International Journal of Hospitality Management 69 (2018) 124–131

Contents lists available at ScienceDirect

International Journal of Hospitality Management

journal homepage: www.elsevier.com/locate/ijhm

The influence of emotional response to interior color on restaurant entry decision

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ARTICLE INFO

Keywords:
Predicting model
Color
PAD emotion
Entry decision
Restaurant
SOR model

ABSTRACT

Color is one of the essential aesthetic design elements in restaurant setting due to its high impact on customer's emotional and behavioral responses. The purpose of this study is to explore the linkage between emotional response to interior color and restaurant entry decision. A total of 496 research participants evaluated eleven computer-generated restaurant scenes with different interior colors. Each participant was asked to evaluate his/her emotional responses on nine adjective pairs of the PAD emotion scale as well as his/her entry decision. Logistic regression models were derived to indicate the probability of entering the restaurant. Pleasure was found to be the best behavioral response predictor. Data analysis also showed that restaurant scenes with high value color and warm-tone color received higher scores for pleasure. This study concludes that to fully understand the effects of color on emotional and behavioral responses in restaurants, additional color attributes should be further examined.

1. Introduction

In retailing, the first visual impression of the retail environment can evoke the customer's image of the brand, communicate merchandise opportunities (Kerfoot et al., 2003; Quartier et al., 2009; Ebster and Garaus, 2011), and impulse buying behavior (Law et al., 2012; Mehta and Chugan, 2013; Hussain and Mashar, 2015). Color is one of the aesthetic design factors that is used in decoration to attract visual attention due to its impact on a customer's emotional and behavioral responses (Brengman, 2002; Babin et al., 2003; Ryu and Jang, 2008; Jang and Namkung, 2009; van Rompay et al., 2012; Cho and Lee, 2017). Previous research studies have made extensive effort to investigate the relationship between color, emotion and behavior. For example, interior color has been linked to emotion and feeling (Bellizzi and Hite, 1992; Ward and Barnes, 2001; Chebat and Morrin, 2007; Yildirim et al., 2012), retail image (Bellizzi et al., 1983; Baker et al., 1994), a customer's decision making on product and retail (Brengman, 2002; Babin et al., 2003; Westerman et al., 2012; Han et al., 2014). Nevertheless, the understanding of the relationship between emotion induced from color and a customer's behavioral response in restaurants has received less attention.

In Thailand, the restaurant business was reported as one of the fastest growing and highly competitive business segments (Kasikorn Research Center, 2014). In the past few years, with an annual business growth rate of 3–6%, many new restaurants have been opened. In retailing, with multiple options to choose from, store atmospherics plays an important role in approach behavior (Turley and Milliman, 2000; Oh and Petrie, 2012). In order to compete with other restaurateurs, the restaurant owners need to implement new marketing strategies to attract the visual attention of new customers in which one of the most effective and economical strategies is selecting or modifying interior color. Nevertheless, the color choice which would attract the visual attention of customers in a restaurant setting has not yet been investigated.

The objectives of the study are to investigate the effects of restaurant interior color on emotional response and theemotional response to color on approach-avoidance behavior of restaurant customers. The study is important both theoretically and practically. Theoretically, this study attempts to propose a predicting model that investigates the relationships among physical environments, customer emotional responses and approach-avoidance behavior in restaurants from the perspective of a first-time/passerby customer. Practically, this study can provide designers and retailers a preliminary guideline in using color as a strategy to attract visual attention in a restaurant setting.

2. Theoretical background

2.1. Atmospherics and retail

In marketing research, Kotler (1973 defined "atmospherics" as the

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http://dx.doi.org/10.1016/j.ijhm.2017.09.014
Received 27 October 2016; Received in revised form 18 August 2017; Accepted 27 September 2017

designing of space to influence specific emotions to motivate the purchase intention. Atmospherics is set up by environmental features such as light, scent, music and color. In order to explain the relationship among atmospheric features, emotional response and behavioral response, Mehrabian and Russell (1974) proposed the Stimulus-Organism-Response model (SOR model). In the SOR model, the relationship can be explained in three stages: the perception of environmental stimuli, the interpretation of visual information into emotion and the reaction toward the stimuli based on emotional response.

To further understand emotional recognition, Mehrabian and Russell (1974) also developed the emotion state model, categorizing different emotions in three dimensions including "Pleasure" – a feeling of happiness or satisfaction, "Arousal" – a feeling of stimulation caused by surroundings and "Dominance" – a feeling of being in control of a situation. The Pleasure-Arousal-Dominance (PAD) Emotion Model has been widely used in consumer research (Donovan and Rossiter, 1982; Hui and Bateson, 1991; Sherman et al., 1997; Brengman, 2002; Petermans et al., 2009; Cho and Lee, 2017).

