Consumers' Emotional Responses to Product's Color and Texture by Using LCD Back Cover as An Example

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Abstract: Because the living standard is improving gradually, the consumers' demand has changed from the satisfaction of product function to the satisfaction of product image. And the purchase intention has also changed from "needs" to "wants". In addition, previous research suggests that the consumer's emotion would guide them to make a choice among many products (Helander and Khalid, 2006). Moreover, Norman (2004) particularly illustrates the importance of the "emotion" in his book Emotional Design that consumers' emotion has been affected by the product appearance when the first time they see it. Previous researchers concluded that the important features of the product appearance are Color, Material, and Finishing (King, Yu, Lee, & Jiang, 2011). Thus, this study will discuss how these product features, on laptop LCD back cover as an example, would affect the emotion when consumers see them.

Since the LCD back cover is the most important part to demonstrate the product and brand images, this research would use Laptop LCD Back Cover as example to discuss about it. However, considering that the selections of material are mostly limited to aluminum and ABS plastic when manufacturing the back cover since the company has to consider about the processing cost of the

chosen material and the cooling of the LCD module.   Moreover, the use of the material will directly affect the color that consumer see.   Thus, in the discussing of visual perception, this study merges the features of material with color and discusses the color and surface texture issues only.   In this study we used in-depth interview visit six subjects, 3males and 3 females.   After the visit would generalize the interactions between textures and colors.

Keywords: Emotion, Color, Texture, laptop, LCD back cover

1. INDURDUCTION

1.1. Background and Motivation

The appearance of a product consists of three main elements: color, texture and shape (Asakura, 1992).   These three elements are important factors affecting the perception of people.   Because laptops have little change in shape, we excluded it in the consideration of the research scope of this research.   However, all of existing studies emphasis on single factor research, so it lacks the complete description of color and texture together, (Chang, 2004).   The texture and color influence each other.   The preview study indicated that the feeling of color must be accompanied by the texture.   More precisely, human perception of color is inseparable from texture on the appearance of the product (Lin, 1998). Thus this study aimed to investigate the effects of texture and color, two factors applied on consumer product, by using laptops as an example.

Leatrice Eiseman is called America's color guru, who says that color can dominate attention of consumers and cause their emotional reactions.   In addition, preview study suggests that products' color not only show the performance of products, but also pass itself rational and emotional significance (Peng, 2009).   However, designer might just focus on beautiful color or the trend of color sometimes, which does not correspond to consumers' favorite while doing product color planning.

In terms of color, past studies have pointed out that color is the most influential product attribute for consumers.   Color preference influences judgments of consumers and plays an important role to stimulate consumption. In Kuo (2009) paper indicates that consumer preferences are using low Chroma color as one of the color combination.   However, in his study treated achromatic color as part of low Chroma (e.g., black is the combination of low Chroma and low

value).   Currently mobile phones with achromatic color matching is the mainstream product in the market.   In order to consider the consumer's attention to low Chroma, there will be further discussion about chromatic color and achromatic color separately, which is the consumer preference.   Therefore, in this study, we would investigate consumer preference between chromatic color and achromatic color.

Texture is the surface of object and affects the overall quality.   It has a close relationship to our touches (horn, 1974).   Texture is also one of the characteristics to determine the material surface with form and color are the element of molding (Chen, 2001). According to Kim (2011), appearance is an important thing to innovative products, and it is deeply influenced by three main elements: Color, Material and Finishing.   Chen (2011) says the texture of the product is dependent on the material and finishing, which make the texture to show the value of the product. Hence, this study would combine the "Material" and "Finishing" to the "Texture" to discuss.

The market is flooded with various styles of products.   When consumers want to buy a commodity, they would be influenced by the product's attribute (e.g., performance, price, form and color, etc.).   Asakura says that the appearance of a product consists of three main elements: color, texture and form (Asakura, 1992).   Though form is important to product, but human visual perception of color is higher than it.   That is, in general, the emotional impact of color is quicker and stronger than form (Lin, 1993).   Therefore, in this research, the form factor is not considered. We will keep it to the follow-up research further in-depth comparison.   As for Texture, Lin suggests that the feeling of color most be accompanied by texture.   To be more precisely, human perception of color is inseparable from texture on the appearance of the product (Lin, 1998). Therefore, this research will explore the Consumer-generated emotional impact on color and texture of the product surface.

As the advancement of technology gradually, product lifecycle has grown into maturity.   Laptop has become general consumer product.   With the laptop market expansion, the competition of this product is much more intense.   Consumer demands on product functionality are satisfied, so they become care about the product's appearance.   Therefore, the companies continue to push out the old and bring in the new by giving the color and texture of some changes in laptop.   Not only do they provide consumers the adequate functionality and friendly interface, but they also offer emotional value and make it like a work of art.

Lin (2011) suggests that significance of consumption have grown from satisfying the basic needs

only to seeking personal style reflections and the value of life.   According to Chen (2010), LCD back cover has the largest area in the whole appearance of the laptop.   It is not only the part which best shows the feature of the laptop but also the part that consumers care about most.

In order to get to know the image by matching color and texture with the LCD back cover much better, this study would use in-depth interview to explore the consumer feeling.   In-depth interview is one of the data collection methods of qualitative research.   It exchanges views between the interviewer and the respondent by oral conversations and helps the experimenter to understand what the subject thoughts are.   The interviewer could analyze respondent's ideas through the interview.   The purpose of this research is to explore the consumer preferences and emotions about the interaction between color and texture, which are two main factors of laptop LCD back cover.   Trying to find out the reasons for why the preference increase or decrease and exploring consumer emotion by matching color and texture with the Laptop LCD back cover are the major issues in the research.

