

## RESEARCH ARTICLE

# Colour, emotion, and behavioral intentions in city hotel guestrooms

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**Abstract**

This study explores the effects of colours on people's emotional states and behavioral intentions in a real-world city hotel guestroom. For this study, blue, yellow, and gray were selected. According to literature, when it is desired to make a change on colour scheme in hotel rooms, the alteration should be applied to secondary colour while keeping the dominant colour constant. Thus, in this study, the alterations of colour scheme are only applied to bedspread and pillows fabrics. As results indicate, blue and yellow are associated with pleasure and arousal, whereas the gray colour evokes displeasure and no arousal. Yellow and blue are found to cause approach behavior in terms of customer loyalty, while the colour gray is found to cause avoidance behavior in city hotel guestrooms. There is a positive relationship between both pleasure and approach behavior and between arousal and approach behavior. The results can be useful for interior architects, designers, and hoteliers who emphasize touching guests' emotions and increasing approach behavior by creating favorable colour schemes. This study combines colour, emotion, and behavioral intentions in hospitality context which plays an essential role in filling gap in the literature about the effects of colour in a hospitality context.

**KEYWORDS**

behavioral intentions, colour scheme, emotion, guestrooms, hotels

## 1 | INTRODUCTION

A hotel's grand architecture, its employee's attitudes, or even another guest may trigger the customers' emotions. Also, there are other factors that may make the customer unhappy about the stay such as the uncleanliness of the facility, disorganizations in the checkout processes, or even the sloppy-looks of the staff members. As all of these examples showed, the interactions with hotel products and/or services<sup>1(p39)</sup> affect guests' emotions. Many of the previous studies point out that hotel guestrooms have an important effect on creating positive feelings for guests. Jusko<sup>2</sup> states guestrooms are far more influential than the lobby or restaurant in retaining customers and

affecting their emotions in different ways.<sup>3</sup> As Jones and Lockwood<sup>4</sup> stated, guestrooms are the areas in a hotel where guests spend most of their time during their whole stay. Hence, the decoration and design of the guestrooms have a more substantial effect on emotion and pleasantness of customers according to the rest of the hotel. For instance, Lee, Denizci Guillet, and Law<sup>5</sup> studied the effects of colour of hotel room on tourists' emotions and their results showed that a guestroom having a cool colour theme, especially green in dominant, is preferable for emotional wellness. A study conducted by Heung and Gu<sup>6</sup> showed the importance of atmospherics on customers' patronage behavior and return intention. They furtherly discussed that esthetics of the interior has a

strong influence on customers' behaviors. Thus, esthetically pleasing interiors affect customers' behavior and return intention where interior esthetics is closely linked with its colours. Colour, as one of the dominant esthetical dimension of an interior, is affecting behavior intention.<sup>7</sup> Also, consumers are more responsive to attractive atmospheres.<sup>8</sup> Therefore, colour is one of the important keys in creating attractive atmospheres. The importance of the physical attractiveness of an interior is also highlighted by a pioneering study conducted by Baker and Grewal.<sup>9</sup> According to their study, a physically attractive space has a "great influence" on the behavior intention of the customers more than other qualities such as price.

Thus, it can be aforementioned that, design, décor, and furniture of the guestrooms are the factors in obtaining satisfaction, evoking positive emotions and the main consideration for return patronage.<sup>7,8</sup> Since colour is one of the most effective visual elements in a guestroom, it deserves a special consideration and intense research. Also colour has an effect on human vision, which is the most dominant sense<sup>9</sup> since we are living in a visually oriented world in which the great amount of our perception rely on what we see.<sup>10</sup> Within the visual field, many colours are perceived together and if they are designed to produce a colour scheme, especially in a guestroom, it would be worth understanding its accent pieces' (bedspread and pillows) effects on customers' emotion. Thus, the current study is designed to understand the influence of colours on people's emotional states and behavioral intentions in a real-world city hotel guestroom located in Turkey.

Colours create potential emotions<sup>11</sup> and these emotions also affect behaviors.<sup>12,13</sup> According to the literature cool colours, such as blues, greens, and purples, which are short-wavelength, are rated as more pleasant and preferred more than long-wavelength colours (ie, warm hues such as reds, yellows, and oranges<sup>11,14-17</sup>). Emotionally warm colours, especially red, have been linked with elated mood state,<sup>16</sup> high arousal,<sup>18</sup> and a higher level of anxiety,<sup>11</sup> where cool colours have shown the opposite influences. Wexner's<sup>22</sup> study indicates that using a warm colour environment like red implies displeasure and high arousal, whereas the cool colour environment like blue implies pleasure and low arousal. Valdez and Mehrabian<sup>19</sup> support that warm colours like red and yellow are more arousing than cool colours like blue and green by testing the effects of colour on emotion with colour samples. In addition to these, achromatic colours like gray are considered as lacking emotion<sup>20,21</sup> and have intermediate values in terms of pleasantness.<sup>16</sup>

