		
								
								

### 3.2.1.2 According to Region (Perception)

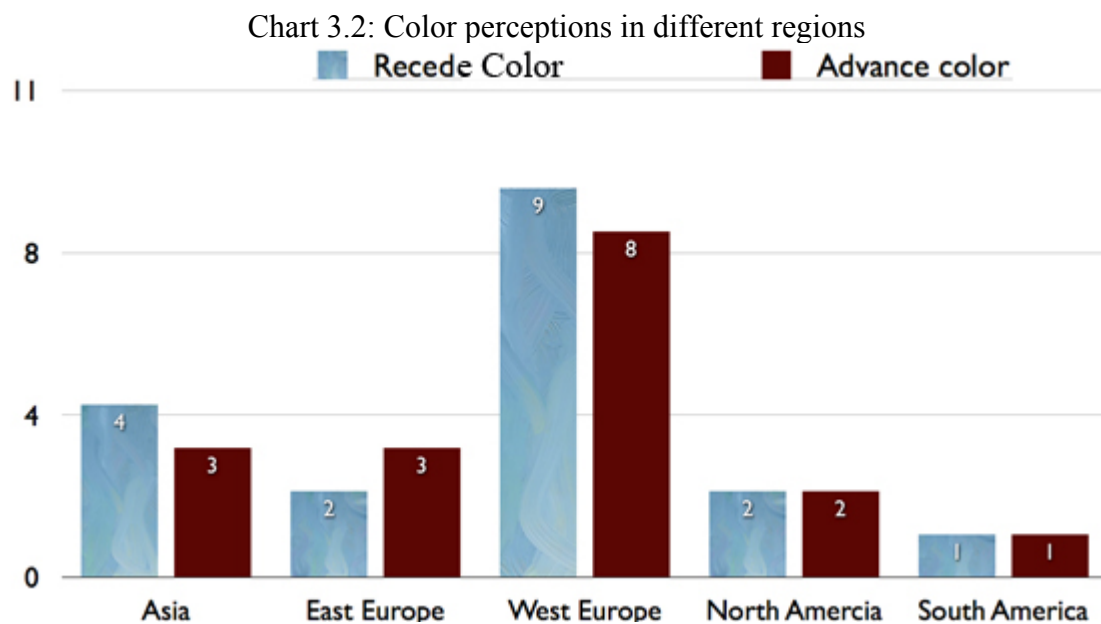
In Asia, Recede color is used in 4/4 case studies, and Advance color is used in 3/4 of the Case studies.

In East Europe, Recede color is used in 2/4 case studies, and Advance color is used in 3/4 case studies in East Europe

In West Europe, Recede Color is used in 9/11 case studies, and Advance color is used in 8/11 case studies in West Europe

In North America, Recede color is used in 2/4 case studies, and Advance color is used in 2/4 case studies in North America

In South America, Recede color has been used in 1/2 case studies, while Advance color has been used in 1/2 case studies in the South America.



Except the E.E where advanced color used more than other recede color, in all other regions recede color used more than advance color or they are equal.

### 3.2.1.3 According to Function (Perception)

In Residential spaces Recede color has been used in 4/5 cases, while Advance color has been used in 3/5 cases.

In Cultural spaces Recede color has been used in 2/5 cases, while Advance color has been used in 4/5 cases.

In Administrative spaces Recede color has been used in 3/4 cases, while Advance color has been used in 2/4 cases.

In Recreational spaces Advance color has been used in a case study.

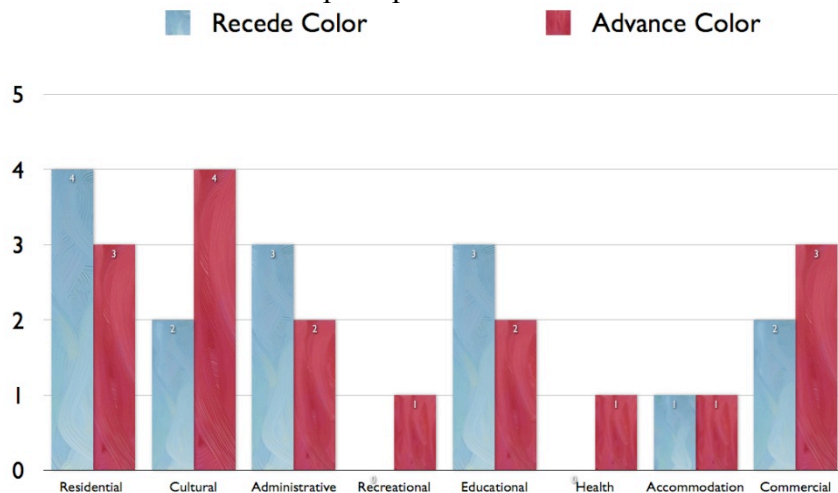
In Educational spaces Recede color has been used in 3/3 cases, while Advance color has been used in 2/3 cases.

In Health spaces Advance color has been used in the selected case study area.

In Accommodation spaces Recede color has been used in 1/2 cases, while Advance color has been used in 1/2 cases.

In Commercial spaces Recede color has been used in 2/4 cases, while Advance color has been used in 3/4 cases.

Chart 3.3: Color perceptions in different functions



There are differences between Commercial and Cultural spaces with the others in the way of use of Advance color more than Recede color.

Table 3.4: Perception of color, which consists of Advance, Recede colors

Minimalist Space		Role of Color in Interior Space	
		Perception of Color	
			Advance
Asia	Residential	■	■
	Restaurants		
	Exhibitions	■ ■	■ ■
	Shop		
	Dental		
	Offices		■
	Pool		
	University		
	Hotel		
	East Europe	Residential	■
Restaurants		■	■
Exhibitions		■	■
Shop		■	
Dental			
Offices			
Pool			
University			
Hotel			
West Europe		Residential	■
	Restaurants		
	Exhibitions		
	Shop	■ ■	■
	Dental	■	
	Offices		■ ■
	Pool	■	■
	University	■ ■	■ ■ ■
	Hotel		
	America	Residential	
Restaurants			
Exhibitions		■	■
Shop			
Dental			
Offices		■	
Pool			
University			
Hotel			
South America		Residential	
	Restaurants		
	Exhibitions		
	Shop		
	Dental		
	Offices		
	Pool		
	University		
	Hotel	■	
	<b>Total</b>		<b>17</b>

The only regions where Use of advance color is more than recede color is East Europe

In North and South America, recede and Advance color used Equally



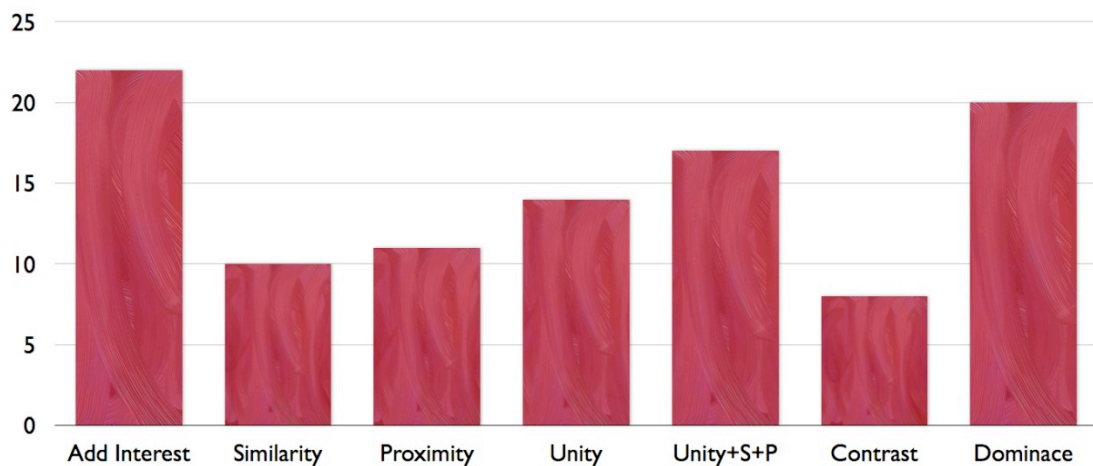
### 3.2.2 According to Design Principles

Case study areas have been analyzed in terms of color use and effect supporting the principle of design such as Contrast, Dominance, Unity, Proximity, and Similarity.

#### 3.2.2.1 General Result (Design Principles)

At 8/25 case studies, color used to create Contrast in the space, at 22/25 case studies, color used to Add interest to the space, at 14/25 Case studies, color used to create Unity in the space, at 10/25 Case studies, color used to create Similarity to reinforce unity in the space, at 11/25 Case studies, color used to create Proximity to reinforce unity and grouping in the space. 20/25 Case studies, color used to create Focal Point, or Point of Interest in the space.

Chart 3.4: Color in design principles



Use of color that support principle of design is given briefly in the following examples.



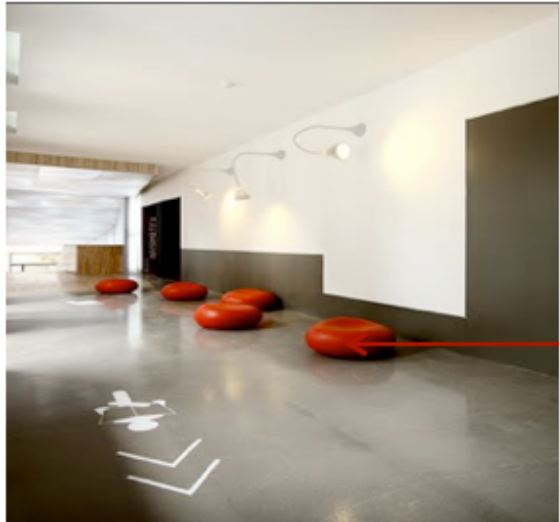
Contrast and Focal point by using strong color

Figure 3.5: example 1 (Design Principles)



Contrast, add interest and create focal point.

Figure 3.6: example 2 (Design Principles)



Contrast, unity, focal point and add interest, proximity by using accent color on additional elements

Figure 3.7: example 3 (Design Principles)

Table 3.5: Case Studies for Color in Design Principles

Design Principle														
		Contrast												
		Add Interest												
		Unity												
		Similarity												
Proximity														
Focal Point														

### **3.2.2.2 According to Region (Design Principles)**

As a result of the assessment, it has been achieved that color used to create Contrast in 3/4 case studies at the Asia, 5/11 case studies at the West Europe. And it has not been used in any other regions.

Color used to add Interest at the Asia in 4/4 Case studies, 3/4 at the East Europe, 9/11 at the West Europe, 4/4 At the North America and 1/2 case studies at the South America.

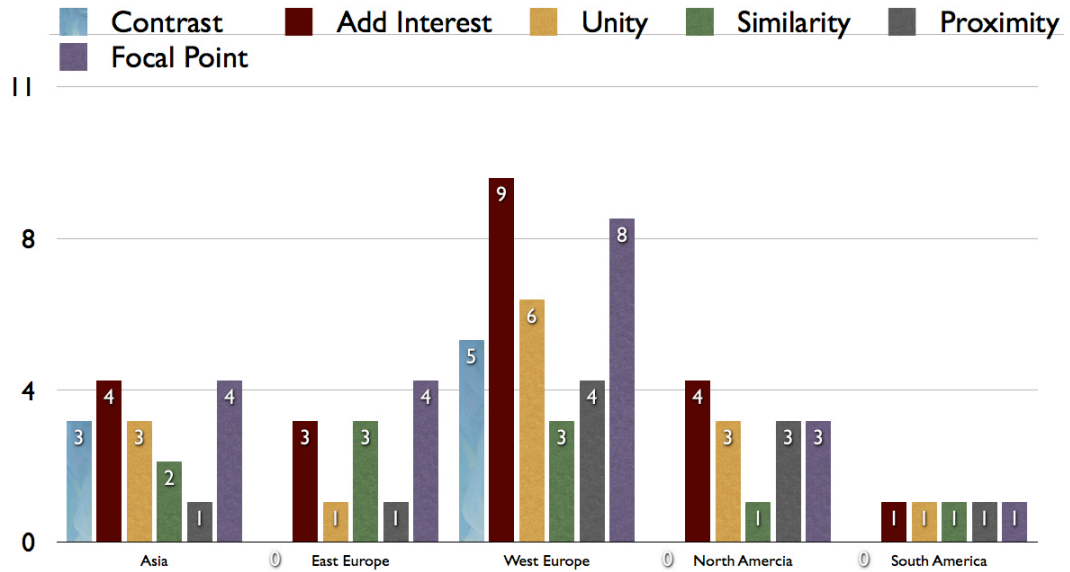
Color used to create Unity at the Asia in 3/4 case studies, 1/4 case studies at the East Europe, 6/11 case studies at the West Europe, 3/4 case studies at the North America, and 1/2 case studies at the South America.