Semi-structured interviews are equally rigorous and standardized like structured interview, with the interviewer control on the structure of the interview.   But respondents, instead, have freedom to express their views and opinions.   Therefore this study would use this method and discuss with the respondent with the prepared questions.   It allows the respondent to express their inner thoughts freely.   The interviewer should encourage them to think deeper to get the real demands.

1.2. Research Scope
Selected samples
In this study, refer to Bai (2010) he suggests the product texture classification which divide the texture of product into 3 categories and 15 subcategories.   The 15 Subcategories contains shiny metal, metal hairline, matte metal, circular brushed metal, glossy plastic, matte plastic, brushed plastic, pearl paint with plastic, embossed plastic, rubber, wood, leather, fabrics, carbon fiber, composite materials（see figure1）.

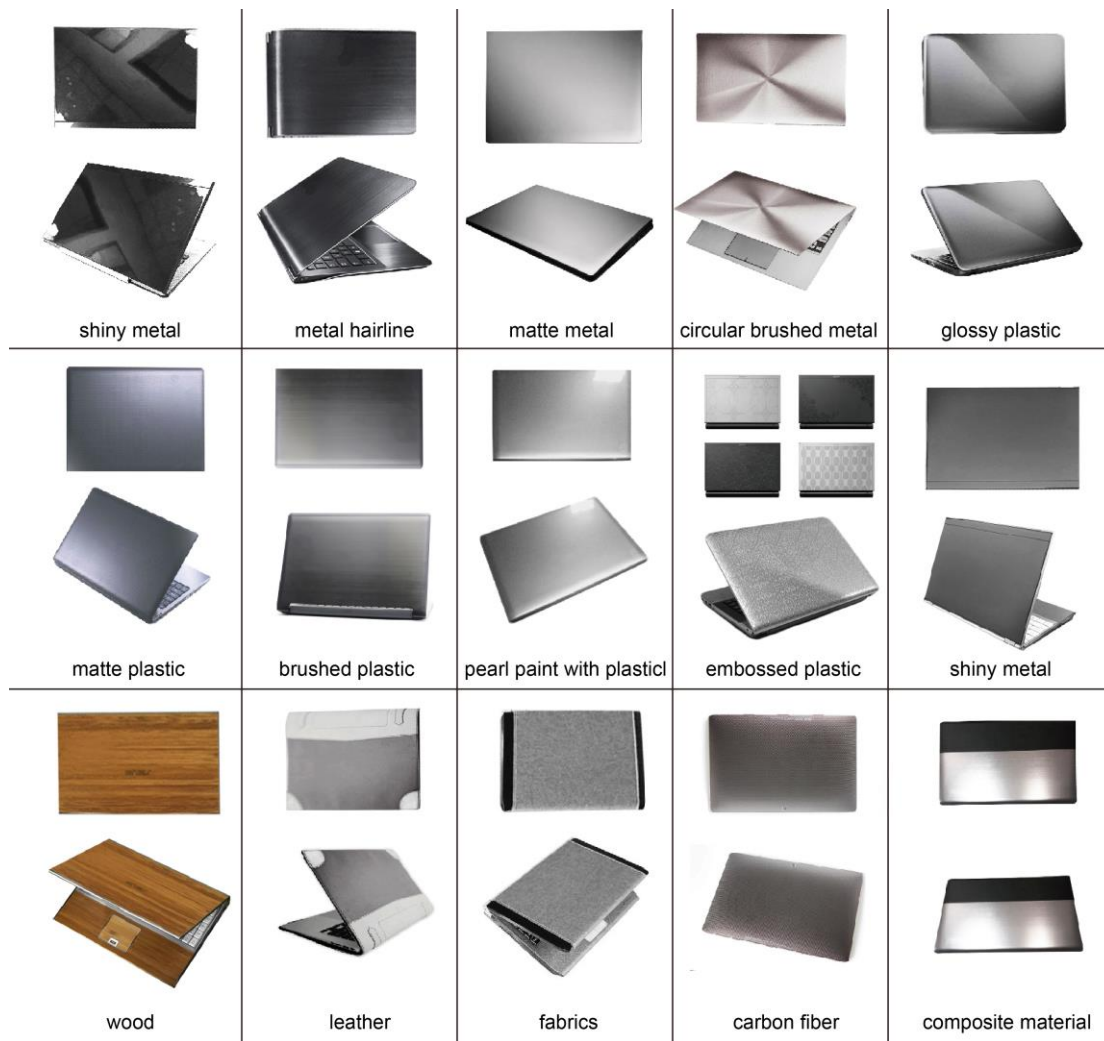| shiny metal | metal hairline | matte metal | circular brushed metal | glossy plastic |
| matte plastic | brushed plastic | pearl paint with plasticl | embossed plastic | shiny metal |
| wood | leather | fabrics | carbon fiber | composite material |

Figure1: Laptop LCD back cover's texture samples

In terms of color, Practical Color Co-ordinate System (PCCS) is a practical color matching system by Japan Color Research Institute in 1965.

