Images’ features and Airbnb listing price: the mediation effect of visual aesthetic perception

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Abstract

Purpose – This study aims to explore image-based visual price determinants (image features and visual aesthetic perception) and how image features affect Airbnb listing price on a sharing accommodation platform.

Design/methodology/approach – The study uses an SOR model and a hedonic price model to examine the connections between the characteristics of image features, visual aesthetic perception and Airbnb listing prices. The model is then examined by an econometric model using data from Insideairbnb.com.

Findings – Empirical results revealed that image features have a significant positive effect on visual aesthetic perception, visual aesthetic perception has a significant positive effect on Airbnb listing price and visual aesthetic perception has a significant mediating effect between image features and Airbnb listing price.

Originality/value – This study contributes to the relationship and effect mechanism among image features, visual aesthetic perception and Airbnb listing price and has some implications for both property operators and the sharing accommodation platform.

Keywords Sharing accommodation, Airbnb, Hedonic pricing model, Visual aesthetic perception, Image features

Paper type Research paper

Resumen

Objetivo: Este estudio explora los determinantes visuales del precio basados en las imágenes (características de las imágenes y percepción estética visual) y cómo afectan las características de las imágenes al precio de los anuncios de Airbnb en una plataforma de alojamiento compartido.
Diseño/metodología/enfoque: El estudio emplea un modelo SOR y un modelo de precios hedónicos para examinar las conexiones entre las características de los rasgos de la imagen, la percepción estética visual y los precios de Airbnb. A continuación, se examina el modelo mediante un modelo econométrico utilizando datos de InsideAirbnb.com.

Resultados: Los resultados empíricos revelan que 1) las características de la imagen tienen un efecto positivo significativo sobre la percepción estética visual, 2) la percepción estética visual tiene un efecto positivo significativo sobre el precio de los anuncios de Airbnb, y 3) la percepción estética visual tiene un efecto mediador significativo entre las características de la imagen y el precio de los anuncios de Airbnb.

Originalidad/valor: Este estudio contribuye al mecanismo de relación y efecto entre las características de la imagen, la percepción estética visual y el precio del anuncio de Airbnb, y tiene algunas implicaciones tanto para los operadores inmobiliarios como para la plataforma de alojamiento compartido.

Palabras clave: Alojamiento compartido, Airbnb, Modelo de precios hedónicos, Percepción estética visual, Características de la imagen

Tipo de papel: Trabajo de investigación

1. Introduction

Airbnb, a brand in the sharing accommodation industry, is gaining increasing consumer attention (La et al., 2022). It offers a range of experiences and pricing options, which are crucial for consumer decision-making and the overall success of the industry (Zhao et al., 2023). While Chen and Xie (2017) used the hedonic price model to examine the relationship between property attributes and pricing, previous research has predominantly focused on text-based characteristics (Wang and Nicolau, 2017), overlooking image-based factors that influence sharing accommodation prices. As a result, there has been limited investigation into the impact of image-based product characteristics on pricing.

The study of image-based product features has gradually attracted academic interest in the service marketing literature. Images were also given as visual information to reduce quality uncertainty and convince consumers about the product quality (Chi et al., 2021). Visual aesthetic perception plays a crucial role in forming users’ initial perceptions of credibility (Zhang et al., 2016a). Existing literature suggests that the link between visual aesthetic perception and consumers’ willingness has been recognized (Hou and Pan, 2023); however, this connection remains insufficiently explored within the context of shared accommodation. The dynamic nature of sharing accommodation (Chi et al., 2021), and the ongoing evolution of image technology (Ma et al., 2023) has resulted in limited investigation and analysis of this relationship. Hence, visual aesthetic perception is a central concept and one of the underlying factors influencing consumers’ willingness to pay.