Color used to create Similarity at the Asia in 2/4 case studies, 3/4 case studies at the East Europe, 3/11 case studies at the West Europe, 1/4 case study at the North America, and 1/2 case study at the South America.

Color used to create Proximity at the Asia in 1/4 case studies, 1/4 case studies at the East Europe, 4/11 case studies at the West Europe, 3/4 case studies at the North America, and 1/2 case study at the South America.

Color used to create Focal Point at the Asia in 4/4 case studies, 4/4 case studies at the East Europe, 8/11 case studies at the West Europe, 3/4 case studies at the North America, and 1/2 case study at the South America.

Chart 3.5: Design principles in different regions



### 3.2.2.3 According to Function (Design Principles)

In Residential spaces, color has been used to create Contrast in 1/5 Case studies, Interest in 5/5, Unity in 3/5, Similarity in 1/5, Proximity in 2/5, and Focal Point in 5/5.

In Cultural spaces, color has been used to create Contrast in 1/5 Case studies, Interest in 5/5, Unity in 3/5, Similarity in 3/5, Proximity in 3/5, and Focal Point in 5/5 Case studies.

In Administrative spaces, Color has been used to create Contrast in 0/4 Case studies, Interest in 3/4, Unity in 3/4, Similarity in 3/4, Proximity in 3/4, and Focal Point in 2/4 Case studies.

In Recreation space, Color has been used to create Contrast, Focal Point and Add Interest to only one Case study.

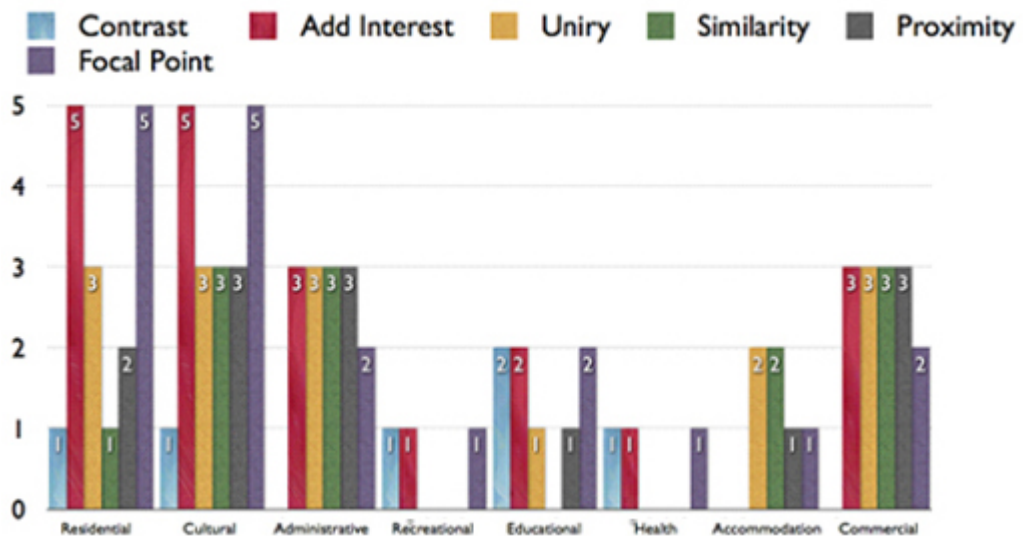
In Educational spaces, Color has been used to create Contrast in 2/3 Case studies, Interest in 2/3, Unity in 1/3, Similarity in 0/3, Proximity in 1/3, and Focal Point in 2/3 Case studies.

In Health spaces, Color has been used, to create Contrast, Focal Point and Add Interest to only one Case study.

In Accommodation color has been used to create Contrast in 0/2 Case studies, Interest in 0/2, Unity in 2/2, Similarity in 2/2, Proximity in 1/2, and Focal Point in 1/2 Case studies.

In Commercial color has been used to create Contrast in 0/4 Case studies, Interest in 3/4, Unity in 3/4, Similarity in 3/4, Proximity in 3/4, and Focal Point in 2/4 Case studies.

Chart 3.6: Design principles in different functions



Except, Administrative and Commercial interior space, where in these two spaces, color used to achieve Unity, Similarity and Proximity rather than create Focal Point. in all other function color mainly used to create focal point and add interest to the spaces.

Table 3.6: Distribution of color in Principle of Design

Minimalist Space		Role of Color in Interior Space						
		Color in Principle of Design						
		Unity	Focal Point	Contrast	Similarity	Proximity	Interest	
Region	Asia	Residential	█	█	█			█
		Restaurants						█
		Exhibitions	█	█	█	█	█	█
		Shop						█
		Dental						█
		Offices	█	█	█	█		█
		Pool						█
		University						█
		Hotel						█
		East Europe	Residential		█			
	Restaurants							█
	Exhibitions			█		█	█	█
	Shop		█			█		█
	Dental							█
	Offices							█
	Pool							█
	University							█
	Hotel			█		█		█
	West Europe		Residential	█	█			█
		Restaurants						█
		Exhibitions						█
		Shop	█			█	█	█
		Dental		█	█	█	█	█
		Offices	█	█	█	█	█	█
		Pool			█			█
		University	█	█	█		█	█
		Hotel				█		█
		America	Residential		█			
	Restaurants							█
	Exhibitions		█	█		█	█	█
	Shop		█					█
	Dental							█
	Offices		█	█			█	█
	Pool							█
	University							█
	Hotel							█
	South America		Residential	█	█			█
		Restaurants				█	█	█
		Exhibitions						█
		Shop						█
Dental							█	
Offices							█	
Pool							█	
University							█	
Hotel							█	
<b>Total</b>			14	20	8	10	11	22

Color mainly used to add interest and create a focal point

The only two regions where color used to create contrast

Color mainly used to add interest

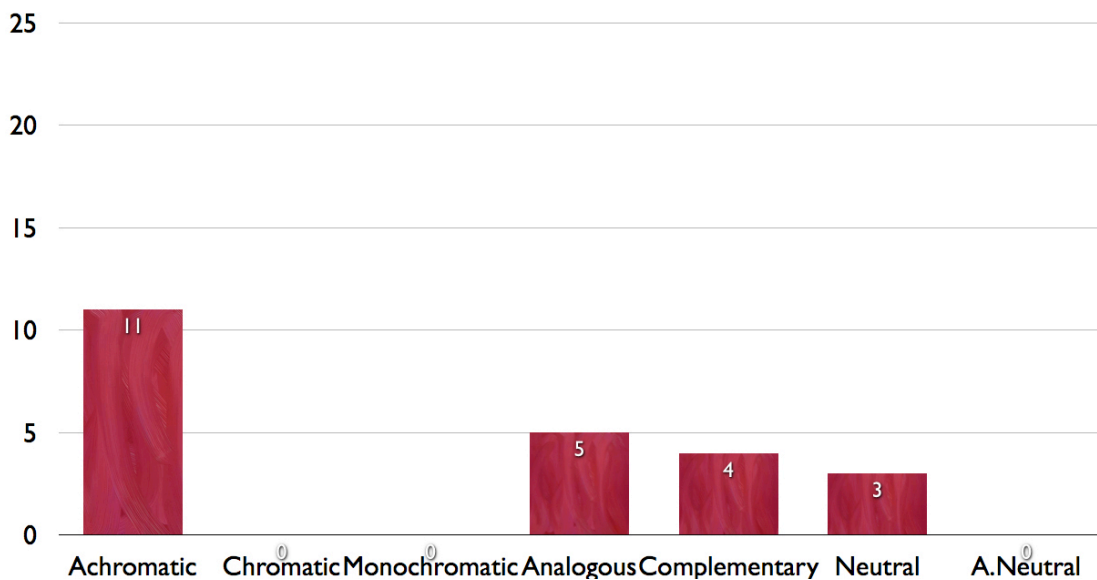
### 3.2.3. According to Color Scheme

At the third section, case study areas have been analyzed; in order to find which color scheme has been used in the selected Minimalist interior spaces. Color Scheme consists of Achromatic, Chromatic, Monochromatic, Analogous, Complementary, Neutral color and Accented neutral color.

#### 3.2.3.1 General Result (Color Schemes)

As a result of the assessment, it has been achieved that Achromatic color Scheme that is used in Minimalist interior space is 11/25, Chromatic color is 0/25, Monochromatic is 0/25, Analogous color is 5/25, Complementary color is 4/25, Neutral color is 3/25, and Accented Neutral color is 0/25.

Chart 3.7: Color Schemes



Preferred color schemes and their different uses are given in the below examples.



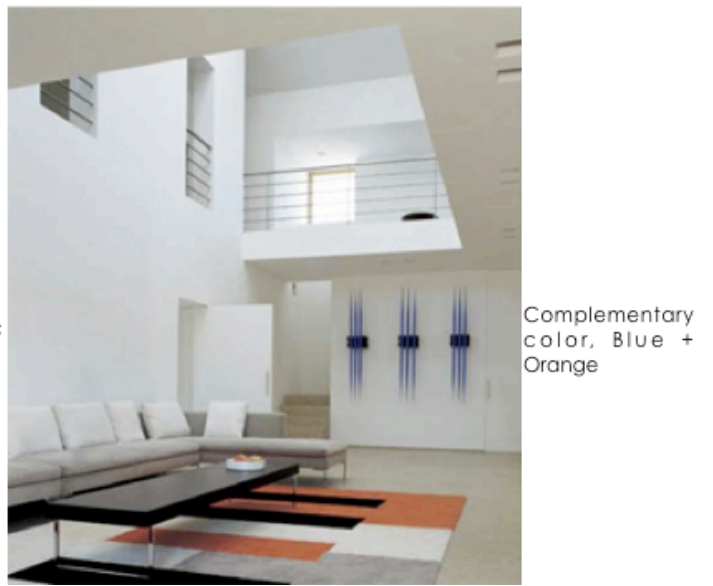
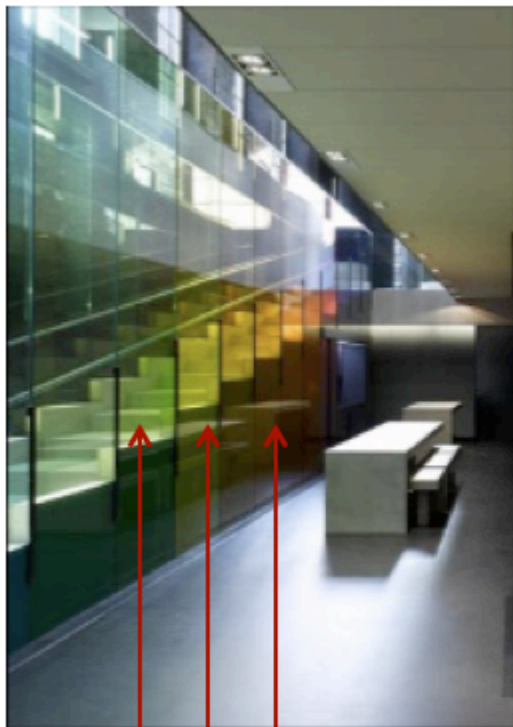
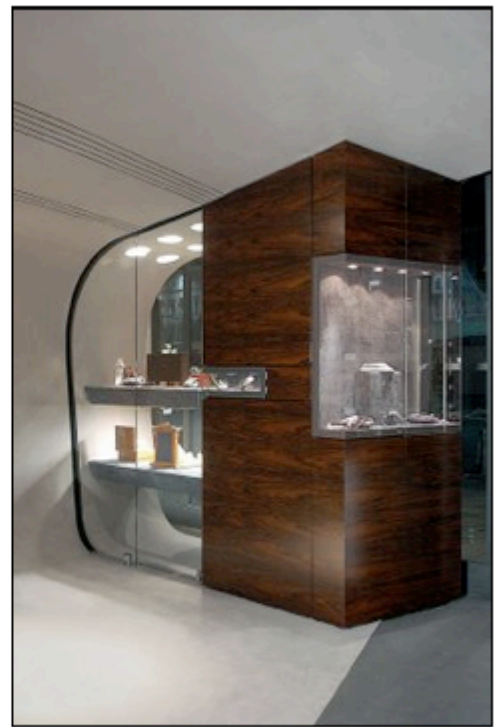


