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Defining the Customers' Color Preference for the Apparel Industry in Terms of Chromaticity Coordinates

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Abstract : Fashion designers create lots of dresses, suits, shoes, and other clothing and accessories, which are purchased every year by consumers. Fashion trends, sketches of designs, accessories affect the apparel goods, but colors make the finishing touches to an outfit. In all fields of apparel men's, women's, and children's wear, including casual wear, suits, sportswear, formal wear, outerwear, maternity, and intimate apparel, color sells. Thus, specialization in color in apparel is a basic concern each season. The perception of color is the key to sales for every sector in textile business. Mechanism of color perception, cognition in brain and color emotion are unique subjects, which scientists have been investigating for many years. The parameters of color may not be corresponding to visual scales since human emotions induced by color are completely subjective. However, with a very few exception each manufacturer concern their top selling colors for each season through seasonal sales reports of apparel companies. This paper examines sensory and instrumental methods for quantifying color of fabrics and investigates the relationship between fabric color and sale numbers. 5 top selling colors for each season from 10 leading apparel companies in the same segment are taken. The compilation is based according to the sales of the companies for 5 to 10 years. The research's main concern is the corelation with the magnitude of seasonal color selling figures and the CIE chromaticity coordinates. The colors are chosen from the globally accepted Pantone Textile Color System and the three-dimentional measurement system CIE L*a*b* (CIELAB) is used, L* representing the degree of lightness of color, a* the degree of color ranging from magenta to green, and b* the degree of color ranging from blue to yellow. The objective of this paper is to demonstrate the feasibility of relating color perceptance to a laboratory instrument yielding measurements in the CIELAB system. Our approach is to obtain a total of a hundred reference fabrics to be measured on a laboratory spectrophotometer calibrated to the CIELAB color system. Relationships between the CIE tristimulus (X, Y, Z) and CIELAB (L*, a*, b*) are examined and are reported herein.

Keywords : CIELAB, CIE tristimulus, color preference, fashion
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