Comprehensive three attributes of color from Munsell and the structure of Oswald. The color system is based on the three additive primary colors (RGB) and the three subtractive primary colors (CMY). The PCCS contains four primary psychology colors, makes the color system have more specific concept in color planning. PCCS combine the Value and Chroma to the "Tone" and can express color more effective in the future. Therefore, this research would use the PCCS 24 color wheel (see figure 2) and PCCS 12 Tone (see figure 3) for subject to select.
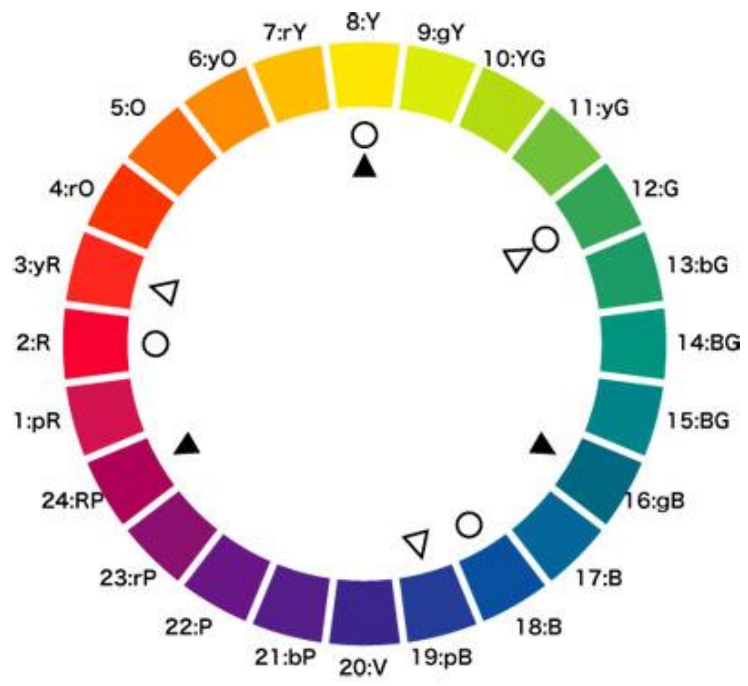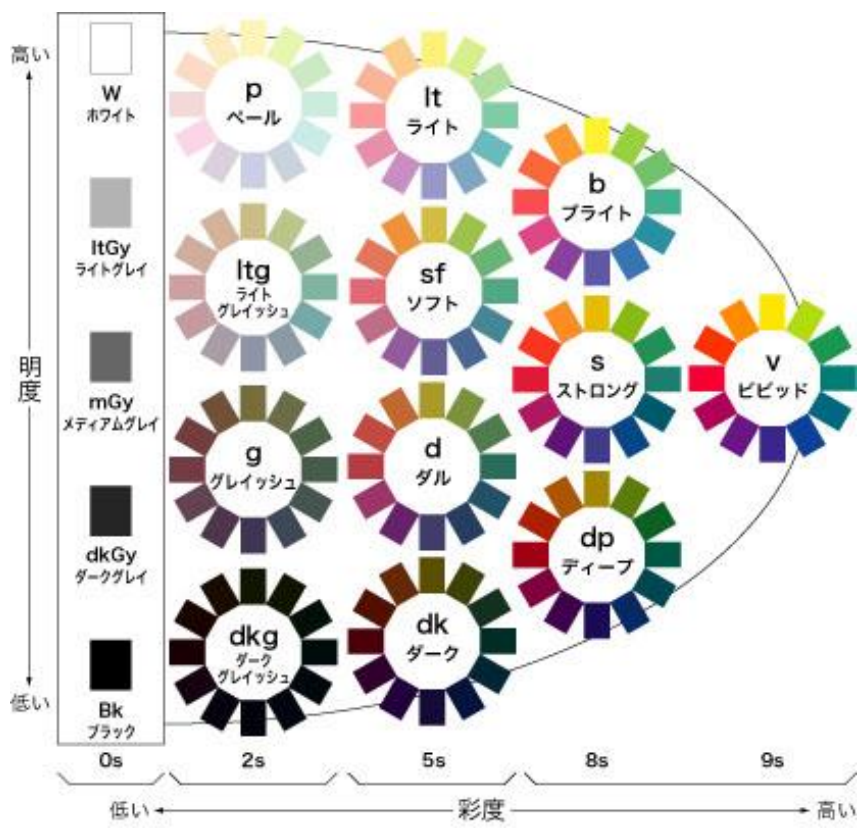
Figure 2: PCCS 24 Hue color wheel

Figure 3: PCCS 12 Tone

2. EXPERIMENTAL

In this research would interviews six subjects and included three male and three female, with semi-structured interview and asking them the preference for these 15 laptop LCD back cover's texture samples and the preference for the Hue from PCCS 24 Hue color wheel and the preference for the Tone from PCCS 12 Tone. Then, generalize the subjects' emotional interactions from matching color and texture with laptop LCD back cover.

Empirical approach

(a) Subjects have to choose the favorite texture and the least favorite texture among those laptop LCD back cover's texture cards. The subjects have to explain why.

(b) Subjects have to choose the favorite hue and the least favorite hue by the PCCS 24 Hue color wheel. The subjects have to explain why.

(c) Subjects have to choose the favorite tone and the least favorite tone by the PCCS 12 tone. The subjects have to explain why.