Figure 3.8: Example 1&2 (Color Schemes)



Analogous, Green, Yellow, red



Neutral

Figure 3.9: Example 3&4 (Color Schemes)

Color Scheme

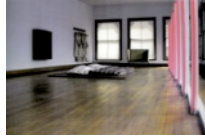
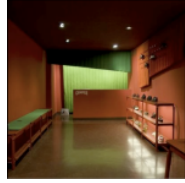
Neutral



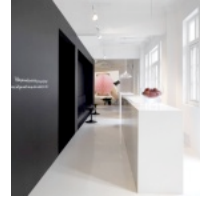
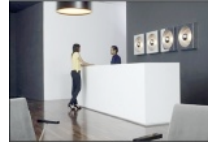
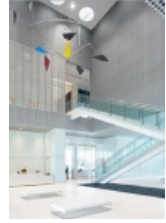
Analogous



Complementary



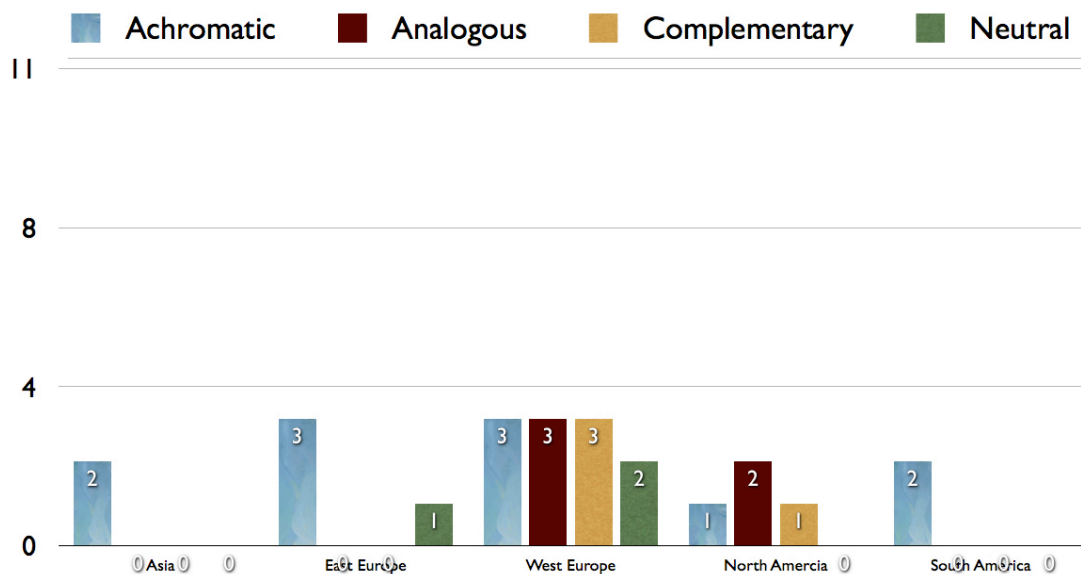
Achromatic



### 3.2.3.2 According to Region (Color Schemes)

The Color Scheme that has been used at the Asia is Achromatic color which is used in 2/4 case studies. At the East Europe, the color Scheme that has been used is Achromatic for 2/4 case studies and Neutral color Scheme used in 1/4 case studies. At the West Europe, the color Scheme that has been used, is Achromatic in 3/11 Case studies, 3/11 Analogous color, 3/11 Complementary color, and 2/11 Neutral color Scheme. The color Schemes that has been used in the North America 1/4 Achromatic,, 2/4 Analogous, and 1/4 Complementary. And the color scheme that has been used in South America is Achromatic color Scheme that used in 2/2 case studies.

Chart 3.8: Color Schemes in different Regions



Except West Europe where Achromatic, Analogous and Complementary color schemes used equally, three cases for each scheme. The most suitable color scheme for all other regions is achromatic color scheme.

### 3.2.3.3 According to Function (Color Schemes)

The Color scheme that has been used in residential Minimalist interior space is 2/5 Achromatic, 1/5 Complementary.

The Color scheme that has been used in Cultural Minimalist interior space is 2/5 Achromatic.

The Color scheme that has been used in Administrative Minimalist interior space is 2/4 Achromatic, 2/4 Analogous, and 1/4 Neutral color Scheme.

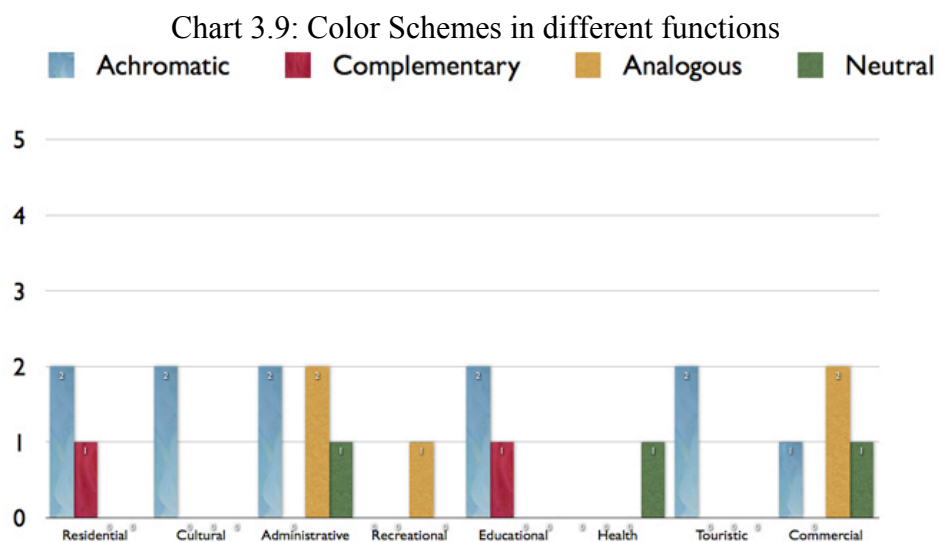
The Color scheme that has been used in residential Minimalist interior space is Analogous color scheme that used only in one case study.

The Color scheme that has been used in educational Minimalist interior space is 2/3 Achromatic, 1/3 Complementary.

The Color scheme that has been used in Minimalist Health interior space is Neutral color Scheme for only one case Study.

The Color scheme that has been used in touristic Minimalist interior space is 2/2 Achromatic.

The Color scheme that has been used in Commercial Minimalist interior space is 1/4 Achromatic, 2/4 Analogous, and 1/4 Neutral color Scheme.



Except commercials where analogous color scheme used more than achromatic color, and Administration where Achromatic and Analogous color used equally in 2 cases each, in all other functions, the most suitable color scheme is achromatic .

Table 3.8: Color Scheme

		Role of Color in Interior Space							
		Color Scheme							
		Achromatic	Chromatic	Monochromatic	Analogous	Complementary	Neutral	A Neutral	
Minimalist Space	Asia	Residential	█						
		Restaurant							
		Exhibitions	█						
		Shop	█						
		Dental							
		Offices	█						
		Pool							
		University							
		Hotel							
		East Europe	Residential	█					
	Restaurant		█						
	Exhibitions		█						
	Shop								█
	Dental								
	Offices								
	Pool								
	University								
	Hotel		█						
	West Europe		Residential	█					
		Restaurant							
		Exhibitions							
		Shop							
		Dental							█
		Offices	█						
		Pool							
		University	█						
		Hotel							
		America	Residential	█					
	Restaurant								
	Exhibitions		█						
	Shop								
	Dental								
	Offices								
	Pool								
	University								
	Hotel								
	South America		Residential	█					
		Restaurant							
		Exhibitions							
		Shop							
Dental									
Offices									
Pool									
University									
Hotel									
<b>Total</b>		<b>11</b>			<b>5</b>	<b>4</b>	<b>3</b>		

The most preferred color scheme for Minimalist interior space is Achromatic color scheme,

West Europe is the region where Analogous and complementary Color scheme is used as same as Achromatic color scheme

In addition to Achromatic color schemes, Analogous and Complementary color schemes are the other comparably less preferred color scheme

## **Chapter 4**

### **CONCLUSION**

#### **1.1 Role of Color in Minimalist interior spaces**

As a result of this study, it is achieved that Minimalism is a style which every design elements has been reduced to its necessary size, shape and form. And also when this style initiated, designers tried to even eliminate bright colors, and applied Achromatic color in interior spaces. The case study research, therefore concluded that the most preferred color scheme for Minimalist interior space is Achromatic color scheme, on which this study revealed that 11/25 of cases are designed with this color scheme, besides, in addition to Achromatic, Analogous and Complementary color schemes are the other comparably less preferred color scheme, and also study revealed that Neutral color has been also used in 3/25 cases.

Table 4.1: Comparative Result

		Perception						Color Schemes						Design Principle					
		17	18	11	0	5	4	3	0	8	20	22	11	14	10				
		Adv	Recede	AC	MO	AN	CO	NE	A.NE	Contrast	Dominance	Interest	Proximity	Unity	Similarity				
R E G I O N	ASIA	3/4	4/4	2/4						3/4	4/4	4/4	1/4	3/4	2/4				
	E.E	3/4	2/4	2/4				1/4			4/4	3/4	1/4	1/4	3/4				
	W.E	8/11	9/11	3/11		3/11	3/11	2/11		5/11	8/11	9/11	4/11	6/11	3/11				
	N.A	2/4	2/4	1/4		2/4	1/4				3/4	4/4	3/4	3/4	1/4				
	S.A	1/2	1/2	2/2							1/2	1/2	1/2	1/2	1/2				
F U N C T I O N	Res	3/5	4/5	2/5			1/5			1/5	5/5	5/5	2/5	3/5	1/5				
	Culture	4/5	2/5	2/5						1/5	5/5	5/5	3/5	3/5	3/5				
	Admin	2/4	3/4	2/4		2/4		1/4		-	2/4	3/4	3/4	3/4	3/4				
	Recr	N				X													
	Edu	2/3	3/3	2/3			1/3			2/3	2/3	2/3	1/3	1/3	-				
	Health	N						X		X	X	X							
	Acom	1/2	1/2	2/2						X	1/2	X	1/2	1/2	1/2				
	Comm	3/4	2/4	1/4		2/4		1/4		-	2/4	3/4	3/4	3/4	3/4				



- Result of use of color schemes in minimalist interior spaces

Although Achromatic Color (11/25) is the most observed color Scheme for the Minimalist interior space as the result of the assessment which can also be followed from (Table 3.4), not in the most but in some cases, Analogous, Complementary, and Neutral color Scheme has been used in different case studies which in total they are twelve (Analogous 5/25, Complementary 4/25, Neutral 3/25)  $5+4+3=12$ .