Besides a great amount of study, none of them could demonstrate consistent and clear colour influences. Such as, the previous studies found the colour red as the most

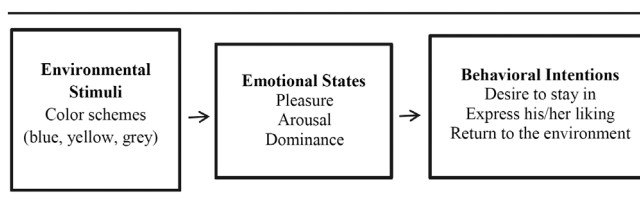
arousal colour, which causes avoidance behavior. In contrast to those findings, Kamaruzzaman and Zawawi<sup>25</sup> pointed out the colour blue as the most arousal colour. Avoidance behavior is also identified in several studies with different colours other than red. Blue,<sup>23-25</sup> gray, and beige,<sup>26</sup> which were all examined in hospital areas, have negative effects on people in terms of concentration and attention.

## 1.1 | Mehrabian-Russel model

According to Mehrabian and Russel (M-R model)<sup>30</sup> model, environmental stimuli from the physical environment have a role in creating an emotional state, which in turn would stimulate people's behavioral intentions. As this model enables examining people's emotional responses to the physical environments, the current study uses it as a framework for investigating the effects of different colour schemes on customers' emotion in city hotel guestrooms. The framework of this study is separated into three parts: "environmental stimuli," "emotional states," and "behavioral intentions" (see Figure 1).

Environmental stimuli, such as day and artificial lighting, colour, scent, noise, and so on, stimulate people. From this knowledge, warm (yellow), cool (blue), and achromatic (gray) colour schemes are selected as the environmental stimuli for this study. Those environmental stimuli are hypothesized to stimulate people's emotional responses, specifically grouped as "pleasure," "arousal," and "dominance." Pleasure states show the degree of happiness, being pleased, good, or joyful in a given physical environment. Arousal shows how a person feels active, relaxed, and/or stimulated. The feeling of important, influential, or in control<sup>27</sup> is describing dominance. However, the dominance aspect has not been identified as an emotional response<sup>28,29</sup> by some of the studies since according to Russell,<sup>33</sup> dominance is more related with cognitive response and hence does not have an important effect on emotion and behavior. Nonetheless, this study preserves Mehrabian and Russell's<sup>30</sup> original tridimensional model and also tests to the role of the dominance dimension in city hotel rooms.

Behavioral intentions are associated with "approach-avoidance" behavior in the M-R model. Approach behavior is identified as "staying longer, interacting with other people in a physical environment or coming back to it and exploring the environment," and avoidance behavior is opposed of approach behavior.<sup>30</sup> The current study tried to understand the behavioral intentions of people by asking questions about desiring to stay in the environment, returning to that environment, and collecting the



**FIGURE 1** Conceptual framework of the study

ratings for the liking about the environment with the hypotheses presented below:

**H1.** *There is a significant difference between the effects of different colour schemes on pleasantness in city hotel guestrooms.*

**H1a.** *Blue evokes pleasantness in city hotel guestrooms.*

**H1b.** *Yellow evokes displeasure in city hotel guestrooms.*

**H1c.** *Gray has a neutral effect on people's pleasure state in city hotel guestrooms.*

**H2.** *There is a significant difference between the effects of different colour schemes on arousal state in city hotel guestrooms.*

**H2a.** *Blue evokes un-arousal in city hotel guestrooms.*

**H2b.** *Yellow evokes arousal in city hotel guestrooms.*

**H2c.** *Gray has a neutral effect on people's arousal state in city hotel guestrooms.*

**H3.** *There is a significant difference between the effects of different colour schemes on behavioral intentions in city hotel guestrooms.*

**H3a.** *Blue is associated with approach behavior in city hotel guestrooms.*

**H3b.** *Yellow is associated with avoidance behavior in city hotel guestrooms.*

**H3c.** *Gray is associated with neither approach nor avoidance behavior in city hotel guestrooms.*

**H4a.** *There is a positive relationship between pleasure and approach behavior in city hotel guestrooms.*

**H4b.** *There is a positive relationship between arousal and avoidance behavior in city hotel guestrooms.*

## 2 | METHOD

### 2.1 | Sample group

By using snowball sampling method, 273 adults aged between 18 and 65 contributed to the study's experiment, which was conducted at Marina Sentido Suits in Kuşadası, Turkey. All participants self-reported their eye deficiencies if there are any and the ones who are colour blind or had eye deficiencies were excluded from the study. Also, the participants who had a colour education or worked as a professional in the design field were not included in the study. Even though, the study specifically did not have a focus on gender, education level, or regularity of hotel visits in a year, demographic questions' results were also collected for exposing the participants' characteristics.