(d) Experimenter simulated the matching from hue, tone and texture with Laptop LCD Back Cover on the computer make subjects say their feeling and preference. There are 12 parts among this step.
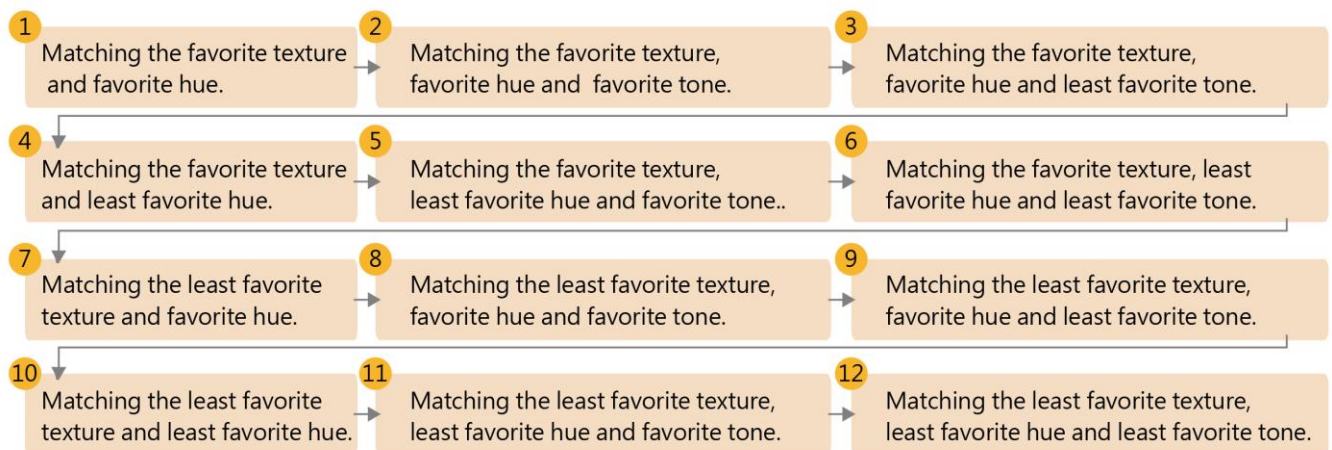
1 Matching the favorite texture and favorite hue.	2 Matching the favorite texture, favorite hue and favorite tone.	3 Matching the favorite texture, favorite hue and least favorite tone.
4 Matching the favorite texture and least favorite hue.	5 Matching the favorite texture, least favorite hue and favorite tone..	6 Matching the favorite texture, least favorite hue and least favorite tone.
7 Matching the least favorite texture and favorite hue.	8 Matching the least favorite texture, favorite hue and favorite tone.	9 Matching the least favorite texture, favorite hue and least favorite tone.
10 Matching the least favorite texture and least favorite hue.	11 Matching the least favorite texture, least favorite hue and favorite tone.	12 Matching the least favorite texture, least favorite hue and least favorite tone.

Figure 4: Experimenter simulates the matching of texture and color with laptop LCD back cover on computer.

3. RESULT

Subjects choose the favorite texture and least favorite texture from the laptop LCD back cover's texture samples and explain the reasons, then choose the favorite hue and least favorite hue from PCCS 24 color wheel, Finally choose the favorite tone and least favorite tone from PCCS 12 tone. The following table is each subject favorite and least favorite texture, hue and tone. Table1 is subjects favorite color, hue and tone and the reason.

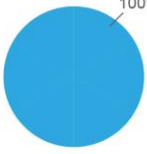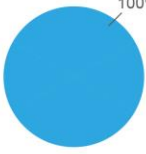Table 1: the subjects favorite texture, hue and tone and the reason.
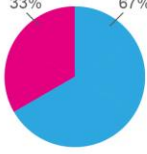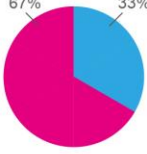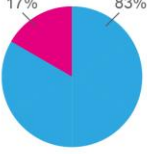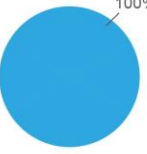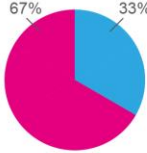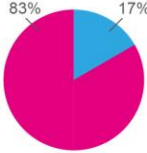
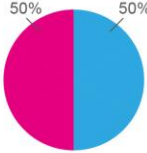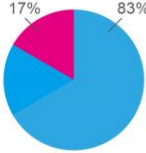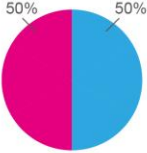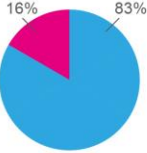|	The favorite texture	The reason for	The favorite hue	The reason for	The favorite tone	The reason for
subject 1	wood	Technology products with wood texture would feel more warm, and make technological sense less / wood : high-quality and relaxing and special / high-quality is the key to buy a laptop / relaxed feeling, good close	7:ry	Warm and bright make people feel happy / cheerful / positive color/ soft color.	Light (lt)	Lighter / more relaxed and casual
subject 2	metal hairline	High quality /when you are working will feel more effective / make users feel great confidence in this laptop/ cool feeling tools make people feel more efficient in work	10:yg	The color seems like grass/ nature / relaxed feeling / young feeling	Pale (p)	make thing feeling very light
subject 3	shiny metal	Looks very clean/ very fashion / fashion is the key to buy a laptop	9:gy	Nature /energetic / comfortable	Light grayish (ltg)	Refreshing/ harmless /less vivid looks more comfortable

subject 4	metal hairline	High-quality, introverted, calm / feel things have efficiency	23:rp	Purple is the color of emperors / noble / noble calm	Dark (dk)	Calm
subject 5	matte metal	May look clean and comfortable / calm	16:gb	Looks very comfortable catching	Dull (d)	Not too bright nor too dark / feel very calm and comfortable
subject 6	matte plastic	High-quality , fashion, make sense / high quality is the key to buying laptops	3:yr	Very bright very energetic / youthful enthusiasm	Vivid v	Bright and Vivid / Sunny

Table 2: the subjects least favorite color, hue and tone and the reason.