Table 4.2: Result for color schemes in different regions and functions

		Color Schemes						
		11	0	5	4	3	0	
R E G I O N	AC	11	0	5	4	3	0	
	ASIA	2/4						
	E.E	2/4				1/4		
	W.E	3/11		3/11	3/11	2/11		
	N.A	1/4		2/4	1/4			
	S.A	2/2						

		Color Schemes						
		11	0	5	4	3	0	
F U N C T I O N	Res	2/5						
	Culture	2/5			1/5			
	Admin	2/5		2/5		1/4		
	Recr			X				
	Edu	2/3			1/3			
	Health					X		
	Acom	2/2						
Comm	1/4		2/4		1/4			

- Result of use of color in design principle

Therefore, designers realized that brighter colors could be used to add interest to the Minimalist Interior space, as it is realized from the result of the assessment, which can also be followed from table 4.1. At 22/25 case studies color used to add interest to those spaces and also 20/25 case studies color used to create Focal Point. That means the main key role of color in minimalist interior space is to create Point of Interest that is even more than achieving Unity (14/25).

Besides, as a result of the case study research it has been achieved that not as much as the above mentioned principles, but with lower amount, color is used to create contrast (8/25); used to create Similarity between different shapes (11/25); and used in Proximity to reinforce Unity (12/25).

Table 4.3: Result for color in design principles in different regions and functions

		Design Principle						
		8	20	22	11	14	10	
R E G I O N		Contrast	Dominance	Interest	Proximity	Unity	Similarity	L O W E S T
	ASIA	3/4	4/4	4/4	1/4	3/4	2/4	
	E.E		4/4	3/4	1/4	1/4	3/4	
	W.E	5/11	8/11	9/11	4/11	6/11	5/11	
	N.A		3/4	4/4	3/4	3/4	1/4	
	S.A		1/2	1/2	1/2	1/2	1/2	
F U N C T I O N	Res	1/5	5/5	5/5	2/5	3/5	1/5	H I G H E S T
	Culture	1/5	5/5	5/5	3/5	3/5	3/5	
	Admin	-	2/4	3/4	3/4	3/4	3/4	
	Recr	No Comparative Analysis Possible						
	Edu	2/3	2/3	2/3	1/3	1/3	-	
	Health	X	X	X				
	Acem	X	1/2	X	1/2	1/2	1/2	
	Comm	-	2/4	3/4	3/4	3/4	3/4	

- Differentiation in use of color, to distribution of principal of design in different regions.

The comparative assessment conclude that there is a difference between Asia and West Europe compared to other regions in terms of use of color as a special character to support these principles. Accordingly, only in these two regions color is used to create contrast. However color isn't used to create contrast in the other Regions. And the most preferred way color interpreted and used is to create point of interest and focal point.

- Similarity in use of color, to distribution of principal of design in different regions.

When results have been evaluated in accordance with different regions, it is achieved that in opposite to Asia, East Europe is the region where color has been used differently from the Minimalist Style where none of the case studies (0/4), color is used to create Contrast. 4/4, Point of Interest, 3/4 Similarity, and 1/4 Unity. As it is

realized, in the East Europe, color mostly used to create similarities and Point of Interest. And what is similar to all the regions is usually using one accent color to creating Point of Interest.

Table 4.4: Result for color in design principles in different regions

		Design Principle					
		8	20	22	11	14	10
R E G I O N		Contrast	Dominance	Interest	Proximity	Unity	Similarity
	ASIA	3/4	4/4	4/4	1/4	3/4	2/4
	E.E		4/4	3/4	1/4	1/4	3/4
	W.E	5/11	8/11	9/11	4/11	6/11	3/11
	N.A		3/4	4/4	3/4	3/4	1/4
	S.A			1/2	1/2	1/2	1/2

When results have been evaluated in different uses it is achieved that what is similar in cases that have different uses is to create Focal Point or Point of Interest. As a result, creating Focal Point is higher in the most of the functions except, Administrative and Commercial interior space, where in these two spaces, color used to achieve Unity, Similarity and Proximity rather than create Focal Point.

Table 4.5: Result for color in design principles for different functions

		Design Principles						
		8	20	22	11	14	10	
F U N C T I O N		Contrast	Dominance	Interest	Proximity	Unity	Similarity	
	Res	1/5	5/5	5/5	2/5	3/5	1/5	
	Culture	1/5	5/5	5/5	3/5	3/5	3/5	
	Admin	-	2/4	3/4	3/4	3/4	3/4	
	Recr		No Comparative Analysis Possible					
	Edu	2/3	2/3	2/3	1/3	1/3	-	
	Health	X	X	X				
	Acom	X	1/2	X	1/2	1/2	1/2	
	Comm	-	2/4	3/4	3/4	3/4	3/4	

- Result of color perception in minimalist interior spaces.

Minimalism is a style that color has mostly Recede effect rather than Advance, but as the result of the research, it appeared that although in minimalist space, designers used Recede color to create a space to look larger than it really is; but in equal they used Advance color to create point of interest. As result of the assessment, it has been revealed that use of Recede Color is 18/25 and Advance color is 17/25. Therefore even though, use of Recede color is more than Advance color, but the differentiation is not an amount to consider as advantage of Recede color to Advance color. That means minimalist designers used Recede Color to make space to appear larger, but in equal they used Advance color in parts to create Point of interest.

Table 4.6: Result for color perception in different regions and functions

		Perception		
		17	18	
R E G I O N		Adv	Recede	L O W E S T
	ASIA	3/4	4/4	
	E.E	3/4	2/4	
	W.E	8/11	9/11	
	N.A	2/3	2/3	
	S.A	1/2	1/2	
F U N C T I O N				H I G H E S T
	Res	3/5	4/5	
	Culture	2/3	2/5	
	Admin	2/4	3/4	
	Recr	N		
	Edu	2/3	3/3	
	Health	N		
	Acom	1/2	1/2	
Comm	3/4	2/4		
				E Q U A L

When it is evaluated according to Region in order to find similarities or differences it is achieved that except Asia (4/4 Recede, 3/4 Advance) and West Europe (9/11 Recede to 8/11 Advance), Where use of Recede color, is more than Advance color,

in all other regions, use of Advance and Recede Color is equal or even use of Advance color is more, such as East Europe. Since it has been stated that in Minimalist space, color must have more Recede effect to Advance color, this study concluded that only in the Asia and West Europe color has been used in this way.

Table 4.7: Result for Perception of color in different regions

		Perception	
		17	18
R E G I O N		Adv	Recede
	ASIA	3/4	4/4
	E.E	3/4	2/4
	W.E	8/11	9/11
	N.A	2/4	2/4
	S.A	1/2	1/2

As a result of the comparative assessment carried out to find out similarities and differences in terms of color perception in different uses, it is achieved that in Commercial and Cultural Minimalist spaces, the use of color is juxtaposed with what Minimalism is all about. In these two functions, the use of Advance color is more than Recede color (Culture 4/5 Advance and 2/5 Recede, Commercial 3/4 Advance and 2/4 Recede), which means creating attraction and point of interest is much important than creating an effect in spaces that they look larger than they are. Except in Touristic interior spaces where use of Advance and Recede color is equal (1/2) in all other function use of Recede color is more than Advance color.

Table 4.8: Result for perception of color fore different functions

	Perception		
	17	18	
	Adv	Recede	
F U N C T I O N	Res	3/5	4/5
	Culture	4/5	2/5
	Admin	2/4	3/4
	Recr	X	
	Edu	2/3	3/3
	Health	X	
	Acom	1/2	1/2
	Comm	3/4	2/4

Consequently, this research concluded that

1. Achromatic color scheme is the most preferred color scheme in minimalist interior spaces, sometimes, reinforced with one accented color.
2. Mostly, Recede color is used to make space look larger than it is. Beside, Advance color is used in the space to a create point of interest.
3. In different regions, there are differences between Asia, West Europe and others regions in a way of use of color to create contrast. Also in these two regions color is used to create Recede effect, more than other regions. And a similarity with all regions is in a way that color is used to create Focal Point.
4. In different function, there are differences between Commercial and Cultural spaces with the others in the way of use of Advance color more than Recede color. And similarities in all different spaces is use of Achromatic color scheme more than the other color schemes.

As it is perceived from those minimalist interior space where subjects are reduced to their necessary elements, color played major key to make the space looks larger, create unity and etc... but there were some similarities and

differences between those spaces, similarity was in the most of the spaces recede colors used for main elements of the interior space such as wall, ceiling, structural elements and furniture. But what makes the spaces different from each other was a way to use advance color to create Focal point.

In addition this research to initiated to perceive differences in each culture in term of deferent ideologies, which create confusion for designer, but this research achieves that there is no cultural difference between minimalist interior spaces around the world.

This is a study, which puts a limited Minimalist Interior spaces with the assessment of 25 cases. Study can be developed further with a more detailed approach, which will be carried, but on a broader field study.

Detailed investigation on the specific concept of the determination of related indicators will bring on elaborate research and understanding on the subject. Beside, a comparative analysis could also be elaborated to understand use of color in different styles, interior spaces, and different cultures.

## REFERENCES

BERTONI F., (2004). *Minimalist Design*, Italy: Birkhauser

BRADLEY S (2010). Gestalt Principles of perception Retrieved February 24, 2010.

From <http://www.vanseodesign.com/web-design/gestalt-principles-of-perception/>

BRADLEY S (2010). Dominance. Retrieved March 10, 2010. From

<http://www.vanseodesign.com/web-design/dominance/>

BHASKARAN L, (2005). *Design of The Times*. Uk. RotoVision.

BUENO P. (2003). *Minimalism & Color Architecture & Interior & Furniture*. Collins

Design.

Color. Retrieved May 25, 2009. From <http://www.squidoo.com/colour>

Color Wheel. Retrieved May 1, 2009. From [http://en.wikipedia.org/wiki/Colour\\_wheel](http://en.wikipedia.org/wiki/Colour_wheel)

CLONINGER C, (2009). *Fresher Styles for Web Designer*. Peachpit

DEMPSEY A, (2002). *Styles, Schools and Movements*. London, Thames & Hudson.

Design Principles, Retrieved May 15, 2009. From

[http://en.wikipedia.org/wiki/Elements\\_of\\_design](http://en.wikipedia.org/wiki/Elements_of_design)

EDITORIAL A., (2006). *Minimalism : Minimalist*, Spain, h.f.Ullmann



Gestalt Laws and Design Presentation. Retrieved February 10. From  
<http://www.slideshare.net/chelsc/gestalt-laws-and-design-presentation>

HOLTZSCHUE L. (2006). *Understanding color: an Introduction for Designers*. Wiley

Interior Design. Retrieved February 5, 2010. From,  
<http://www.a212.com/search/label/INTERIOR%20DESIGNERS>

JODIDIO P. (2001) *Architecture Now!* ,Hohenzollerning Koln:Taschen,

JODIDIO P. (2002) *Architecture Now!*vol 2, Hohenzollerning Koln:Taschen

JODIDIO P. (2004) *Architecture Now!*vol3, Hohenzollerning Koln:Taschen ,

JODIDIO P. (2006) *Architecture Now!*vol4, Hohenzollerning Koln:Taschen ,

JODIDIO P. (2007) *Architecture Now!*vol5, Hohenzollerning Koln:Taschen

JODIDIO P. (2008) *Architecture Now!*vol6, Hohenzollerning Koln:Taschen

KUEHNI RG. (2004). *Color: An Introduction to Practice and Principle*. John Wiley and  
Sons

KUEHNI RG. (1983). *Color, Essence and Logic*. Van Nostrand Reinhold

LADAU R., Smith BK & Place J. (1989). *Color in Design and Architecture*, New York,  
Van Nostrand Reinhold

- LEE V, (2005). *101 Ideas colour*. Quadrille publishing
- LLEONART A, (2009). *Minimalism and Color Design Source*. Harper Collins
- MANDLEBERG H., ( 2007), *Small Spaces*, London:Marie Claire Maison
- MARZONA D, (2003). *Minimal Art*. Taschen
- MCCOWN J. (2006), *Colors:architecture in detail*, U.S.A :Rockport Publishers
- MEYER V.,(2006). *Designing with light*. London, Laurence King.
- MILLER M., (1997). *Color for Interior Architecture*. New York , John Wiley & Song,  
INC.
- Minimalism, Retrieved February 1, 2010. From <http://en.wikipedia.org/wiki/Minimalism>
- OBENDORF H. (2009). *Minimalism: Designing Simplicity*. Springer
- PILE J. (1997), *Colors in interior design*, New York :Mcgraw-hill
- STRICKLAND E, (2000). *Minimalism Origins*. Indiana University Press.
- SHELLFIRE S.(Ed), (2005), *Minimalist Interiors*, Koln: Taschen .
- TOY M., (2003), *Practically Minimal*, inspiration idea for 21<sup>st</sup> century living, London:  
Thames & Hudson.