### 2.2 | The instrument of the experiment

A self-administrated ready-made questionnaire<sup>34</sup> was used in the experiment. The first part of the questionnaire has questions about the demographic information. The second part asked hotel-room setting related questions to measure the emotional states (pleasure, arousal, and dominance [PAD]) based on Mehrabian and Russell's PAD model. The related questions were adapted from preceding studies<sup>31</sup> in which the participants assessed their emotional states (pleasure, arousal, and dominance) regarding the colour scheme of the room.

The questionnaire had 3 scales (pleasure, arousal, and dominance) and 18 sets of bipolar adjective pairs

(each scale has 6 adjective pairs). The pleasure scale consists of “bored-relaxed, despairing- hopeful, unhappy-happy, melancholic-contented, annoyed-pleased and unsatisfied-satisfied” whereas the arousal scale includes “calm-excited, unaroused-aroused, dull-jittery, relaxed-stimulated, sleepy-wide awake and sluggish-frenzied.” The dominance scale has also six adjective pairs including “submissive-dominant, cared for-in control, guided-autonomous, influenced-influential, controlled-controlling and awed-important.” Adjectives that are positively weighted (+2 means extremely positive) are presented on the right side of each pair whereas the negatively weighted adjectives (−2 means extremely negative) are shown on the left side and in the middle there is 0 which refers to neutral.

The third part includes the measures based on Mehrabian and Russell's PAD model for examining the behavioral intentions (approach and avoidance) according to a hotel room setting. The related measuring is adapted from previous studies<sup>12,32</sup> and to evaluate, participants rated the guestrooms with a 5-point Likert scale about the following three statements: “I would like to come back to this hotel in the future,” “I would recommend this hotel guestroom to my friends,” and “I am willing to stay longer than I planned at this hotel guestroom.” In the scale, “extremely disagree” and “disagree” scales indicate avoidance behavior, whereas “agree” and “extremely agree” scales show approach behavior in the hotel room.

### 2.3 | Specifying the experiment hotel guestroom, colours, and colour alterations

Deciding on a hotel room as the experimental setting was an important step of the study since the main aim is to understand the emotional and behavioral responses given to an environmental stimulus; colour in hotel guestrooms. To achieve this, some important criteria were set. The first one is the location of the hotel; the second criterion is the population of the hotel. The third one is the characteristics of the city hotel guestroom which are the simplistic furniture of the hotel guestroom; and the whole colour scheme of the room. After searching several hotels, an executive room was selected as the experiment room from a four-star city hotel called Sentido Marina Suits, which is located in Kuşadası, Turkey. This room fulfills all the criteria mentioned above. All rooms of the selected hotel have the features of a city hotel with a simple design including a double bed and seating areas. The furniture of the room is in a neutral colour scheme which is considered as a lack of hue. The room is dominated by achromatic colour scheme. Only the pillow sheets and bedspread have different colours. Thus, the hotel met the expectations related to the set criteria of the experimental study.

Identifying the colours and colour alterations' placement within the room was also derived from: (1) the previous works; (2) research on applied design projects; (3) colour alterations' placement; and (4) selecting the most appropriate colour from fabric swatches. In the first step, formerly conducted colour studies were examined. It is understood that red as a warm colour and blue as a cool colour were the most preferred colours in the studies to show opposite physiological, psychological, and emotional effects.<sup>15,16,33-39</sup> In the second step, approximately 250 photos of city hotel rooms from various countries using the “booking.com” were randomly analyzed to detect the most frequently used colours in various city hotel rooms.<sup>40</sup> The mostly used colours in hotel rooms are the tones of blue and turquoise as cool colours and brown, orange, red, and yellow as warm colours. According to examinations, blue was chosen as a cool colour. Also yellow which is located directly opposite to blue in the Natural Colour System (NCS) was chosen as a warm colour.

The third phase was conducted to decide on the colour alterations locations within the city hotel guestroom. According to the previous works, a balance in the colour schemes of an interior should be obtained using some certain proportions. For instance, 60% of the dominant colour should be the wall surfaces' colour, 30% can be the secondary colour as upholstery's colour, and 10% can be the accent colour as the accessory's colour in the room.<sup>41-44</sup> Additionally during an alteration on colour scheme of a hotel room, the changes should be applied as the secondary colour while keeping the most dominant colour constant.<sup>41,42</sup> Thus, in this study, all the colour scheme alterations are applied to the fabric of the bedspread and pillow sheets.