	The least favorite texture	The reason	The least favorite hue	The reason for	The least favorite tone	The reason for
subject 1	embossed plastic	Too complicated/ too fancy /too over / too deliberate	16:gb	dirty/ not pure / gloomy / feeling heavy	Dark (dk)	Looks dirty and feel heavy
subject 2	fabrics	feel Indifference and without professional	22:p	tacky / weird	Vivid (v)	Too vivid make me feel too strong /heavy
subject 3	Embossed plastic	Complex / extra cumbersome feeling / heavy	23:rp	Vague ambiguous, dirty / filthy sense	Dark (dk)	Looks pressure, look dirty / both bright and dark / too much discomfort color
subject 4	Embossed plastic	complicated	15:bg	Cheap	Pale (p)	Flirty / feminine
subject 5	wood	Looks not like a computer / easily be scratched / too special	5:o	Too harsh /feminine / ugly	Vivid (v)	Feel busy
subject 6	robber	Low-quality / cheap	21:bp	Metamorphosis / dark / evil	Grayish (g)	Dirty / not pure

Table 3: After matching the texture and color, the subject preference.

Matching the favorite texture and favorite hue.	Matching the favorite texture, favorite hue and favorite tone.	Matching the favorite texture, favorite hue and least favorite tone.	Matching the favorite texture and least favorite hue.	Matching the favorite texture, least favorite hue and favorite tone.	Matching the favorite texture, least favorite hue and least favorite tone.
33% / 67%	67% / 33%	100%	100%	17% / 83%	100%
Matching the least favorite texture and favorite hue.	Matching the least favorite texture, favorite hue and favorite tone.	Matching the least favorite texture, favorite hue and least favorite tone.	Matching the least favorite texture and least favorite hue.	Matching the least favorite texture, least favorite hue and favorite tone.	Matching the least favorite texture, least favorite hue and least favorite tone.
67% / 33%	83% / 17%	50% / 50%	17% / 83%	50% / 50%	16% / 83%

● Subjects like this matching more than matching the texture and theachromatic color with laptop LCD back cover.

● Subjects like this matching less than matching the texture and theachromatic color with laptop LCD back cover.

4. DISCUSSIUN

The change about the emotion and preference of subjects, in this part would divide into six sub-parts to discussion. Which 1-4 would divide into three small sub-parts to discussion by matching texture, hue and tone with laptop LCD back cover, some of which refer to the original tone is the hue' original tone from the PCCS 24 color wheel, which is the vivid tone . For example, 4-1-1 is discussing that matching the subjects' favorite texture, favorite hue and original tone with laptop LCD back cover, in this part the tone we are discussing is that appear from PCCS 24 color wheel, so the original tone is the vivid tone.

And 4-1-2 is discussing that matching the subjects' favorite texture, favorite hue and favorite tone, in this part the tone we are discussing is the favorite tone, which chosen by the subjects. The part 4-5 and 4-6 is discussing in the general direction of color and texture, the emotional impact on subjects from color and texture, which is stronger. Is the color affecting texture image to subjects' emotion or the texture affecting color image to the subjects' emotion, is the purpose.

4.1. Matching the subjects' favorite texture and favorite hue with laptop LCD back cover.

In this part we can find that, the tone impact on the subjects' emotion more than others. When matching the subject's favorite texture and favorite hue with LCD back cover, they would not increase their preference necessarily, but when matching the favorite tone with it, they would, in the contrary if matching the least favorite tone with it, the preference were decreased significantly. Therefore consumer has high sensitivity about the value and saturation. They care about the matching of color and texture, if it is a good matching would make consumer increase their preference, in the contrary, if it is a not a good matching even the same hue but different tone, consumer would feel differently totally. The following is three sections to observe it.

4-1-1. Matching the subject's favorite texture and favorite hue and original tone with laptop LCD back cover.

In this part, all of six subjects think the quality is decrease when matching color with the favorite texture, but they feel it looks more fashion and special. Maybe it's too fashion make four subjects dislike it. Such as subject 6, when the matching the matte plastic, which he feel high-quality and make sense and the hue 3:r:y, which he feel energetic and youthful he said "it's really special but it's too over, I don't like it " .

But there are two subjects like this special feeling of the matching. We can learn by the verbal information, they think there is a feeling of being supported in their mind when matching their favorite texture and favorite hue with the laptop LCD back cover. Such as subject 4 has mentioned that matching the metal hairline, which he feel high-quality, clam and introverted with the purple color, his favorite color, he feels noble and clam makes him feel complete, harmony and a sense of worth and seem like a limited good, sell in a special festival. He wants to buy it really.

Therefore, we can find that everyone feel differently in the "special", Some people like to collect something special or limited while others are more like the general products.

4-1-2.Matching the subject's favorite texture and favorite hue and favorite tone with laptop LCD back cover.

In this part, there are four subjects like this matching more than the achromatic color laptop LCD back cover's texture. All of them feel this matching is really beautiful. Although each person describes the feeling is not the same, but the verbal information can be learned, this matching can increase their emotion about color.