TOY M., (1999), *Aspects of Minimal Architecture II*, Volume 69, Issues 5-8, John Wiley  
& Sons

TREGENZA P., (1998). *The Design of Lighting*, London, E& FN Spon

YMPA H, (1996). *London Minimum*. Thames and Hudson

## APPENDIX

Appendix A: Inventory forms of 25 cases

Studio Roelof

**Table**

Perception of Color	Advance	Higher in Value		White	Red	Green	
		Saturation Level	High		X	X	
			Medium				
			Low				
		Warm in Hue		X			
	Create illusion		X	X			
	Legibility enhanced						
	Recede	Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating	X			
Legibility enhanced		X					
Effect of Color in Appearance	Size and Proportion			Shape and Location		Size and Shape of the Enclosure	
	larger	Space looks smaller	Space looks be close in	Appear to be expended	Appear to be expended	Define boundary of the space	Give emphasis to meaning of enclosure

**Pictures**



Color in Principle of design	Contrast				X	X	
	Add Interest to a Space	By using strong color	X		X	X	
		By using accent color on additional element	X		X		
		By using strong contrasting color					
	Unity	Make visual connection					
		Consistency of color and shape					
		Repetition of key elements in color					
		Separated elements looks as one piece					
		Using repeated color in basic shape					
	Similarity	Having same color for different shape					
		Feeling of consistency and completeness					
	Proximity	Cohesive grouping					
		Same position of colored elements					
		Similar object near each other					
	Focal Point	Point of interest	Larger				
Denser							
Lighter							
Darker			X				
Exaggerated shape							

Color Scheme

Color Scheme	Achromatic Color				
	Chromatic Color				
	Monochromatic Color				
	Complementary Color	X		X	X
	Analogous Color				
	Neutral Color				
	Accented Neutral Color				





Role of Color in Interior Space  
Minimalist space

Color Perception

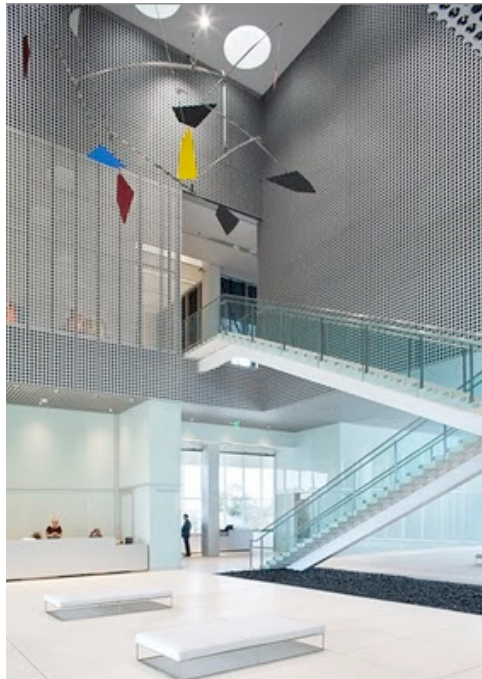
Florida, USA, Exhibition  
Tampa Museum of Art

Stanly Saitowitz

**Table**

Perception of Color	Advance	Higher in Value				
		Saturation Level	High			
			Medium			
			Low		X	
		Warm in Hue				
	Create illusion					
	Recede	Lower in Value			X	
		Cool in Hue				
		Create illusion	Moving away/Retreating			
		Legibility enhanced				
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure		
	Space looks larger	Space looks smaller	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be expanded			
						

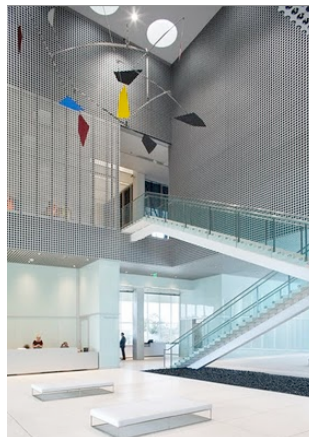
**Picture**



Color in Principle of design	Contrast		X		
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X		
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker					
		Exaggerated shape	X		

Color Scheme

Color Scheme	Achromatic Color	X	With primary colors
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		








Role of Color in Interior Space  
Minimalist space  
Color Perception  
Australia, Exhibition  
Sherman Contemporary Art

Lava

Table

Perception of Color	Advance	Higher in Value					
		Saturation Level	High				
			Medium	X	Red chairs		
			Low				
		Warm in Hue					
	Create illusion			X	Chairs appears to be close in		
	Legibility enhanced						
	Recede	Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating	X			
Legibility enhanced			X				
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure		
	Space looks larger	Space looks smaller	Space looks to be closer in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
							

Picture



Color in Principle of design	Contrast		X		
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X		
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color		X	
		Separated elements looks as one piece			
		Using repeated color in basic shape		X	
	Similarity	Having same color for different shape			
		Feeling of consistency and completeness			
	Proximity	Cohesive grouping		X	
		Same position of colored elements		X	
		Similar object near each other		X	
Focal Point	Point of interest	Larger			
		Denser			
		Lighter			
		Darker			
		Exaggerated shape	X		




Color Scheme

Color Scheme	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		

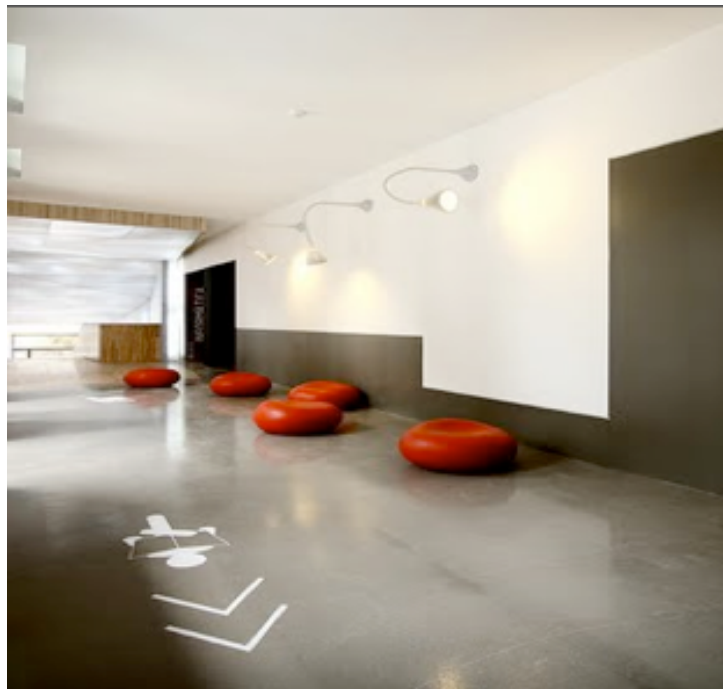


Crystalzeo

**Table**

Perception of Color	Advance	Higher in Value			X	White	Gray	Red	
		Saturation Level	High					X	
			Medium						
			Low						
		Warm in Hue		X				X	
		Create illusion		X				X	
	Legibility enhanced		X				X		
	Recede	Lower in Value		X	X	X			
		Cool in Hue							
		Create illusion	Moving away/Retreating	X	X	X			
Legibility enhanced			X						
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure				
	Space looks larger	Space looks smaller	Appear to be close in	Appear to be expanded	 Define boundary of the space Give emphasis to meaning of enclosure				
									

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**

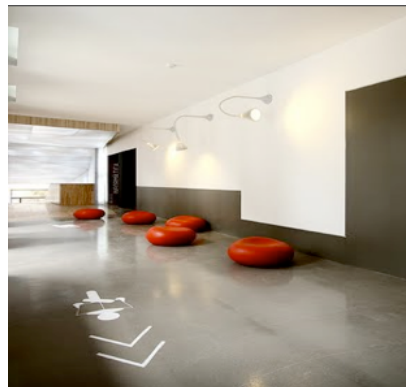
**Principle of Design**

**Nucia, Spain, Univeristy**  
**Seu University of Nucia**

<b>Color in Principle of design</b>	Contrast		X				
	Add Interest to a Space	By using strong color					
		By using accent color on additional element	X			X	
		By using strong contrasting color					
	Unity	Make visual connection					
		Consistency of color and shape					
		Repetition of key elements in color		X			
		Separated elements looks as one piece					
	Similarity	Using repeated color in basic shape		X			X
		Having same color for different shape					
	Proximity	Feeling of consistency and completeness					
		Cohesive grouping		X			X
		Same position of colored elements					
	Focal Point	Point of interest	Larger				
			Denser				
Lighter							
Darker			X			X	
Exaggerated shape							



**Color Scheme**

<b>Color Scheme</b>	Achromatic Color	X	X	X	
	Chromatic Color				
	Monochromatic Color				
	Complementary Color				
	Analogous Color				
	Neutral Color				
	Accented Neutral Color				

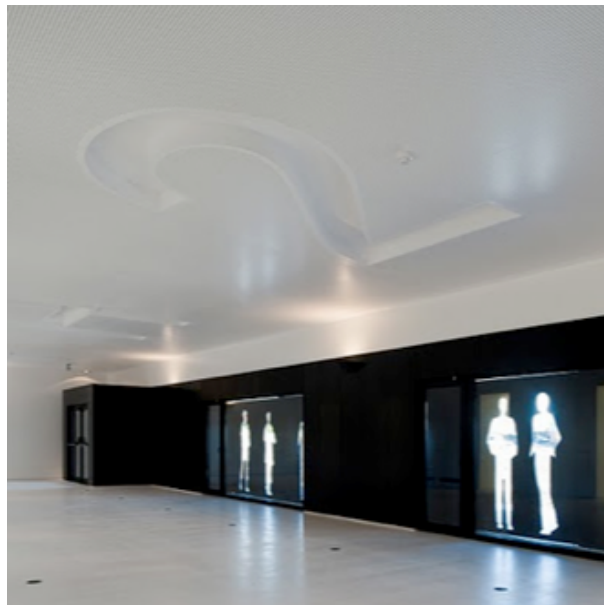


Nano Montehegro

**Table**

Perception of Color	Advance	Higher in Value				
		Saturation Level	High			
			Medium			
			Low			
		Warm in Hue				
	Create illusion		X			
	Legibility enhanced		X	Narrower and deeper		
	Recede	Lower in Value		X		
		Cool in Hue				
		Create illusion	Moving away/Retreating	X		
Legibility enhanced			X	Ceiling appears higher		
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure		
	larger	smaller			Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller				

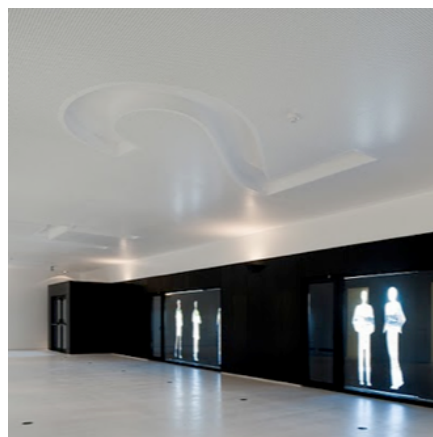
**Picture**



Color in Principle of design	Contrast		X	
	Add Interest to a Space	By using strong color		
		By using accent color on additional element		
		By using strong contrasting color		
	Unity	Make visual connection		
		Consistency of color and shape		
		Repetition of key elements in color		
		Separated elements looks as one piece		
	Similarity	Having same color for different shape		
		Feeling of consistency and completeness		
	Proximity	Cohesive grouping		
		Same position of colored elements		
		Similar object near each other		
	Focal Point	Point of interest	Larger	
Denser				
Lighter				
Darker				
Exaggerated shape				