For the last phase, the yellow and blue colour fabrics, which were collected from various stores, were compared under 6500 K correlated colour temperature. After examining each fabric under 6500 K which is known as daylight lamp that shows all colours in the most accurate way,<sup>45</sup> “S3040-B” blue fabric, “S3040-Y10R” yellow fabric, and “S3502-Y” gray were selected for this experiment. The fabric of these three colours is selected based on the NCS Atlas as corresponding colours concerning whiteness, blackness, and lightness to ensure these values are fixed (see Figure 2). Thus, the hue is the only variable in this study to test the related hypotheses. Also being aware of the difficulty of examining the effect of colour solely on behavior intention of customers, participants were asked evaluate the influence of colour while leaving aside their previous experiences about the hotels they visited formerly during the experiment. Similarly, the study's methodology designed accordingly by keeping the design, décor, and furniture of the guestroom same to eliminate the other factors related to satisfaction, evoking positive emotions and return patronage.



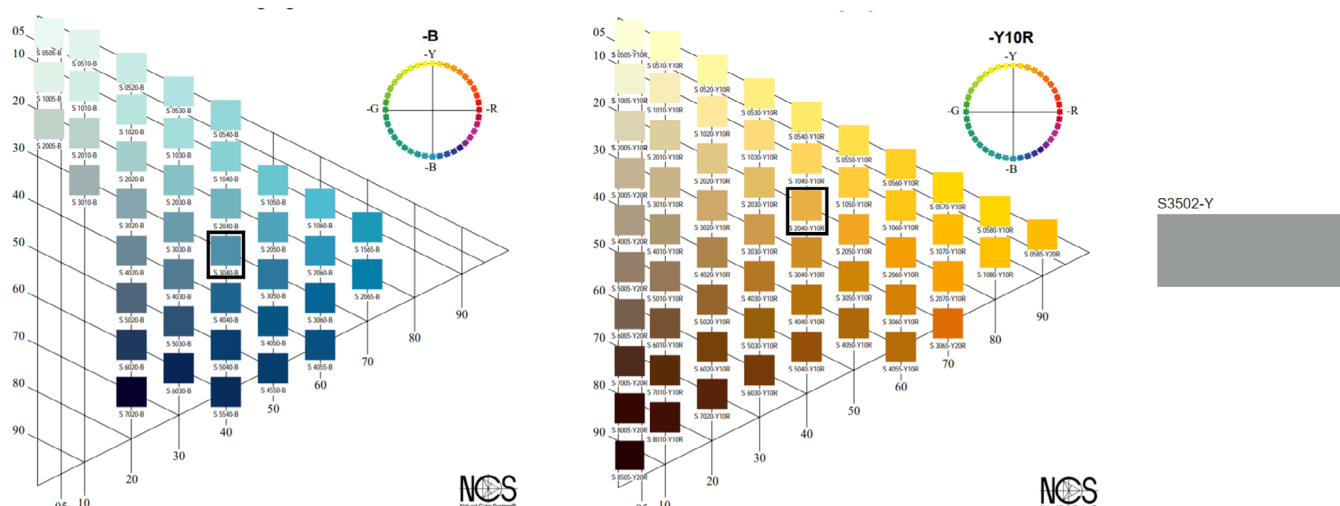


FIGURE 2 The blue, yellow, and gray colour schemes selected based on the NCS Atlas



FIGURE 3 The blue, yellow, and gray colour schemes in the experiment hotel room

## 2.4 | Experimental setting

The experimental setting of the study is a hotel room of 41 m<sup>2</sup> and ceiling height of 2.80 m. Its walls are painted beige, its ceiling is white, and the floor is covered with gray-beige ceramic tiles. The room has a modern and a simple set up equipped with a double bed and seating areas having a neutral colour scheme. The daylight in the guestroom was totally blocked with thick black paperboards to avoid the effects of daylighting on the perception of colour scheme. Thus, the only lighting source in the guestroom was the existing artificial lighting, which was under control of the experimenter. The existing illuminance level and colour temperature of the lighting were fixed at approximately 250 lx and 2700 K in the guestroom. As previously mentioned, colour was applied on the pillows and bedspread using the three colour schemes of blue, yellow, and gray (see Figure 3).

