

**CHARACTERIZATION DECORATIVE VENEER
PATTERNS STYLE BY SEMANTIC DIFFERENTIAL
METHOD**

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ABSTRACT

Based on a Kansei image investigation of 300 college students with their visual and psychological feelings, the organoleptic properties and quantitative evaluation of 28 kinds of decorative veneer patterns were researched by semantic differential method. The distribution of sensory dimension, emotional dimension and evaluation dimensions of the different decorative veneers were studied respectively. The results showed that 1) the sensory dimension, 71.5 % of the decorative veneers distributed in "rough - elegance" quadrant and the "smooth - magnificent" quadrant, these decorative veneer patterns varied rich, vibrant colors unassuming, with a decorative feature; 2) the emotional dimension, 89.3 % of the decorative veneers distributed in "comfortably - like" quadrant and the "indisposed - disgust" quadrant, reflecting subjects emotional changes for decorative veneer patterns significantly different; 3) the evaluation dimension, 92.9 % of the decorative veneers distributed in the "practical - natural" quadrant and the "decorative - artificial" quadrant, indicating that the most of the decorative veneers have "natural - practical" and "artificial - decorative" properties.

KEYWORDS: Decorative veneer, pattern style, characterization.

INTRODUCTION

Wood is a natural ecological material, with excellent physical and mechanical property, process-ability and environmentally friendly features, have been used by humans for thousands of years. Beautiful natural texture, rich color is natural properties of wood, but also constitutes a timber with warm, pleasant feeling of important factors. All of wood grain pattern has a certain rhythm, and human circadian rhythms are intrinsically linked, and also can cause people emotional resonance (Sakuragawa 2006; Song et al. 2011a, b). Decorative veneer is commonly wood based panels cover materials, with the same appearance as the natural wood, so favored. Decorative veneer thickness is usually 0.2-0.5 mm, because the maximum use of the precious tree resources, so by the relevant researchers' attention. Our decorative veneered wood based panels occupies an important position in the decorative wood based penal industry, the product is mainly used for furniture making, wood floors and interior decoration and so on. Previous studies, most researchers focus on decorative veneer preparation process and the product application (Sun et al. 2013; Xiong et al. 2013; Li et al. 2000; Ma et al. 2005; Hua 2005), ignored the decorative veneer of emotional expression research. This study focus on emotional characterization of decorative veneer by semantic differential method, the purpose is to perfect and supplement the original study, and to comprehensive research decorative veneer language connotation in a broader perspective.

MATERIAL AND METHODS

Decorative veneer, commercially available, their patterns as shown in Fig. 1. Tab. 1 shows the timber with the name corresponding to Fig. 1.

Tab. 1: Decorative veneer patterns corresponding timber names.

No.	Timber name	Scientific name	No.	Timber name	Scientific name
1	Camphor	<i>Cinnamomum camphora</i>	15	White oak	<i>Quercus</i> spp.
2	Red beech	<i>Fagus sylvatica</i>	16	Maple radial	<i>Liquidambar formosana</i> Hance
3	Maple tangential	<i>Liquidambar formosana</i> Hance	17	Rosewood	<i>Aniba rosaeodora</i>
4	Turpinia burl	<i>Turpinia</i> Vent.	18	Gall root	<i>Tectona grandis</i>
5	Lacewood	<i>Panopsis</i> spp.	19	Ebonylike	<i>Diospyrus</i> spp.
6	Platanus	<i>Platanus</i> Linn.	20	Maple burl	<i>Liquidambar formosana</i> Hance
7	Red sapele	<i>Entandrophragma cylindricum</i>	21	Cypress burl	<i>Cupressus sempervirens</i>
8	White sapele	<i>Entandrophragma cylindricum</i>	22	Kumquat burl	<i>Fortunella margarita</i>
9	Lei Muk	<i>Pyrus</i> spp.	23	Walnut burl	<i>Juglans nigra</i>
10	White Pine	<i>Pinus armandii</i> Franch	24	Poplar burl	<i>Populus</i> spp.
11	Maple vortex	<i>Liquidambar formosana</i> Hance	25	Sen burl	<i>Lkaloanax ricinifolium</i>
12	Cherry	<i>Cerasum and Cerasus</i>	26	Macore burl	<i>Tigebmella heckelii</i>
13	White beech	<i>Zelkova serrata</i> (Thunb.) Makino	27	Sapele burl	<i>Entandrophragma cylindricum</i>
14	Gall wood	<i>Tectona grandis</i>	28	Zingana	<i>Microberlinia</i> spp.