Color Scheme

Color Scheme	Achromatic Color	X	
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space  
Minimalist space




Color Perception

Nethland, Office

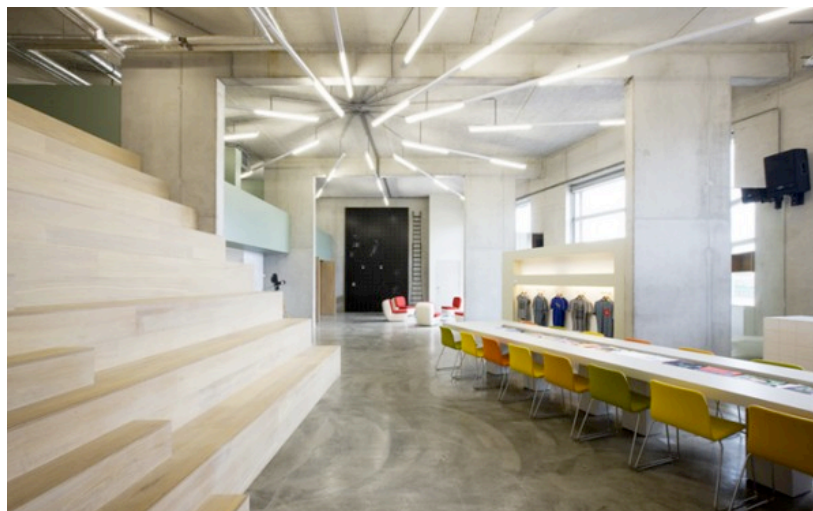
Post Panic Offices

Maurice Rentiesns

**Table**

Perception of Color	Advance	Higher in Value				
		Saturation Level	High	X	Red	
			Medium			
			Low	X	Yellow, orange	
		Warm in Hue		X		
	Create illusion					
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating	X	Whitish theme	
		Legibility enhanced		X		
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure		
	larger	Space looks smaller	Appear to be closer in		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be expanded			
						

**Pictures**

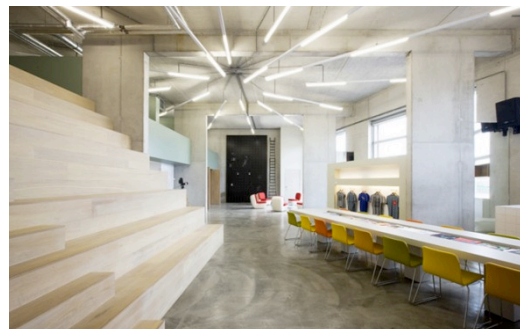


**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**Nethland, Office**  
**Post Panic Offices**

<b>Color in Principle of design</b>	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X	Colorful furniture	
		By using strong contrasting color			
	Unity	Make visual connection	X		
		Consistency of color and shape			
		Repetition of key elements in color	X		
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape	X		
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping	X		
		Same position of colored elements	X		
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker			X		
		Exaggerated shape			

**Color Scheme**

<b>Color Scheme</b>	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color	X	Red, Orange, Yellow
	Neutral Color	X	Light blue, light green
	Accented Neutral Color		





**Role of Color in Interior Space**  
**Minimalist space**  
**Color Perception**  
**Panama, North America, Office**  
**Modern Colorful Office**

Zipher

**Table**

Perception of Color	Advance	Higher in Value		X			
		Saturation Level	High	X	Red		
			Medium	X	Pink		
			Low				
		Warm in Hue		X	Red, Orange, yellow		
		Create illusion		X	Wider and shallower		
	Legibility enhanced		X	Ceiling appears lower			
	Recede	Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating				
Legibility enhanced							
Effect of Color in Appearance	Size and Proportion			Shape and Location		Size and Shape of the Enclosure	
	larger	Space looks smaller	Space looks be close in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure

**Pictures**



**Role of Color in Interior Space**

**Minimalist space**

**Principle of Design**

**Panama, North America, Office**

**Modern Colorful Office**

<b>Color in Principle of design</b>	Contrast				
	Add Interest to a Space		By using strong color	X	
			By using accent color on additional element		
			By using strong contrasting color		
	Unity		Make visual connection	X	
			Consistency of color and shape	X	
			Repetition of key elements in color		
			Separated elements looks as one piece		
	Similarity		Using repeated color in basic shape		
			Having same color for different shape		
	Proximity		Feeling of consistency and completeness		
			Cohesive grouping		
			Same position of colored elements	X	
	Focal Point	Point of interest		Similar object near each other	
				Larger	
			Denser		
			Lighter		
			Darker		
		Exaggerated shape			

**Color Scheme**

<b>Color Scheme</b>	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color	X	Red, Orange, Yellow
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space




Minimalist space

Color Perception

Greece, Hotel

Met Hotel

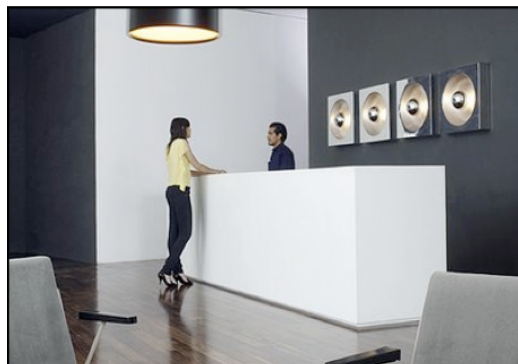
Table

Perception of Color	Advance	Higher in Value						
		Saturation Level	High					
			Medium					
			Low					
		Warm in Hue						
	Create illusion							
	Recede	Lower in Value						
		Cool in Hue						
		Create illusion	Moving away/Retreating					
		Legibility enhanced						
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure				
	larger	Space looks smaller	Space looks larger	Appear to be close in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
								

Picture



		Role of Color in Interior Space	
		Minimalist space	
		Principle of Design	
		Greece, Hotel	
		Met Hotel	
Color in Principle of design	Contrast		
	Add Interest to a Space	By using strong color	
		By using accent color on additional element	
		By using strong contrasting color	
	Unity	Make visual connection	X
		Consistency of color and shape	X
		Repetition of key elements in color	X
		Separated elements looks as one piece	X
		Using repeated color in basic shape	
	Similarity	Having same color for different shape	X
		Feeling of consistency and completeness	
	Proximity	Cohesive grouping	
		Same position of colored elements	
		Similar object near each other	
	Focal Point	Point of interest	Larger
Denser			
Lighter			X
Darker			
Exaggerated shape			
Color Scheme	Achromatic Color	X	
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space

Minimalist space



Color Perception

France, Pool

Le Bains France

Richard Roger

Table

Perception of Color	Advance	Higher in Value		X				
		Saturation Level	High		X			
			Medium					
			Low					
		Warm in Hue		X				
		Create illusion		X				
	Legibility enhanced		X					
	Recede	Lower in Value						
		Cool in Hue						
		Create illusion	Moving away/Retreating					
Legibility enhanced								
Effect of Color in Appearance	Size and Proportion			Shape and Location		Size and Shape of the Enclosure		
	larger	Space looks smaller	Space looks to be close in	Appear to be expanded			Define boundary of the space	Give emphasis to meaning of enclosure

Picture



Role of Color in Interior Space  
Minimalist space

Principle of Design

France, Pool  
Le Bains France

Color in Principle of design	Contrast		X		
	Add Interest to a Space	By using strong color	X		
		By using accent color on additional element			
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Larger		
Denser					
Lighter					
Darker			X		
Exaggerated shape					

Color Scheme

Color Scheme	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color	X	
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space




Minimalist space

Color Perception

London, UK, Shop

Kvadrat Fabric

Table

Perception of Color	Advance	Higher in Value					
		Saturation Level	High				
			Medium				
			Low	X			
		Warm in Hue					
	Create illusion						
	Recede	Legibility enhanced		X			
		Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating				
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure		
	larger	Space looks smaller	Appear to be close in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be close in	Appear to be expanded			
							

Picture



Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X		
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape	X		
		Repetition of key elements in color			
		Separated elements looks as one piece	X		
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness	X		
		Cohesive grouping	X		
		Same position of colored elements			
	Focal Point	Point of interest	Larger		
			Denser		
Lighter					
Darker					
Exaggerated shape					

Color Scheme

Color Scheme	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color	X	
	Neutral Color		
	Accented Neutral Color		





Role of Color in Interior Space

Minimalist space

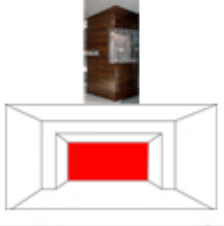
Color Perception

Linz, Austria, Shop

Jeweler, Mayrhofer

X Architecture

**Table**

Perception of Color	Advance	Higher in Value					
		Saturation Level	High				
			Medium				
			Low				
		Warm in Hue			X		
		Create illusion					
	Legibility enhanced			X			
	Recede	Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating				
Legibility enhanced							
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure			
	larger	Space looks smaller	Space looks larger	Appear to be close in	Appear to be expanded		Define boundary of the space  Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Space looks larger	Appear to be close in	Appear to be expanded		

**Picture**



Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color	X		
		By using accent color on additional element			
		By using strong contrasting color	X		
	Unity	Make visual connection	X		
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness	X		
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other		
			Larger		
Denser					
Lighter					
Darker			X		
		Exaggerated shape			

Color Scheme

Color Scheme	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color	X	
	Accented Neutral Color		



Role of Color in Interior Space  
Minimalist space


Color Perception

New York, USA, Shop

Issy, Miyake

Toshiko Mori

**Table**

Perception of Color	Advance	Higher in Value			
		Saturation Level	High		
			Medium		
			Low		
		Warm in Hue			
	Create illusion				
	Recede	Lower in Value			
		Cool in Hue		X	
		Create illusion	Moving away/Retreating		
		Legibility enhanced			
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure	
	larger	Space looks smaller	Appear to be close in		Define boundary of the space Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be expanded		

**Picture**



Role of Color in Interior Space  
Minimalist space

Principle of Design

New York, USA, Shop

Issy, Miyake

Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X		
		By using strong contrasting color	X		
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping	X	Four accessories	
		Same position of colored elements	X		
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker					
		Exaggerated shape	X	Green cube	



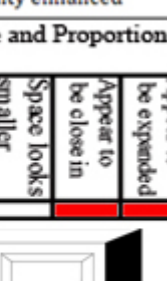

Color Scheme

Color Scheme	Achromatic Color		
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color	X	Green, Yellow, Blue
	Neutral Color		
	Accented Neutral Color		

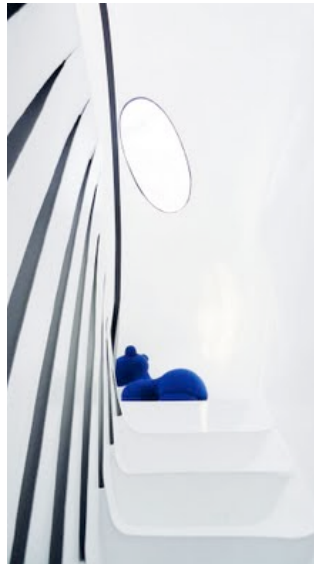


Mad Architecture

**Table**

Perception of Color	Advance	Higher in Value			
		Saturation Level	High	X	Blue object
			Medium		
			Low		
		Warm in Hue			
	Create illusion		X	Object appears to be closer	
	Legibility enhanced				
	Recede	Lower in Value			
		Cool in Hue			
		Create illusion	Moving away/Retreating	X	
Legibility enhanced					
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure	
	larger	smaller			Define boundary of the space  Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller			
					
					

**Picture**



Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color	X	Blue	
		By using accent color on additional element	X	Blue objects	
		By using strong contrasting color	X	Blue objects	
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape	X		
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker					
		Exaggerated shape	X		

Color Scheme



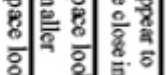

Color Scheme	Achromatic Color	X	Tone Color
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space  
Minimalist space  
Color Perception  
Vienna, Dental Clinic  
Gkk Dental Clinic