## 3 | RESULTS

Two-hundred and seventy-three ( $n = 273$ ) subjects (162 female, 111 male) participated in the

experiment. Ninety-one participants answered the questionnaire for the blue colour scheme, 92 participants for the yellow colour scheme, and 90 participants for the gray colour scheme. All the participants were randomly distributed to colour schemes. As a first step of the data analysis, reliabilities of each item were checked. Even though some items in the dominance dimension of the blue colour scheme and yellow colour scheme were found reliable ( $0.6 \leq \alpha < 0.7$ ), all items in dominance dimension for the gray colour scheme could not found reliable because of their poor ( $0.5 \leq \alpha < 0.6$ ) and unacceptable alpha values.<sup>46</sup> For that reason, when obtaining reliability, the dominance part of the emotional states was excluded from the findings. Also, normality tests (Kolmogorov-Smirnov and Shapiro-Wilk Normality test) were conducted to determine if the data set was normally distributed (see Table 1). As the results showed, values concerning pleasure, arousal, emotional states and behavioral intentions were not normally distributed in the colour schemes ( $P < .05$ ). Therefore, a nonparametric test was used to analyze this study's data.

**TABLE 1** Kolmogorov-Smirnov and Shapiro-Wilk Normality test (table drawn by the authors)

		Tests of Normality					
		Kolmogorov-Smirnov <sup>a</sup>			Shapiro-Wilk		
	Group	Statistic	df	Sig.	Statistic	df	Sig.
Pleasure	Blue	0.148	91	0.000	0.918	91	0.000
	Yellow	0.230	92	0.000	0.856	92	0.000
	Gray	0.151	90	0.000	0.938	90	0.000
Arousal	Blue	0.147	91	0.000	0.959	91	0.006
	Yellow	0.081	92	0.174	0.983	92	0.266
	Gray	0.112	90	0.007	0.956	90	0.004
Emotional states	Blue	0.089	91	0.069	0.968	91	0.023
	Yellow	0.109	92	0.009	0.941	92	0.000
	Gray	0.139	90	0.000	0.958	90	0.005
Behavioral intention	Blue	0.169	91	0.000	0.872	91	0.000
	Yellow	0.218	92	0.000	0.816	92	0.000
	Gray	0.153	90	0.000	0.875	90	0.000

<sup>a</sup>Lilliefors significance correction.

### 3.1 | The effect of colours on emotional states

#### 3.1.1 | Pleasure

Kruskal-Wallis  $H$  test conducted for evaluating the effects of different colour schemes on people's emotions. According to the test results, a significant difference between the pleasure state according to colour schemes ( $H(2) = 51.302$ ,  $P = .0001$ ) were found. Also, Mann-Whitney  $U$  tests were used to find out the differences caused by each colour. By applying the Bonferroni correction,<sup>47</sup> all the significance levels for each colour scheme were accepted as "0.0167." The test results indicated that a significant difference between the effect of blue vs yellow on people's pleasure state ( $U = 4052.5$ ;  $P = .708$ ;  $P > .0167$ ; two-tailed) were not detected. Conversely, a significant difference between blue and gray colour schemes ( $U = 1954$ ;  $P = .0001$ ;  $P < .0167$ ; two-tailed) and yellow and gray colour schemes ( $U = 1903$ ;  $P = .0001$ ;  $P < .0167$ ; two-tailed) on people's pleasure state in city hotel guestrooms were detected. So it can be concluded that, there was no a difference between the effects of cool and warm colour schemes on pleasure state. However, a significant difference between the effect of achromatic and chromatic colours were found (see Table 2).

To detect the effect of colour schemes on pleasure state, all the mean values for each colour schemes were compared. The mean pleasure state for blue was found 0.95 and 1.00 for yellow. Both values were above the mid-point which indicate a positive effect on pleasure. For gray, the mean pleasure state was found in the negative

range;  $-0.17$  which implies the colour has a negative impact on pleasure and evokes displeasure. As the results showed blue and yellow are found pleasant, whereas the gray scheme is rated as unpleasant in the city hotel guestroom (see Table 2).

#### 3.1.2 | Arousal

Kruskal-Wallis  $H$  test results ( $H(2) = 30.027$ ,  $P = .0001$ ) concluded that there is a statistically significant difference between the arousal states according to colour schemes. As it was used in the pleasure, Mann-Whitney  $U$  tests were conducted again for arousal. A significant difference between the effect of the blue vs the yellow colour scheme could not be found ( $U = 3306$ ;  $P = .018$ ;  $P > .0167$ ; two-tailed). However, between the blue and gray colour schemes ( $U = 3001.5$ ;  $P = .002$ ;  $P < .0167$ ; two-tailed) and between the yellow and gray colour schemes ( $U = 2220.5$ ;  $P = .001$ ;  $P < .0167$ ; two-tailed) significant differences were detected (see Table 2). Therefore, between the effects of chromatic and achromatic colour schemes on arousal state can be highlighted according to the results.