Semantic differential method, also known as bipolar adjectives analysis, the purpose is to analyze the specific object gives people what sense, and in their minds has the image, so that to determine the appropriate attitude (Ma 2004; Yamamoto 2005; Sakuragawa et al. 2005). To avoid subjects due to age, occupation, cultural background for decorative veneer differences affect

visual perception, to be tested in this experiment as a random sample of the population of students (including undergraduate and graduate), a total of 300 people, male 120, female 180 people, average age (23±1) years of age.

In order to avoid too cumbersome and lengthy experimental process, resulting in the experiment to be tested negative emotions affect the accuracy and reliability of test results, on the basis of previous studies (Qian 2006; Kong 2007). A conscious choice the senses, emotions, and evaluation three dimensions for 28 decorative veneer patterns characteristic species tested. Sensory observation refers to the subjects after the picture generated visual stimuli, emotion refers to the psychological reactions of subjects after seeing pictures, and evaluation refers to the subjects after the picture given by comparing the significance and value. Tab. 2 is a representation of the semantic differential bipolar adjectives texture pattern of the decorative board of the three dimensions.

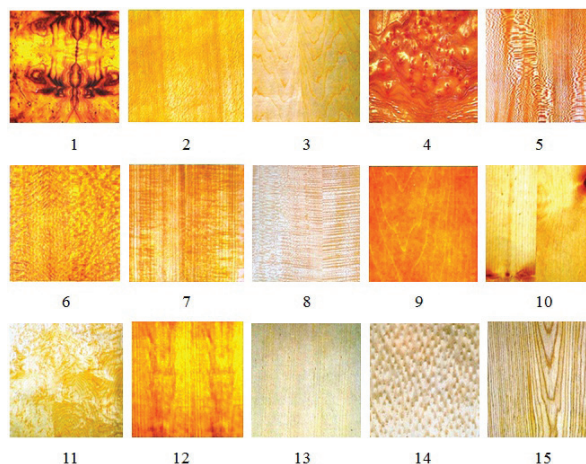
Tab. 2: Representative semantic differential bipolar adjectives texture pattern of decorative veneer.

Senses	Emotions	Evaluation
Elegance - Magnificent	Disgust—Like	Practical - Decorative
Smooth - Rough	Comfortable—Indisposed	Artificial - Natural

When observed under a decorative veneer in a different light, visual perception results vary. Therefore, the 28 kinds of decorative veneer patterns with a computer scan to produce images in the form of the test by the experiment. To maximize retention picture messages, saved in BMP format and make it uniform pixel size. The 28 pictures made of slides, each picture by showing eight seconds for the test, and then the next one automatically becomes easy to be tested carefully observed. Subjects need to choose their own psychological feeling or judgment, and ticks in the corresponding position in the Tab. 3 of the semantic evaluation scale.

Tab. 3: Semantic differential evaluation scale.

Evaluation scale	Very	Comparative	Trifle	Moderate	Trifle	Comparative	Very
Fraction	3	2	1	0	-1	-2	-3



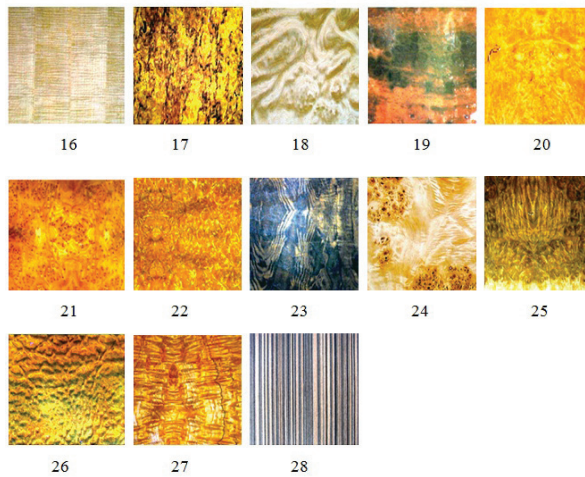


Fig. 1: Decorative veneer patterns style.

RESULTS AND DISCUSSION

Fig. 2 shows the quadrant distribution of 28 kinds decorative veneers sensory dimension. Obviously, 71.5 % of the decorative veneers distributed in "rough - elegance" quadrant and the "smooth - magnificent" quadrant. Wherein, there are 12 kinds of decorative veneers (42.9 % of the proportion of the total) located in "smooth - magnificent" quadrant, and 8 kinds of decorative veneers (28.6 % of the proportion of the total) located in "rough - elegant" quadrant. These decorative veneer patterns varied rich, vibrant colors unassuming, with a decorative feature. It is noteworthy that, on the 9th decorative veneer (Lei Muk) and the 27th of the decorative veneer (Sapele burl) are located in the top of the "smooth - magnificent" quadrant and the bottom of the "coarse - magnificent" quadrant, respectively. And the 2nd decorative veneer (Red beech) and the 4th decorative veneer (Turpinia burl) are located in "rough - elegant" quadrant left and the "rough - magnificent" quadrant of the right, respectively. The 4 kind decorative veneers have a unique pattern of vivid color changeable, so giving a strong sensory stimulation.