Previous studies investigated atmospherics in various aspects and its effects on the assessment of customers. The influence of store environmental features was evaluated for its effects on a consumer's evaluation towards retail image or brand expression (Baker et al., 1994; Schielke, 2010; Murray, 2012; Erdil, 2015), mood (Wakefield and Baker, 1998; Yoo et al., 1998; Morin et al., 2007; Rayburn and Voss, 2013; Marques et al., 2013; Jeon et al., 2016), purchasing motivation and behavior (Bitner, 1992; Spies et al., 1997; Kusumowidagdo et al., 2012; Doucé et al., 2014; Gudonavičienė and Alijošienė, 2015). In summary, previous research suggested that a positive perception of environment was found to be highly linked with positive retail outcomes. For example, Baker et al. (1992) and Donovan et al. (1994) showed that the amount of time and money spent increases as the perception of pleasure increases. Brengman (2002) suggested that approach intention toward a store appears to be positively affected by store-color-evoked pleasure and excitement. Kim and Moon (2009) suggested that pleasure and service quality strongly influenced the intention to revisit. Lastly, Kumar and Kim (2014) showed that affective evaluation toward the store had a significant total effect on approach-avoidance behavior.

2.2. Color, emotion and behavior in restaurant setting

Color is widely used as aesthetic stimuli in restaurant design due to its strong impact on visual attention, and customer perception and behavior. Various color attributes such as hue, color tone, saturation, value (brightness) and color harmony were examined for their effect on emotion and behavioral responses in a restaurant. For example, Söker (2009) investigated the classification of restaurants and found that warm colors received the impression of lower prices compared with cool colors according to consumers, and warm colors also received higher scores for feeling pleasant. Jacquier and Giboreau (2012) examined different colored atmospheres and their influence on emotion in the restaurant and highlighted that customers felt stressed, less excited and that it was noisy in a red and black atmosphere (warm tone). Wardono et al. (2012) demonstrated that different conditions produced different effects to the way customers perceived sociability, emotion and behavioral intention in social dining occasions, such as restaurants with monochromatic colors, dim lighting and plain décor was perceived by customers to be romantic dining. Othman and Goodarzirad (2013) argued that pleasure can drive behavioral intention in restaurants and that restaurant decoration and wall colors should exhibit the feeling of pleasure.

Previous research has attempted to establish the relationship between environment, emotion and behavior through the SOR model in which the physical environment was believed to influences behavior through emotional alteration. Lingkage were found in other service industries such as store (Turley and Milliman, 2000; Brengman, 2002), hotel (Countryman and Jang, 2006) and sport facilities (Wakefield and Blodgett, 1996) whereas only a limited number of studies investigated such relationship in restaurant settings. For example, Ryu and Jang (2008) used the method of structural equation modeling analysis and showed that facility aesthetics, ambience and layout of dining environment significantly affect the degree of customer pleasure, and pleasure was a significant determinant of behavioral intention. Jang and Namkung (2009) extended the SOR model by incorporating restaurant-specific stimuli and restaurant-specific measure of emotion. The results suggested that atmospherics and service function act as a facilitator for enhancing positive emotions. Liu and Jang (2009) suggested that in addition to the emotional effects, a cognitive effect (perceived value) should be considered. A unipolar discrete approach was proposed in addition to the SOR's (1974) bipolar pleasure-arousal scales. Lastly, Ryu and Han (2011) proposed a conceptual model that found facility aesthetics, lighting, and service staff were significant predictors, and concluded that first-time customer might expect a relatively higher quality of physical surroundings. Nevertheless, the influence of disconfirmation on emotion has not been discussed.

2.3. The relationships between atmospherics, emotions, and responses in restaurant context

Understanding the influence of physical environment on a customer's emotional response is crucial to the restaurant business since these responses affect the customer's retail decisions. Despite the fact that there have been many studies conducted on understanding the influence of the physical environment on emotion and retail decisions based on the Mehrabian − Russell's SOR model, a majority of the studies put an emphasis on examining the relationship between stimuli (physical environment) and organism (emotion), between stimuli (physical environment) and response (retail decision) or between organism (emotion) and response (retail decision) separately. In order to fully understand the influence of retail atmospherics, this study examines the relationship between stimuli, organism and response simultaneously. It is anticipated that the benefits of implementing this method are twofold: first, the examination of the complete SOR model could lead to a practical interior color selection that are based on theoretical descriptions of the retail decisions by tracing the reverse route from effect to cause; second, emotion and their sub-attributes could be examined individually and tested for their interaction effects. The experiment was conducted with participants to evaluate the restaurant scenarios with different color stimuli by using the PAD emotion adjective pairs and indicated their decision of entering the restaurant. The research framework based on the SOR model is shown in Fig. 1.

This study proposes a logistic regression analysis as the method to explore the complex linkage between emotional predictors and approach-avoidance behavior. This method had been used in predicting approach-avoidance behavior in previous studies (Chiang et al., 2006;

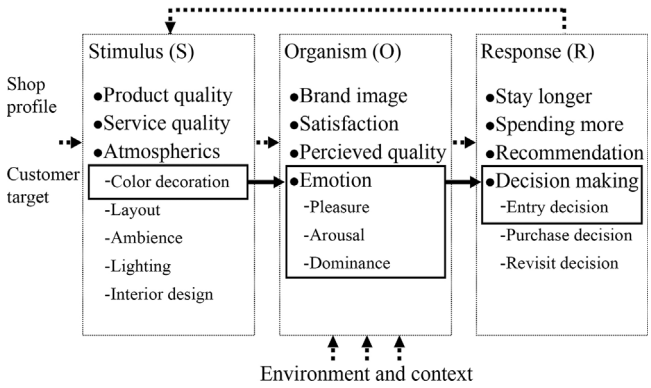

Fig. 1. The research framework based on the SOR model demonstrates linkage among the color stimuli, PAD emotion and approach-avoidance decision making.