The mean value of arousal state for yellow was found 0.25 which is in the positive range. The mean of arousal states for blue:  $-0.01$  and gray:  $-0.46$  were in the negative range. All those findings showed that yellow is rated as arousing, gray is rated as un-arousing in city hotel guestrooms. It is important to indicate that the mean value of blue is close to the mid-point suggesting neither an aroused nor unaroused state for this cool colour scheme.

**TABLE 2** Summary of the findings of the study (table drawn by the authors)

Hypothesis	Findings of the study	Reject hypothesis	Do not reject hypothesis	References with in-line	References with not in-line
H1a	Blue evokes pleasantness		+	Valdez and Mehrabian <sup>19</sup> ; Clarke and Costall <sup>23</sup> ; Kaya and Epps <sup>24</sup> ; Manav <sup>40</sup> ; Bellizzi et al <sup>51</sup> ; Hemphill <sup>52</sup> ; Sharpe <sup>53</sup> ; Yıldırım et al <sup>54</sup>	
H1b	Yellow evokes pleasantness	+			Jacobs and Suess <sup>14</sup> ; Ainsworth et al <sup>17</sup> ; Valdez and Mehrabian <sup>19</sup> ; Bellizzi et al <sup>51</sup> ; Kwallek et al <sup>55</sup>
H1c	Gray evokes displeasure	+			Valdez and Mehrabian <sup>19</sup> ; Clarke and Costall <sup>23</sup> ; Kaya and Epps <sup>24</sup> ; Hemphill <sup>52</sup>
H2a	Blue is found as too close to either arousal or no arousal	+		Jacobs and Suess <sup>14</sup> ; Ainsworth et al <sup>17</sup> ; Valdez and Mehrabian <sup>19</sup> ; Cahoon <sup>21</sup> ; Yıldırım et al <sup>54</sup> ; Kwallek et al <sup>55</sup>	
H2b	Yellow evokes arousal		+	Suess <sup>14</sup> ; Ainsworth et al <sup>17</sup> ; Valdez and Mehrabian <sup>19</sup> ; Cahoon <sup>21</sup> ; Yıldırım et al <sup>54</sup> ; Jacobs and Kwallek et al <sup>55</sup>	
H2c	Gray evokes unarousal	+			Valdez and Mehrabian <sup>19</sup> ; Clarke and Costall <sup>23</sup> ; Kaya and Epps <sup>24</sup>
H3a	Blue causes approach behavior		+	Bellizzi and Hite <sup>36</sup> ; Bellizzi et al <sup>51</sup> ; Babin et al <sup>69</sup> ; Barlı et al <sup>70</sup>	Özmen <sup>72</sup>
H3b	Yellow causes approach behavior	+		Bellizzi and Hite <sup>36</sup>	Bellizzi et al <sup>51</sup> ; Barlı et al <sup>70</sup> ; Özmen <sup>72</sup>
H3c	Gray causes avoidance behavior	+			Özmen <sup>72</sup>
H4a	There is a positive relationship between pleasure and approach behavior		+	Bitner <sup>15</sup> ; Donovan and Rossiter <sup>56</sup> ; Baker et al <sup>57</sup> ; Spies et al <sup>58</sup> ; Sherman et al <sup>59</sup> ; Yoo et al <sup>60</sup> ; Wirtz and Bateson <sup>64</sup> ; Obermiller and Bitner <sup>71</sup> ; Yalch and Spangenberg <sup>73</sup>	Baker et al <sup>57</sup>
H4b	There is a positive relationship between yellow and approach behavior	+			Bellizzi and Hite <sup>36</sup> ; Bellizzi et al <sup>51</sup> ; Barlı et al <sup>70</sup>

### 3.2 | The effect of colours on behavioral intentions

The result of Kruskal-Wallis  $H$  test indicated the significant difference between behavioral intentions according

to colour schemes ( $H(2) = 59.019$ ,  $P = .0001$ ). Mann-Whitney  $U$  tests results did not indicate a significant difference between the effect of blue vs yellow on behavioral intentions of people ( $U = 3463.5$ ;  $P = .041$ ;  $P > .0167$ ; two-tailed). However, a significant difference between

blue and gray ( $U = 2081.50$ ;  $P = .0001$ ;  $P < .0167$ ; two-tailed) and yellow and gray ( $U = 1605.5$ ;  $P = .0001$ ;  $P < .0167$ ; two-tailed) on people's behavioral intentions in city hotel rooms were found. Thus, a significant difference between the effects of warm and cool colour schemes was not detected, but a difference between the achromatic and chromatic colour schemes was found.