Such as the subject 1, when she describes her favorite color and favorite tone, she think the hue, 7:r:y make her feel happy and cheerful and the light tone make her feel lithe and relaxed, when matching with wood texture of laptop LCD back cover.　She said the quality decrease, but only a little, instead it's impact on spiritual more.　It makes her feel very relaxed.　The subject 2 also said, matching the nature and younger hue, 10:y:g and the pale tone, She feel lithe with the metal hairline texture of laptop LCD back cover makes her feel retro.　Retro is the popular trend now. She said this matching decrease technology sense and give people relaxed feeling more, If you can be relaxed when you are using computer is a good thing.

The subject 5 also said matching his favorite hue, 16:g:b and the dull tone, he feel clam with the matte metal texture of laptop LCD back cover, he feel comfortable.　He said the quality of the laptop is decreased but the metallic feeling of the matte metal is increased and it would give a comfortable and relaxed feeling when people using the laptop.

Based on the above, we can find that if the laptop LCD back cover's texture can increase the feeling from the color image and affect consumer psychology and spiritual, consumer would like it more.　Both of these two subjects, who likes the achromatic color laptop LCD back cover's texture more are said that they like black color laptop because it's the most general color laptop in the market, but if the achromatic color texture is white or gray, they would prefer the laptop LCD back cover, which is matching by their favorite hue and tone. Therefore, the matching of the color and texture is important.　Although some consumers prefer black color laptop sparingly, but some consumers want to be able to have a laptop, which can affect his spiritual and make them feel happy when they're using the computer.

4-1-3. Matching the subject's favorite texture and favorite hue and least favorite tone with laptop LCD back cover.

In this part, all of the subjects have indicated that they don't like it.　There are three subjects said it's a good look and have technology sense, but still prefer the achromatic color laptop.

Such as subject 3 and subject 4, they said it's look great and hi-tech feel, but they prefer their laptop has the introverted feeling, so they would rather to choose the achromatic color one, even if they think the matching is beautiful.

The subject 5 also said matching his favorite hue, 16:g:b and the vivid tone, he feel busy with the matte metal texture laptop LCD back cover, he feel it's hi-tech, but like a toy, so he dislike it.　He said "computer should make people feel them can work efficiently.

4.2. Matching the subjects' favorite texture and least favorite hue with laptop LCD back cover.

In this part, we can find that, the matching of the favorite texture and the least favorite hue would not make people like it.   However, when it is matching with the least favorite tone, all of the subjects' preference is decrease.   Based on above, we can say that the Hue and the Tone have a great influence in laptop LCD back cover's texture.   Also we can infer that color can affect the laptop LCD back cover's texture image.   Even the texture is the subject's favorite, when it be matched with their dislike color would make subject dislike the laptop.   And the reason for why they dislike it is similar to the color image.   Therefore, we can explain that the subjects' emotion is affecting by the color from the verbal information. The following discussion is divided into three parts.

4-2-1. Matching the subjects' favorite texture and least favorite hue and original tone with laptop LCD back cover.

In this part, all of the subjects prefer the achromatic color laptop LCD back cover.   Such as the subject 1, when matching the hue, 16:g:b, she feels cloudy with her favorite wood texture laptop LCD back cover, she dislike it and feel all shortcomings are on this laptop and she feels the laptop is both cold and stupid kind of feeling, makes her feel very cloudy. Therefore, we can find that the texture image is easy be influenced by color.   Since the color match with the texture, it is easy to cover the image about the texture itself.   People seem to feel more intense by color.

Such as the subject 2, when matching her favorite texture, the metal hairline, which makes her feel that she can work efficiently with the hue, 22:p, she feels very tacky, she said "It makes me feel great pressure and if use this laptop to work, it's seems like I have lots of work to do"

4-2-2. Matching the subjects' favorite texture and least favorite hue and favorite tone with laptop LCD back cover.

In this part, all of the subjects increase their preference.   However there are still five subjects think that although the preference has been increased, but still dislike it.   Such as the subject 2, when matching her favorite texture, the metal hairline, which makes her feel that she can work efficiently with the hue, 22:p, she feels very tacky and the pale tone, she feels light, she said " It's become more beautiful and like a noble and elegant girl, but I'm not going to use it, I am a simple person."

4-2-3. Matching the subjects' favorite texture and least favorite hue and least favorite tone with laptop LCD back cover.

In this part, all of the subjects said they do not like it, there are three subjects said that they dislike it very much.   Such as the subject 2, when matching her favorite texture, the metal hairline, which make her feel that she can work efficiently with the hue, 22:p, she feels very tacky and the vivid tone, she feels heavy ant too stronger, she said "It's very ugly and make me feel there are lots of work can't be finished.   And such as subject 3, when matching his least favorite hue, 23:r:p and dark tone with the laptop LCD back cover, she said:" It's looks very alert and makes me feel that when I using this laptop would be very stressful.

And the other three subjects also said that matching the least favorite tone with favorite texture and least favorite hue is better than matching the original tone with it, but they still prefer the achromatic color one.   Such as the subject 5, when matching his least favorite hue, 5:o and the vivid tone, he said" I hope that the laptop has both comfortable and calm feeling, I can get the work done efficiently, but now it makes me feel casual, so if I'm going to travel I'll choose this one.

By the subject's verbal information, we can learn that the hue of the color has a great influence more than the texture and the texture is affected by the color.   When matching the subject's favorite texture with their least favorite hue, all the subjects dislike this and the reason is similar to the why they do not like this color.   Thus we can say color can effect the subject's emotion.   Matching the hue and the tone is an important thing, when we match the subject's least favorite hue and least favorite tone with laptop LCD back cover's texture, the preference is increased.   However, the reason for this can generally be assumed that if match the tone can be mitigated subjects antipathy to the hue and then turned negative emotions to positive, then increases their preference.

