aic 2011

ZURICH · 7-10 JUNE

SWITZERLAND

Interaction of Colour & Light

in the Arts and Sciences

Midterm Meeting of the
International Colour Association (AIC)
7–10 June 2011
Zurich, Switzerland

Book of Abstracts

Conference Proceedings on CD

Editors: Verena M. Schindler, Stephan Cuber

pro/colore
Schweizerische Vereinigung für die Farbe

AIC International Colour Association
Internationale Vereinigung für die Farbe
Association Internationale de la Couleur

A color preference model for different color appearance modes

Uravis TANGKIJVIWAT, Surachai KHANKAEW and Akaradaje THOUNGSAWANG
Faculty of Mass Communication Technology, Rajamangala University of Technology
Postal address: Uravis Tangkijviwat, Faculty of Mass Communication Technology,
Rajamangala University of Technology, 39 Muh 1 Rangsit-Nakornayok Rd., Khlong 6,
Thanyaburi, Pathumthanee 12110, Thailand
E-mail: uravis_t@yahoo.com

Abstract

Color preference, although, has been investigated since the early times, it remains a source of debate among the public in many fields such as sciences, designs, advertisings, marketing, fashions and so on. Many researchers have attempted to deal with color preferences and their variations as a function of age, gender, geographical region, culture, and circumstances. Along with the aforesaid variations, color preference also depends on the color appearance mode. In our daily life, colors are perceived not only as an object color mode, but also as other modes such as an unnatural object color mode and a light source color mode. The major aim of this work is to develop color preference model on the basic of the perceived color attributes for different color appearance modes.

In our previous study, thirty-three color chips were presented in different color appearance modes by changing the intensity of the environmental illuminance and the test chart luminance. The experimental result expresses that color preference varies according to the color appearance mode. It changes a lot in the object color mode and a little in the unnatural object and light source color modes. Since a change in the color appearance mode of color chips causes a change in an amount of the perceived color attributes, the relationship between color preference and the perceived color attributes was investigated. The perceived color attributes were collected from the elementary color naming. According to results, color preference significantly relates to the perceived blackness in the object color mode, while it significantly relates to the perceived whiteness in the unnatural object color mode and light source color mode.

The empirical evidence indicated that the perceived color attributes as well as the color appearance mode played important roles in color preference. This study, hence, was carried out to derive a color preference model. Even though the color preference models have been proposed, these existing models were not developed on the basis of the perceived color attributes. Furthermore, these existing models may be ineffective for predicting colors in the other modes. In this study, the results of the color preference score, color appearance mode, and perceived color attributes were obtained from twenty-four color chips presented under six conditions. The color preference model for different color appearance modes was proposed. In this model color preference could be predicted by the perceived blackness, perceived whiteness, perceived chromaticness, perceived hue, and color appearance mode index. This model is a new possible method for quantitatively predicting color preferences in three color appearance modes without using colorimetric measuring instruments and provides a reliable platform for the future study of color preference.