In order to obtain detailed knowledge about the role of colour in behavioral intentions, the all the mean values for each colour were compared. The behavioral intention mean values for blue: 3.74 and yellow: 4.08 were found above the mid-point of the scale in the positive range, which means that the colour has a positive effect on behavioral intention and evokes the approach behavior. On contrary, the mean of behavioral intentions for gray was found in the negative range ( $m = 2.48$ ) showing that colour has a negative effect on behavioral intentions and evokes avoidance behavior.

### 3.3 | The effect of emotional states on behavioral intentions

The correlation analysis results showed a positive moderate relationship between pleasure and behavioral intentions for blue colour scheme ( $r = 0.637$ ,  $P = .0001$ , two-tailed), and among pleasure and behavioral intentions for the yellow colour scheme ( $r = 0.668$ ,  $P = .0001$ , two-tailed). The positive and a high relationship between pleasure and behavioral intentions was found for gray colour scheme ( $r = 0.705$ ,  $P = .0001$ , two-tailed). Where pleasure increased, the behavioral intentions also significantly increased. Therefore, it is concluded that pleasure has a positive effect on behavioral intentions under all colour schemes. A positive but a weak relationship between arousal and behavioral intentions for blue ( $r = 0.328$ ,  $P = .002$ , two-tailed) was found. A positive and moderate relationship was found between arousal and behavioral intentions under the yellow colour scheme ( $r = 0.515$ ,  $P = .0001$ , two-tailed), and under the gray colour scheme ( $r = 0.540$ ,  $P = .0001$ , two-tailed). While arousal increased, the behavioral intentions also increased, which means arousal has a positive influence on behavioral intentions in city hotel rooms.

### 3.4 | Discussion

The findings of the current study have some similarities and differences with the existing literature. As it was previously mentioned, not too much attention was given to the dominance scale since Russell and Pratt<sup>28</sup> stated that only pleasure and arousal are enough in indicating

emotional responses of people. In contrary to their statement, this study retains Mehrabian and Russell's<sup>30</sup> original tridimensional model and hypothesized that dominance scale is affective in customers' emotional states and behavioral intentions in city hotel guestrooms. But, the reliability values of some dominance items for all colours were poor and unacceptable which ended up by eliminating the dominance scale from the findings of this study.

Different colour schemes can change the pleasure states of customers (see Table 2). It was hypothesized that "blue evokes pleasantness; yellow evokes displeasure; whereas gray has a neutral effect on people's pleasure." The results showed a significant difference between the effect of colour schemes and gray; however, a significant difference between blue and yellow could not be found. Both schemes are found pleasant, and gray found displeasing. So it can be concluded as if the colour is chromatic, pleasantness is revealed, on the other hand, if the colour is achromatic, it has a negative effect on pleasure and evokes displeasure. Thus, as the results showed, yellow and blue can be used in the designs of the city hotel guestrooms for creating pleasantness. Blue is generally associated with pleasure in many circumstances.<sup>16,20,21,37,48-51</sup> On the other hand, yellow was found equally as pleasant as blue in this study. However, yellow is usually associated with lower levels of pleasantness in most of the literature.<sup>11,14,16,48,52</sup> Also, previous studies associated gray with the lack of any emotion including pleasantness.<sup>16,20,21,49</sup> However, gray was found to be unpleasant instead neutral or unemotional in this study.

It was hypothesized that "blue evokes no arousal; yellow evokes arousal, whereas gray has a neutral effect on people's arousal state." The findings show the difference between the effect of colour vs gray, and no significant difference between the effect of blue and yellow colour schemes on people's arousal state. Thus, arousal state is influenced by colour. However, as the related mean results indicated "yellow reveals arousal, whereas blue was too close to either arousal or no arousal." But it should be noted that, the value is too close to mid-point which does not mean an arousal state but can indicate a neither aroused nor an unaroused state. Gray colour scheme reveals "no arousal" in city hotel guestrooms. Hence, warm colours can be used for affecting arousal state of emotion and cool colours may be preferred to create low arousal in guestrooms. Also, those findings can be supported by the previous research. Warm colours are linked with arousal whereas cool colours have a tendency to reveal lower levels of arousal.<sup>11,14,16,18,51,52</sup>

H3a, H3b, and H3c hypothesize that "blue causes approach behavior; yellow causes avoidance behavior,



whereas gray has a neutral effect on people's behavioral intentions in city hotel guestrooms" (see Table 2). Opposing to these hypotheses, the results demonstrate no significant difference between blue and yellow on behavioral intentions. Though, a difference between blue and gray and yellow and gray on behavioral intentions was found. Yellow and blue cause approach behavior, while gray reveals avoidance behavior. Thus, it can be stated that behavioral intentions are based on the effect of colour; if it is chromatic, approach intentions are revealed. It means that "if people are exposed to chromatic colours in a city hotel guestroom, they desire to stay in it, recommend it to their friends and return to this guestroom in the future." On the contrary, "if the room has an achromatic colour scheme, people tend to be in avoidance behavior. People would like to leave from the guestroom, verbally express their disliking for it and do not want to return to this environment." So, to enhance approach behavior, chromatic colours should be applied in the hotel guestrooms.