4.3.   Matching the subjects' least favorite texture and favorite hue with laptop LCD back cover.

In this part, the subjects increase their preference, no matter it's the subject's favorite tone or not, when matching the subject's least favorite texture with their favorite hue, their preference would be increased, makes subjects changed their mind. Because of the color, their favorite, the subject's negative emotions are also turned into positive gradually.

4-3-1. Matching the subjects' least favorite texture and favorite hue and original tone with laptop LCD back cover.

In this part, the subjects decrease their preference obviously.   Such as the subjects 3,

when matching the leather texture, which makes her feel unprofessional with the hue, 10:y:g,she feels nature and relaxed, she says it's kindly and just like a friend and makes people feel confortable and relaxed.   And such as the subject 5, when matching the wood texture, which makes him feel too special and the hue, 16:b:g, which makes he feel confortable, he says "It's look confortable and lively, the lines of wood played down, the uncomfortable feeling is disappear ".   This seems like subjects' emotion was impact on the color original image.

4-3-2 Matching the subjects' least favorite texture and favorite hue and favorite tone with laptop LCD back cover.

In this part, all of the subjects' preferences have further increased.   Such as subject 1, matching embossed plastic texture, which makes her feel too complicated and fancy and the hue, 7:r:y, she feels warm, bright and cheerful and the light tone, she says this laptop makes her feel vitality and soft.

And such as the subject 2, matching the leather texture, which makes her feel unprofessional and indifferent and the hue, 10:y:g, makes her feel nature and relaxed and the tone, pale, she feels lithe, she says "The color of this laptop looks like in the winter, it's nature, and decrease the stressful feeling, makes me feel romantic.   This feeling of the subject is similar to the hue, 10:y:g, so we can infer that this change is affected by the color.

4-3-3. Matching the subjects' least favorite texture and favorite hue and least favorite tone with laptop LCD back cover.

In this part, only three subjects increase their preference, such as the subject 5, matching his least favorite texture, wood and his favorite hue, 16:g:b, he feels relaxed and confortable and the tone, dull, he feels clam and comfortable, he says" It's not bad, makes me feel lively, comfortable, calm and clean ".   The matching image of this is similar to the color image.

Based on above, when matching the least favorite texture and favorite hue and favorite tone, makes subject's preference increase, but if it's matching the subject's least favorite hue, their preference would be decreased a little.

Based on above, we can find that the color can affect human feeling than the texture.   The hue of the color will be significantly affect the human feelings and change the mind of the texture.   Although the tone is not as strong as the hue for consumer emotional feeling, but it can still affect people preference about the texture.

4.4. Matching the subjects' least favorite texture and least favorite hue with laptop LCD back cover.

When matching the subject's least favorite texture and hue, their preference is totally decreased. However, when matching it with their favorite tone, they would increase their preference a little. In this part, we can learn that the tone, which impact on the human emotion is less than the hue.

4-4-1. Matching the subjects' least favorite texture, least favorite hue and the original tone with laptop LCD back cover.

In this part, there are four subjects say that they dislike this more than the achromatic color one. Such as subject 5, when matching the wood texture, which makes him think it's not like a laptop's texture and the hue, 5:o, he feels too feminine, he said: this laptop looks like a failure and like a defective thing.

4-4-2. Matching the subjects' least favorite texture, least favorite hue and the favorite tone with laptop LCD back cover.

In this part, all the subjects increase their preference and prefer it than the achromatic color one. Such as subject 1, when matching the embossed plastic which she feels too deliberate and complicated and the hue, 16:b:g, she feels dark and cloudy and the light tone, she feels light and relaxed, she says "It becomes more intimate and less complexity, like the elements occur in nature now. Based on above the feeling by the match is similar to the tone image, by the subjects' feeling. And such as the subject 2, matching the leather texture, she feels too cold and not professional and the hue, 22:p, she feels vulgar and the tone, pale, she feels light, she says the imagery feeling becomes more elegant. Maybe the image of the tone changes the feeling about the texture, which makes her feels unprofessional.

4-4-3. Matching the subjects' least favorite texture, least favorite hue and least favorite tone with laptop LCD back cover.

In this part, when matching the tone, which is the subject favorite change into the one, the subject least favorite, all of the subject decrease their preference. Their reactions are similar to matching their least favorite hue and texture with laptop LCD back cover, even more annoying. Such as the subject 5 when matching the wood texture, which make him think it's not like a laptop texture and the hue, 5:o, he feels too feminine and the vivid tone, he said: this laptop looks like a failure and like a defective thing. These can be explained that the change of the tone will affect the subject's feelings about texture and hue. Change

lightness and saturation of color can increase the subjects' preference.

4.5. By using the hue as the topic

To the favorite hue, we can find that, the Laptop LCD back cover's texture does not have strong impact on the subjects' emotion by using the hue as the discussion topic.   When matching their least favorite texture and the favorite color and tone, the subjects' preference would be increase.   However, when matching their favorite texture and the least favorite color and tone, the subjects' preference would be decrease.   Therefore, we can infer that the color effects human emotion stronger than texture does.   Such as the subject 2, matching the leather texture, which makes her feel unprofessional and indifferent and the hue, 10:y:g, she feels nature and relaxed and the tone, pale, she feels light, she says "The color of this laptop looks like in the   winter, it's nature, and decrease the stressful feeling, makes me feel romantic .   This feeling if the subject is similar to the hue, 10:y:g, so we can infer that this change is affected by the color.