X Architecture

Table

Perception of Color	Advance	Higher in Value		Red	Brown
		Saturation Level	High	X	
			Medium		
			Low		
		Warm in Hue	X	X	X
	Create illusion	X	X	X	
	Legibility enhanced	X			
	Recede	Lower in Value			
		Cool in Hue			
		Create illusion	Moving away/Retreating		
Legibility enhanced					
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure	
	Space looks larger	Space looks smaller		Define boundary of the space	Give emphasis to meaning of enclosure
					

Picture



Role of Color in Interior Space  
Minimalist space

Principle of Design

Vienna, Dental Clinice

Gkk Dental Clinic

Color in Principle of design	Contrast		X			
	Add Interest to a Space	By using strong color	X		X	
		By using accent color on additional element	X		X	
		By using strong contrasting color	X		X	
	Unity	Make visual connection				
		Consistency of color and shape				
		Repetition of key elements in color				
		Separated elements looks as one piece				
	Similarity	Using repeated color in basic shape				
		Having same color for different shape				
	Proximity	Feeling of consistency and completeness				
		Cohesive grouping				
		Same position of colored elements				
	Focal Point	Point of interest	Larger			
			Denser			
Lighter						
Darker			X	X		
Exaggerated shape						

Color Scheme




Color Scheme	Achromatic Color			
	Chromatic Color			
	Monochromatic Color			
	Complementary Color			
	Analogous Color			
	Neutral Color	X		
	Accented Neutral Color			





Ministry Design

Table

Perception of Color	Advance	Higher in Value				
		Saturation Level	High			
			Medium			
			Low			
		Warm in Hue				
	Create illusion					
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating	X	White	
		Legibility enhanced		X	White	
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure		
	larger	Space looks smaller	Space looks to be close in	Appear to be expanded		Define boundary of the space  Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be close in	Appear to be expanded		
						

Picture

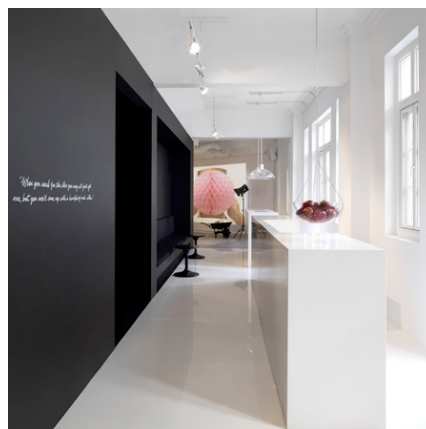


**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**Singapore, Office**  
**Leo Burnett Office**

<b>Color in Principle of design</b>	Contrast				
	Add Interest to a Space	By using strong color	X	Red	
		By using accent color on additional element			
		By using strong contrasting color	X	Red	
	Unity	Make visual connection	X		
		Consistency of color and shape	X		
		Repetition of key elements in color	X		
		Separated elements looks as one piece	X		
	Similarity	Using repeated color in basic shape	X		
		Having same color for different shape	X		
	Proximity	Feeling of consistency and completeness	X		
		Cohesive grouping			
		Same position of colored elements	X		
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker			X	Light red picture	
		Exaggerated shape			

**Color Scheme**

<b>Color Scheme</b>	Achromatic Color	X	+ One Color
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space

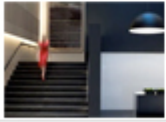


Minimalist space

Color Perception

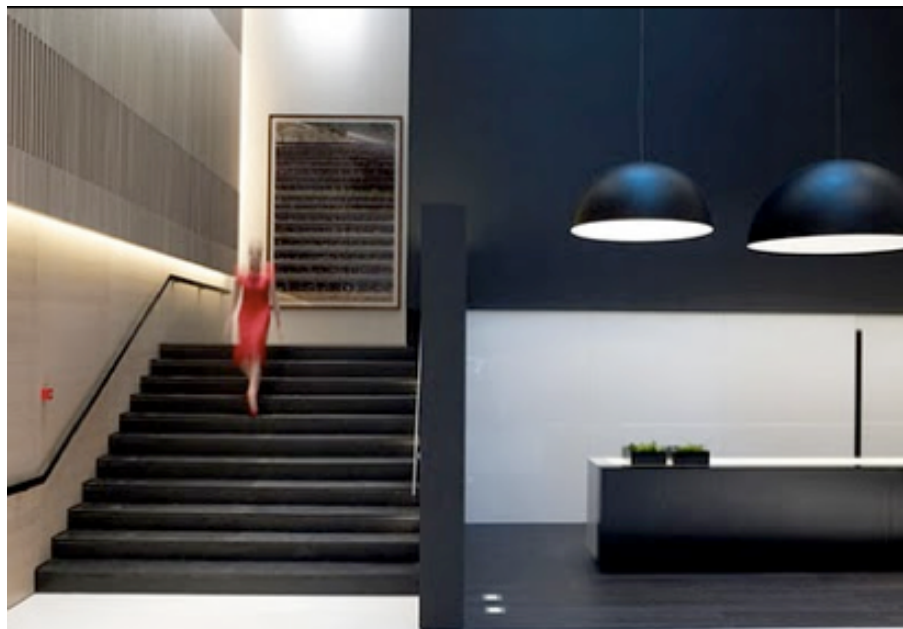
Mexico City, Hotel

Distrito Capita

Table

Perception of Color	Advance	Higher in Value		X		
		Saturation Level	High			
			Medium			
			Low			
		Warm in Hue				
		Create illusion		X		
	Legibility enhanced		X			
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating			
Legibility enhanced						
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure		
	larger	Space looks smaller	Appear to be close in		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be expanded			
						

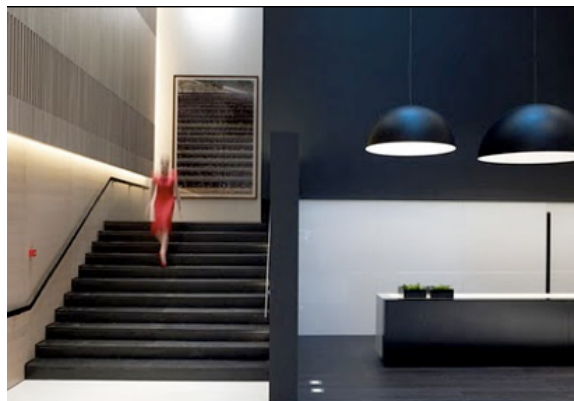
Picture



Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element			
		By using strong contrasting color			
	Unity	Make visual connection	X		
		Consistency of color and shape	X		
		Repetition of key elements in color			
		Separated elements looks as one piece	X		
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness	X		
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker					
		Exaggerated shape			

Color Scheme





Color Scheme	Achromatic Color	X	
	Chromatic Color		
	Monochromatic Color		
	Complementary Color		
	Analogous Color		
	Neutral Color		
	Accented Neutral Color		



Role of Color in Interior Space  
Minimalist space  
Color Perception  
Spain, Office  
Dinahosting Offices

Antonia Eaio & Javer Quinriro

**Table**

Perception of Color	Advance	Higher in Value		White/B	Orange			
		Saturation Level	High					
			Medium					
			Low					
		Warm in Hue		X		X		
	Create illusion							
	Legibility enhanced		X		X			
	Recede	Lower in Value						
		Cool in Hue						
		Create illusion	Moving away/Retreating					
Legibility enhanced								
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure			
	Space looks larger	Space looks smaller	Appear to be close in	Appear to be expanded			Define boundary of the space	Give emphasis to meaning of enclosure
								

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**Spain, Office**  
**Dinahosting Offices**

<b>Color in Principle of design</b>	Contrast		X			
	Add Interest to a Space	By using strong color	X		X	
		By using accent color on additional element				
		By using strong contrasting color				
	Unity	Make visual connection				
		Consistency of color and shape				
		Repetition of key elements in color				
		Separated elements looks as one piece				
	Similarity	Having same color for different shape				
		Feeling of consistency and completeness				
	Proximity	Cohesive grouping				
		Same position of colored elements				
		Similar object near each other				
	Focal Point	Point of interest	Larger			
			Denser			
Lighter						
Darker			X		X	
Exaggerated shape						

**Color Scheme**


<b>Color Scheme</b>	Achromatic Color	X	+Orange	
	Chromatic Color			
	Monochromatic Color			
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



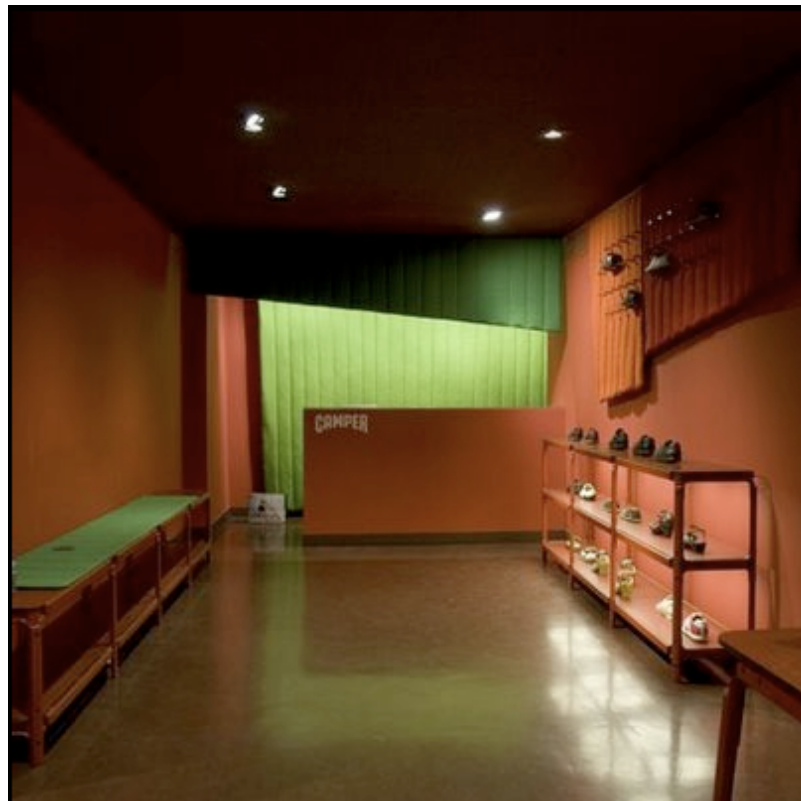
Role of Color in Interior Space  
Minimalist space  
Color Perception  
Paris, France, Shop  
Camper in Paris

Ronan & Erwan Boutoullec

**Table**

Perception of Color	Advance	Higher in Value		Red	Green
		Saturation Level	High		
			Medium	X	
			Low		
		Warm in Hue	X	X	
	Create illusion	X	X		
	Legibility enhanced	X	X		
	Recede	Lower in Value			
		Cool in Hue		X	X
		Create illusion	Moving away/Retreating	X	X
Legibility enhanced		X	X		
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure	
	larger	smaller		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller			
	Appear to be closer in	Appear to be expanded			

**Picture**



Color in Principle of design	Contrast					
	Add Interest to a Space	By using strong color				
		By using accent color on additional element				
		By using strong contrasting color				
	Unity	Make visual connection				
		Consistency of color and shape	X			
		Repetition of key elements in color	X			
		Separated elements looks as one piece	X			
	Similarity	Using repeated color in basic shape	X			
		Having same color for different shape	X			
	Proximity	Feeling of consistency and completeness	X			
		Cohesive grouping				
		Same position of colored elements	X			
	Focal Point	Point of interest	Similar object near each other			
			Larger			
Denser						
Lighter						
Darker			X		X	
		Exaggerated shape				

Color Scheme

Color Scheme	Achromatic Color			
	Chromatic Color			
	Monochromatic Color			
	Complementary Color	X	X	X
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			





Role of Color in Interior Space  
Minimalist space




Color Perception

SAo Paulo, Brazile, Residential

Gamma Issa House

Marcio Kogan

**Table**

Perception of Color	Advance	Higher in Value					
		Saturation Level	High				
			Medium				
			Low				
		Warm in Hue					
	Create illusion	Look Closer					
	Legibility enhanced						
	Recede	Lower in Value		X	White, Blue		
		Cool in Hue					
		Create illusion	Moving away/Retreating	X	White, Blue		
Legibility enhanced		X	Space appears to be larger				
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure		
	larger	Space looks smaller	Space looks to be close in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
							