The last hypotheses (H4a and H4b) are depending on "the relationship between the emotional states (pleasure, arousal) and behavioral intentions (approach or avoidance behavior) in city hotel guestrooms" (see Table 2). Pleasurable environments enhance people's approach behavior in city hotel guestrooms for each colour scheme. For instance, the results indicate there is a positive, but a weak association between arousal and behavioral intentions under the blue colour scheme. A positive moderate association is found between pleasure and behavioral intentions under the yellow colour scheme and under the gray colour scheme. It indicates that while the arousal is increasing, the approach behavior is increasing as well. As a result, using yellow and blue colours have a positive effect on people's emotional states in "pleasure and arousal," which cause approach behavior as the previous studies indicated, whereas gray evokes "displeasure and no arousal." The results of the current study shares some similarities with the works,<sup>12,53-61</sup> which concluded that "pleasant environments provide customers with a positive effect on approach behavior."<sup>62,63</sup> However, some of the previous colour studies mention that warm colours cause arousal and increase avoidance behavior.<sup>33,48,64</sup> Among all the contradictions, it can be briefly said that arousal state is evaluated as a negative emotion, which results in avoidance behavior by some of the studies and as the results of this study demonstrate, in guestrooms arousal is not comprehended as a negative emotion. Thus, it can be assumed that when the emotional state increases which can be either pleasure or arousal in a hotel guestroom, approach behavior is revealed. Also it should be noted that approach and avoidance behaviors do not need to be all-or-none responses but could vary in

degrees of acceptance or rejection.<sup>65(p13)</sup> In other words, approach behavior can be described as desiring to stay in that specific environment, expressing his/her liking for that environment and returning to that environment, are known as loyalty intention in marketing and hospitality studies.<sup>66-68</sup>

## 4 | CONCLUSION

### 4.1 | Limitations

The study is important in terms of the use of real scale and can be used as a recommendation and for interior architects. However, the hotel's location and its type can be a limitation for this research. The study might be strengthened by examining wider hotel and room types throughout the country and/or the study can be repeated in different countries. Because according to location and culture, colour influence and use can change. Another limitation of this research can be about the colour range; blue was tested as a cool colour, yellow was tested as a warm, and gray was tested as an achromatic colour, which might diminish the strength of the results. Thus, the study did not have enough colour range for generalizing its findings for cool, warm and achromatic colours. So, having more colours would be better to make stronger generalization for all colours. As another limitation of this study, the past loyalty to the hotel was excluded from the factors that might influence people's emotion and behavioral intentions. Thus, further studies can focus on regularity of hotel visits in a year and revisit intention.

### 4.2 | Concluding summary

In an executive hotel guestroom, the effects of colours on peoples' emotional states such as pleasure, arousal and behavioral intentions; approach or avoidance behavior are explored. The statistical results indicate that warm and cool colours are found as pleasant, whereas achromatic colour, gray induces displeasure. Also it is found that warm colour scheme reveals arousal, whereas blue is found as either arousal or no arousal. Achromatic colour scheme reveals no arousal in city hotel guestrooms. Warm and cool colours are found to cause approach behavior, while achromatic colour is found to reveal avoidance behavior. Besides, a positive relationship between pleasure and approach behavior and between arousal and approach behavior are found. The promising results of this study have some similarities and differences with the previous studies in the literature. However, none of the previous studies examined colour,

emotion, and behavioral intentions together in hospitality context. Thus, the results of the study can be an important research both in colour studies and in the hospitality field by filling the gap in the literature.

As a conclusion, interior architects, designers, and hoteliers who are seeking to increase guests' emotions and approach behavior by creating favorable colour schemes can use this study's findings. It is also noteworthy to be aware of the effect of colours on peoples' emotional states and behavioral intentions in rooms since colour is a crucial aspect in creating atmosphere. Also, the study's findings can be used as a guide by the researchers who are working on colour, emotion, and ambience in hospitality context.


## ACKNOWLEDGMENT

This research was conducted as a part of master thesis at Bilkent University of the first author.

## DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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**How to cite this article:** Yar Bilal S, Aslanoğlu R, Olguntürk N. Colour, emotion, and behavioral intentions in city hotel guestrooms. *Color Res Appl.* 2022;47(3):771–782. doi:10.1002/col.22746