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## Effects of color and lighting on retail impression and identity



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#### ABSTRACT

In retail design, the use of color and light are important design techniques which aim to attract customers and increase market opportunities. The objectives of this study were to examine the effects of color and lighting on impression and identity of a bank sub-branch in Thailand. In this study, 144 research participants evaluated six computer-generated scenes with different color hues, lighting arrangements and correlated color temperatures using a semantic differential scaling method. The results show that different color and lighting conditions significantly affect both the impression of space and perception of retail identity. The results indicate that bank sub-branch space with chromatic conditions, especially space with warm color tone and colored-light, received a higher positive score of impression and identity. To fully understand the effect of color and lighting on space perception and retail identity, this study suggests that other color properties should be examined.

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#### 1. Introduction

For the design of a retail environment, many techniques have been used to create a pleasant and unique consumer's experience with the ultimate goal to motivate a customer's buying behavior. The design of interior elements such as lay out, sound, lighting and color can influence on customer's emotion and behavior (Kotler, 1973-1974). Color and light have been appraised as key interior design elements that affect space perception and emotion (Bellizzi, Crowley, & Hasty, 1983; Quartier, Vanrie, & Van Cleempoel, 2014; Wardono, Hibino & Koyama, 2012; Yildirim, Capanoglu, Cagatay, & Hidayetoğlu, 2012). For example, the use of color and light was suggested that it can enhance brand awareness, recognition and quality perception (Babin, Hardesty, & Suter, 2003; Bellizzi & Hite, 1992; Brengman & Willems, 2009; Schielke & Leudesdorff, 2015). Lighting affected customers' perception and provides ambience illumination, enhances contrast and makes products interesting and attractive (Areni & Kim, 1994; Custers, de Kort, IJsselsteijn, & de Kruiff, 2010).

Commercial banking business is one of the fastest growing business sectors in Thailand. Unlike other countries, the sub-branch of Thai commercial banks serves as an important channel to reach their target customers. As of January 2016, there are more than

7000 bank sub-branches scattered all over various parts of Thailand (Bank of Thailand, 2016). In order to increase the market share, most, if not all, banks exercise various marketing strategies to attract new customers and maintain existing customers. As for establishing brand identity, each Thai bank currently selects one main color and uses that main color in its logo, promotional media, as well as interior decoration. From a preliminary survey of bank sub-branch design (see Figs. 1–2), it was found that the main color was used on the walls of automatic teller machines (ATM) and exterior façade. The wall behind the service counter of a sub-branch, the focal point of the interior space, was usually a large surface covered with the bank's main color. For lighting design, it was found that a wide variety of lighting elements were used.

While the creation of a unique corporate identity and consumer experience enhancement was believed to be strengthened through the use of color and light in the sub-branch, unfortunately, the actual effect of color and light on space perception and retail identity has not been verified. Therefore, the purpose of the current research is to report on the study that examines effects of color and lighting on retail impression and identity with an emphasis on three design elements including: color usage, lighting arrangement and correlated color temperature of light.

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Fig. 1. Example of banking zone in the department store with various bank sub-branches.



Fig. 2. Examples of color and lighting arrangement employed in bank sub-branches. (For interpretation of the references to colour in this figure legend, the reader is referred to the web version of this article.)

#### 2. Literature review

#### 2.1. Color and retail atmosphere

The use color plays an important role in retail environment which affects customers' recognition, including perception, impression, classification and interpretation by transmission of message and meaning (Eisemann, 2000; Söker, 2009; Valdez & Mehrabian, 1994). The decision making could be motivated based on color perception (Babin et al., 2003; Bellizzi et al., 1983; Brengman, 2002; Chebat & Morrin, 2007).

The literature review showed that previous studies focused on examining the effects of color hue tone on positive impression and motivation in various retail conditions. For example, Bellizzi and Hite (1992) demonstrated that cool color could create positive image and reliability, while warm color leads to excitement and longer time spent in a retail outlet. Brengman (2002) investigated color attributes in store and consumers' affective and approach/ avoidance behavior. Yildirim, Akalin-Baskaya and Hidayetoğlu (2007) examined the impact of semi warm cool tone (e.g., yellow, purple) and found that purple environment is more positively perceived than yellow in café/restaurant environment. Söker (2009) investigated the classification of restaurant and suggested that warm color tone is more pleasant and lower prices than cool color tone. Yildirim et al. (2012) indicated that different color hues (e.g., cream, lilac, orange) on the walls of hairdressing salons affect customers' perceptions, lilac colored space was more positive than others. Moreover, Westerman et al. (2012) suggested that an interface color affects customer's decision making on both product and retail environment. In summary, it was concluded that space with cool color tones (e.g., blue, purple, green) have more positive

effect than warm color tones (e.g., red, orange, yellow) (Bellizzi & Hite, 1992; Babin et al., 2003; Crowley, 1993; Yildirim et al., 2007; Yildirim et al., 2012). In general, cool color tones are associated with unaroused, calm, restful, and spacious (Yildirim, Hidayetoğlu & Capanoğlu, 2011).

#### 2.2. Retail lighting

The main functions of retail lighting are to provide ambience illumination, attract attention and accentuate merchandise. In general, lighting arrangement, brightness level, light source property, uniformity and contrast are important factors to be considered in retail lighting design (Boyce & Raynham, 2009; Rea, 2000).

Base on literature review, previous research examined the effects of various retail lighting configurations on space perception, emotion and customer response. For example, Areni and Kim (1994) examined dim lighting and bright lighting on customer responses (e.g., time spending, number of products) in a wine store. Summers and Hebert (2001) demonstrated that lighting plays an important role in increasing behavioral intentions in store's atmosphere. Additional accent lighting was found to be more time spending, product touching and picking up. Park and Farr (2007) examined the color rendering index (CRI) and correlated color temperature (CCT) on emotional responses and found that warmer lighting is more arousal and clarity than cooler lighting. While, Durak, Olguntürk, Yener, Güvenç and Gürçınar (2007) and Baumstarck and Park (2010) suggested that lighting arrangements and lighting levels may affects space impression and emotion. Schielke (2010) suggested that colored light could convert identity of retail space, such as price level, style, expressiveness and attractiveness. Quartier et al. (2014) stated that lighting could be

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