To the least favorite hue, when matching their favorite texture, the preference can not be increase.   Such as the subject 1, when matching the hue, 6:g:b, which makes her feel cloudy with her favorite wood texture of laptop LCD back cover, she dislikes it and feels all shortcomings are on this laptop and she feels the laptop is both cold and stupid kind of feeling, make her feel very cloudy.   Therefore, we can find that the texture's image is easy influenced by the color.   Since the color match with the texture, it is easy to cover the image about the texture itself.   People seem to feel more intense by color.

However, when match their least favorite texture and least favorite hue and tone with the laptop LCD back cover, the preference is increase a little.   The subjects in the face of this, they say it look match.   We can infer that maybe it's a phenomenon about two negatives make a positive. Such as the subject 1, matching her least favorite texture, embossed plastic and the least favorite hue, 16:g:b and the least favorite tone, dark, she says it's look nature and the color match the texture look like waves.

4.6. By using the laptop LCD back cover's texture as the topic

To the texture, match the favorite hue or favorite tone with it both can increase the preference obviously.   Such as the subject 4 has mentioned that matching the metal hairline texture and the favorite hue, 23:r:p, and the dark tone, he feels complete harmony and sense of worth and this is like a limited good, sold in a special festival.   He wants to buy it really.

On the contrary, when matching the least favorite color or the least favorite hue, the subject's preference decrease obviously. Such as the subject 2, when matching her favorite texture, the metal hairline, which makes her feel that she can work efficiently with the hue, 22:p, she feel very tacky and the vivid tone, she feel heavy ant too stronger, she said "It's very ugly and makes me feel there are lots of work can't be finished.

To the least favorite laptop LCD back cover's texture, when it matching with the favorite hue or tone, both of can make the subject increase their preference. Such as the subjects 3, when matching the leather texture, which makes her feel unprofessional with the hue, 10:y:g, she feels nature and relaxed, she says it's kindly and just like a friend and makes people feel confortable and relaxed.

On the contrary, when matching the least favorite color or the least favorite hue, the subject's preference decrease obviously. Such as the subject 5 when matching the wood texture, which makes him think it's not like a laptop texture and the hue, 5:o, he feels too feminine and the vivid tone he said: this laptop looks like a failure and like a defective thing. Thus, this study find that the color has stronger effect on the laptop LCD back cover, so we can infer that human emotion is impact on the color more than texture.

4.7. SUMMARY

Lin has mentioned that, form is important to product, but human visual perception of color if higher than it.   That is, in general, the emotional impact on people of color is quicker and stronger than form (Lin, 1993).   And this research finds that, the emotional impact on people of color is stronger than not only form but also color.

This research has found that, human has high sensitivity to color than form, here we can echo Lin (1993) has says that the emotional impact on people of color is stronger than form. However, this research also finds that human has high sensitivity to color than texture.

In terms of color, the past studies have pointed out that color is the most effective product attribute for consumers.   Color preference influence judgments of consumers and plays an important role to stimulate consumption.   Also prove that Leatrice Eiseman is called America's color guru, who has says that color can dominant consumer's attention and cause their emotional reaction is really and this research infer that, the hue of the color has the strongest impact on human emotion.   Although the tone is not as strong as the hue but it can be a role to moderate some reflection, belong the changes in lightness and saturation can increase or decrease the emotion refection by the hue of people feeling.

5. CONCLUSION

People's psychological need for laptop is top quality and fashion, but they don't want it look too avant-garde. And people cares about the laptop, which makes them feel that they can work efficiently and be comfortable when they use it. In the future may be able to research that how to design the product, which can meet the consumer's inner demand. If matching some color with laptop LCD back cover can make people feel pleasure and can work efficiently, people would increase their preference. At the same time, this research find that people do not like too complicated and not professional things. If matching some color with laptop LCD back cover makes people feel stressed, they would decrease their preference. Via depth-interviews, we found that people care about the appearance of the laptop secondarily, the mental feeling by they use it is the most important thing they care about.

This research has found that human has high sensitivity to color than not only form but texture. And this research infers that, the hue of the color has the strongest impact on human emotion. After the analysis of this research, we can find that the subjects' description about the matching by color and texture with laptop LCD back cover is similar to the description about the color. It can be seen, there is a strong sense of color, which can affect the texture image and the feeling of laptop.

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At the same time, this research has an unexpected discovery about matching the vivid tone with the laptop LCD back cover, which is that the subjects will decrease the preference, no matter they like the vivid tone or not. All of the subjects think that, matching the too bright color with the laptop would make them feel awkward and stressful. About the above can match the Kuo (2009) Consumer preferences low saturation color.

Finally, this research use semi-structured interview and analyze the verbal information. This research is still not completely clear. Each one of the subjects has their own subjective awareness about the color and texture. Such as the hue, 23:r:p, some subjects think it's a noble color , but some subjects think it's a tacky and disgusting color. Therefore, this research is not matching each color and texture one by one but matching the color, which is their favorite one or not with the laptop LCD back cover, makes the subjects feel about. Thus maybe some future researches can match each color and texture one by one in order to enhance the reliability and validity by some statistical method. It can offer a method to tell designer how to match the color and texture with the laptop LCD back cover, which can make people increase their preference about the laptop in the future.

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