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**

**Principle of Design**

**SAo Paulo, Brazile, Residential**  
**Gamma Issa House**

Color in Principle of design	Contrast			
	Add Interest to a Space	By using strong color		
		By using accent color on additional element	X	Blue object
		By using strong contrasting color		
	Unity	Make visual connection	X	
		Consistency of color and shape	X	
		Repetition of key elements in color	X	White
		Separated elements looks as one piece	X	
		Using repeated color in basic shape		
	Similarity	Having same color for different shape	X	
		Feeling of consistency and completeness	X	
		Cohesive grouping	X	
	Proximity	Same position of colored elements		
		Similar object near each other	X	
Focal Point	Point of interest	Larger		
		Denser		
		Lighter		
		Darker		
		Exaggerated shape	X	

**Color Scheme**





Color Scheme	Chromatic	Achromatic Color	X	
		Chromatic Color		
		Monochromatic Color		
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



Role of Color in Interior Space  
 Minimalist space  
 Color Perception  
 Mallorca, Spain, Residential  
 Casa son Vida

Marcel Wanders

**Table**

Perception of Color	Advance	Higher in Value		X	Red	
		Saturation Level	High	X	Red	
			Medium			
			Low			
		Warm in Hue		X	Red	
		Create illusion	Look Closer	X	Red	
	Legibility enhanced		X	Appears to be close in		
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating	X	White	
Legibility enhanced		X	Space looks larger			
Effect of Color in Appearance	Size and Proportion		Shape and Location		Size and Shape of the Enclosure	
	larger	Space looks smaller	Appear to be close in	 	Define boundary of the space Give emphasis to meaning of enclosure	
	Space looks larger	Space looks smaller	Appear to be expanded			
						

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**

**Principle of Design**

**Mallorca, Spain, Residential**

**Casa son Vida**

Color in Principle of design	Contrast		X	Red	
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X		
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other		
			Larger		
Denser					
Lighter					
Darker			X		
		Exaggerated shape			

**Color Scheme**

Color Scheme	Chromatic	Achromatic Color		
		Chromatic Color		
		Monochromatic Color		
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			





Role of Color in Interior Space  
Minimalist space

Color Perception

Tokio, Japan, Residential  
Small Apartment

Bakoko

**Table**

Perception of Color	Advance	Higher in Value			
		Saturation Level	High	X	Red
			Medium		
			Low		
		Warm in Hue		X	Red
		Create illusion	Look Closer	X	Red
	Legibility enhanced		X	Appears to be close in	
	Recede	Lower in Value		X	White
		Cool in Hue			
		Create illusion	Moving away/Retreating	X	Space appears to be larger
Legibility enhanced		X	Space appears to be larger		
Effect of Color in Appearance	<b>Size and Proportion</b>		<b>Shape and Location</b>	<b>Size and Shape of the Enclosure</b>	
	larger	Space looks smaller		Define boundary of the space Give emphasis to meaning of enclosure	
	Space looks larger	Space looks smaller			
	Space looks smaller	Space looks larger			

**Picture**



Color in Principle of design	Contrast		X		
	Add Interest to a Space	By using strong color	X	Red	
		By using accent color on additional element	X	Furniture	
		By using strong contrasting color	X		
	Unity	Make visual connection	X		
		Consistency of color and shape			
		Repetition of key elements in color	X		
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other		
			Larger		
Denser					
Lighter					
Darker			X	Red	
		Exaggerated shape			

Color Scheme





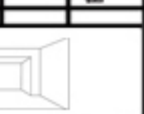
Color Scheme	Chromatic	Achromatic Color		
		Chromatic Color		
		Monochromatic Color		
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



Role of Color in Interior Space  
Minimalist space  
Color Perception  
Florence, Italy, Residential  
Ciatti House

Claudio Nardi

**Table**

Perception of Color	Advance	Higher in Value					
		Saturation Level	High				
			Medium				
			Low				
		Warm in Hue					
	Create illusion	Look Closer					
	Legibility enhanced						
	Recede	Lower in Value			X		
		Cool in Hue			X		
		Create illusion	Moving away/Retreating		X		
Legibility enhanced							
Effect of Color in Appearance	<b>Size and Proportion</b>		<b>Shape and Location</b>		<b>Size and Shape of the Enclosure</b>		
	Space looks larger	Space looks smaller	Appear to be closer in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
							

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**Florence, Italy, Residential**

**Ciatti House**

Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X	Orange carpet, blue objects	
		By using strong contrasting color	X	Orange	
	Unity	Make visual connection			
		Consistency of color and shape	X		
		Repetition of key elements in color	X		
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping	X		
		Same position of colored elements	X		
	Focal Point	Point of interest	Similar object near each other	X	
			Larger		
Denser					
Lighter					
Darker			X	Blue objects	
		Exaggerated shape			

**Color Scheme**

Color Scheme	Chromatic	Achromatic Color		
		Chromatic Color		
		Monochromatic Color		
	Complementary Color		X	Blue, Orange
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



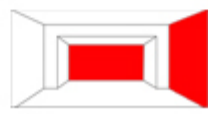




**Role of Color in Interior Space**  
**Minimalist space**  
**Color Perception**  
**Bucharest, Romania, Residential**  
**Stenography Apartment**

AA Studio

**Table**

Perception of Color	Advance	Higher in Value		X	Red		
		Saturation Level	High	X	Red		
			Medium				
			Low				
		Warm in Hue		X	Red		
	Create illusion	Look Closer	X	Red			
	Legibility enhanced						
	Recede	Lower in Value					
		Cool in Hue					
		Create illusion	Moving away/Retreating	X	White		
Legibility enhanced		X	White				
Effect of Color in Appearance	<b>Size and Proportion</b>		<b>Shape and Location</b>		<b>Size and Shape of the Enclosure</b>		
	Space looks larger	Space looks smaller	Appear to be close in	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
							

**Picture**

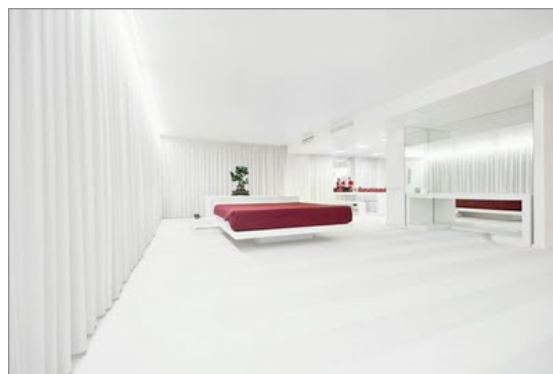


**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**Bucharest, Romania, Residential**  
**Stenography Apartment**

Color in Principle of design	Contrast				
	Add Interest to a Space	By using strong color			
		By using accent color on additional element	X	Red	
		By using strong contrasting color			
	Unity	Make visual connection			
		Consistency of color and shape			
		Repetition of key elements in color			
		Separated elements looks as one piece			
	Similarity	Using repeated color in basic shape			
		Having same color for different shape			
	Proximity	Feeling of consistency and completeness			
		Cohesive grouping			
		Same position of colored elements			
	Focal Point	Point of interest	Similar object near each other		
Larger					
Denser					
Lighter					
Darker			X	Red	
		Exaggerated shape			

**Color Scheme**




Color Scheme	Chromatic	Achromatic Color	X	+Red
		Chromatic Color		
		Monochromatic Color		
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



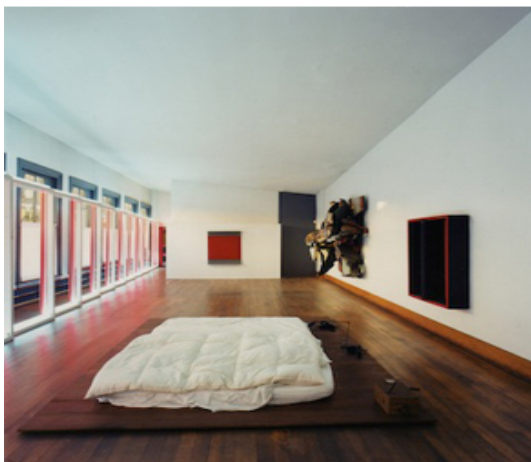
Role of Color in Interior Space  
Minimalist space  
Color Perception  
New York, USA, Exhibition  
Bed With Platform

Donald Judd

**Table**

Perception of Color	Advance	Higher in Value		X	Red	
		Saturation Level	High	X	RED	
			Medium			
			Low			
		Warm in Hue		X	Red	
	Create illusion	Look Closer	X	Red		
	Legibility enhanced		X	Appears to be close in		
	Recede	Lower in Value				
		Cool in Hue				
		Create illusion	Moving away/Retreating			
Legibility enhanced						
Effect of Color in Appearance	<b>Size and Proportion</b>		<b>Shape and Location</b>	<b>Size and Shape of the Enclosure</b>		
	Space looks larger	Space looks smaller	Appear to be expanded		Define boundary of the space	Give emphasis to meaning of enclosure
	Space looks larger	Space looks smaller	Appear to be expanded			
						

**Picture**



**Role of Color in Interior Space**  
**Minimalist space**  
**Principle of Design**  
**New York, USA, Exhibition**  
**Bed With Platform**

Color in Principle of design	Contrast			
	Add Interest to a Space	By using strong color		
		By using accent color on additional element	X	Sculpture on the wall
		By using strong contrasting color		
	Unity	Make visual connection	X	Red on different elements
		Consistency of color and shape	X	White, Brown, Red
		Repetition of key elements in color		
		Separated elements looks as one piece		
		Using repeated color in basic shape	X	
	Similarity	Having same color for different shape	X	
		Feeling of consistency and completeness		
	Proximity	Cohesive grouping		
		Same position of colored elements		
		Similar object near each other		
	Focal Point	Point of interest	Larger	
Denser				
Lighter				
Darker				
Exaggerated shape			X	Sculpture on the wall

**Color Scheme**

Color Scheme	Chromatic	Achromatic Color		
		Chromatic Color		
		Monochromatic Color		
	Complementary Color	X	Red, Green	
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			



Role of Color in Interior Space

Minimalist space



Color Perception

New York, USA, Exhibition

Untitled

Donald Judd

Table

Perception of Color	Advance	Higher in Value			
		Saturation Level	High		
			Medium		
			Low		
		Warm in Hue			
	Create illusion	Look Closer			
	Legibility enhanced				
	Recede	Lower in Value			
		Cool in Hue		X	Blue
		Create illusion	Moving away/Retreating	X	Blue
Legibility enhanced					
Effect of Color in Appearance	Size and Proportion		Shape and Location	Size and Shape of the Enclosure	
	Space looks larger	Space looks smaller	Appear to be expanded		Define boundary of the space Give emphasis to meaning of enclosure
	Appear to be close in	Appear to be expanded			

Picture



**Role of Color in Interior Space**

**Minimalist space**

**Principle of Design**

**New York, USA, Exhibition**

**Untitled**

Color in Principle of design	Contrast			
	Add Interest to a Space	By using strong color	X	Blue
		By using accent color on additional element	X	Blue
		By using strong contrasting color		
	Unity	Make visual connection		
		Consistency of color and shape		
		Repetition of key elements in color		
		Separated elements looks as one piece		
		Using repeated color in basic shape	X	
	Similarity	Having same color for different shape		
		Feeling of consistency and completeness		
	Proximity	Cohesive grouping	X	Blue objects
		Same position of colored elements	X	
		Similar object near each other	X	
	Focal Point	Point of interest	Larger	
Denser				
Lighter				
Darker				
Exaggerated shape			X	

**Color Scheme**

Color Scheme	Chromatic	Achromatic Color	X	White, Gray
		Chromatic Color		
		Monochromatic Color		
	Complementary Color			
	Analogous Color			
	Neutral Color			
	Accented Neutral Color			