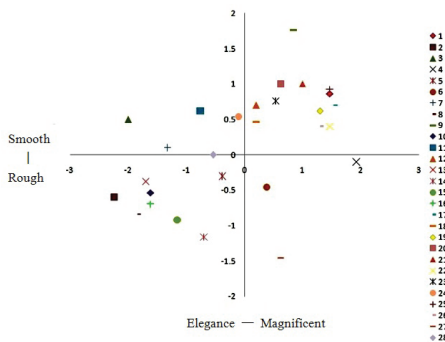


Fig. 2: Quadrant distribution of decorative veneer sensory dimension.

Fig. 3 shows the emotional dimension distribution of 28 kinds decorative veneers. As can be seen, 89.3% of the decorative veneers distributed in "comfortable - like" quadrant and the "indisposed - disgust" quadrant, reflecting subjects emotional changes for decorative veneer patterns significantly different. There are 11 kinds of decorative veneers and 14 kinds of decorative veneers (39.3 and 50.0 % of the total, respectively) in the "comfort - like" quadrant and the "indisposed - disgust" quadrant. It is clear that 12th decorative veneer (Cherry) located in the "comfort - like" quadrant most prominent position, the decorative veneer with a delicate texture, arranged in orderly feature, so with a comfortable advantage. The 19th decorative veneer (Ebonylike) is located in the significant position of "indisposed - disgust" quadrant, showing a thick rib, like ripples-like texture, and color changes abruptly, making the subjects feel unwell.

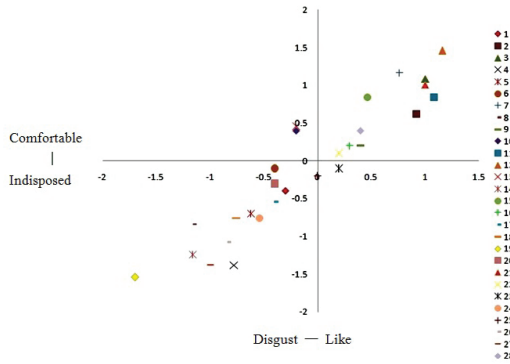


Fig. 3: Quadrant distribution of decorative veneer emotional dimension.

Fig. 4 shows the distribution of decorative veneer evaluation dimensions. It can be seen that 92.9 % of the decorative veneer distributed in the "practical - natural" quadrant (28.6 % of the total) and the "decorative - artificial" quadrant (64.3 % of the total), respectively, indicating that most of the decorative veneer have "natural - practical" and "artificial - decorative" properties, it can be accepted by the public. "Nature - practical" remarkable characteristics is the 10th (White pine) and the 15th (White oak) decorative veneer, simple and natural textures favored by young people.

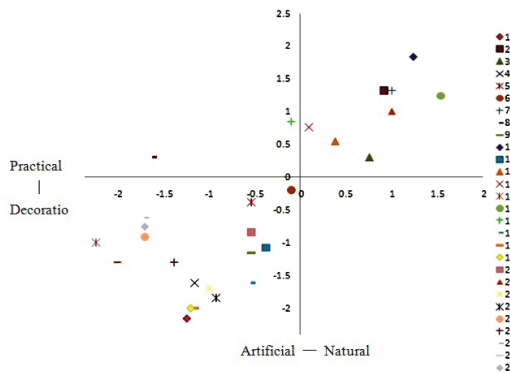


Fig. 4: Quadrant distribution of decorative veneer evaluative dimension.

CONCLUSIONS

In this study, a novel way was developed to characterize the sensory, emotional and evaluation features of decorative veneer patterns style.

- 1) In the sensory dimension, most decorative veneers (71.5 % of the total) located in the "rough - elegance" quadrant and the "smooth - magnificent" quadrant. Patterns characteristic of these decorative veneers is rich texture and changeable color in the visual sensory feeling, giving the impression that smooth magnificent, simple and elegant.
- 2) In the emotional dimension, majority decorative veneers (89.3 % of the total) distributed in "comfortable - like" quadrant and the "indisposed - disgust" quadrant, reflecting subjects emotional changes for decorative veneer patterns significantly different.
- 3) In the evaluative dimension, the vast majority of decorative veneers (92.9 % of the total) situated in the "practical - natural" quadrant and the "decorative - artificial" quadrant, with practical and decorative edge.

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