Recent advancements in information technology and the widespread popularity of online shopping have had a significant influence on consumer decision-making. Visual content displayed on online platforms plays a crucial role in providing reliable information to consumers, particularly in the context of travel planning (Jin et al., 2022). According to the Stimulus-Organism-Response (SOR) theory, the evaluation of image attributes directly influences behavioral intentions (Yadav et al., 2022). Image features that encompass cognitive, normative and affective dimensions have a notable impact on consumer behavior (Zhang et al., 2021). However, the intermediary process underlying this relationship remains largely unexplored. While it has been established that image attributes can stimulate intentions (Chi et al., 2021), their direct effects may overlook potential mediating variables. The connection between image features, willingness to pay and the mediating role of visual aesthetic perception has yet to receive adequate attention in research. Previous studies have examined the interaction between image attributes and willingness to pay but have not delved into specific mediating factors.

Mediating variables can alter the magnitude and direction of the relationship between image attribute stimuli and consumer willingness to pay. The existing literature on the
impact of image attributes on consumer willingness to pay is not exhaustive, highlighting the necessity of this study. The aim of this study is to address the research gap by investigating specific mediating paths. Drawing on SOR theory and the hedonic price model, this study examines the mediating role of visual aesthetics in the relationship between image attributes and sharing accommodation prices. The findings of this study offer travel marketers an opportunity to enhance the relationship between image features and consumer willingness to pay by leveraging positive visual aesthetic perception.

2. Literature review and hypothesis development

2.1 Pricing in sharing accommodation markets

In the sharing accommodation market, pricing is important (Chen and Xie, 2017). Wang and Nicolau (2017) stressed the importance of pricing determinants in developing pricing strategies in the sharing accommodation market and emphasized that pricing determinants play an important role in improving profits and business for stakeholders. Kienzler and Kowalkowski (2017) summarized pricing determinant research and concluded that pricing research is mainly focused on customer demand. The characteristics theory, which assumes that an implicit market exists for the characteristics of a certain product and each characteristic is priced to reflect consumers’ willingness to pay, is the basis of consumers’ product valuation and consumers’ demand (Chen and Xie, 2017). The hedonic pricing model uses multiple regression analysis to estimate the effect of characteristics that most influence the price of a heterogeneous product (Zhao et al., 2023). In the sharing accommodation, the hedonic pricing model has been used to identify the characteristics of Airbnb properties that affect prices (Chen and Xie, 2017).

2.2 Consumers’ decision-making based on image

The SOR model offers a framework for understanding consumers’ decision-making processes (Zhang and Benyoucef, 2016). This model suggests that environmental cues play a pivotal role in stimulating individuals, thus influencing their subsequent behavioral responses. These responses can either be in the form of approach or avoidance behaviors, as postulated by (Harmon-Jones, 2003). The SOR model highlights that such behaviors stem from individuals’ internal evaluations of various environmental cues.

Moreover, the approach-avoidance theory contributes to elucidating the relationship between images and consumers’ decision-making (Harmon-Jones, 2003). This theory explains that consumers tend to approach environments that elicit positive perceptions and experiences, such as happiness and aesthetic satisfaction. Correspondingly, individuals respond positively to such circumstances. Conversely, consumers also tend to avoid environments that are perceived as dull or capable of causing unhappiness.

The applicability of this framework is not confined to traditional consumer behavior research but extends to the realm of online consumer behavior, as observed by Zhu et al. (2022). The SOR framework convincingly argues that image features serve as stimuli that activate individuals’ perceptions. The organism component denotes the cognitive systems that come into play after the introduction of a stimulus, eventually shaping the consumer response. This response represents the final decision formulated through cognitive and emotional processes and encompasses both approach and avoidance behaviors.

Consequently, it is reasonable to infer that visual aesthetic perception, including factors like aesthetics and facilities, significantly affects consumers’ decision-making process. Considering this premise, it is plausible to assert that price-conscious consumers’ decision-making behavior when booking Airbnb accommodations is heavily influenced by their visual aesthetic perception. The SOR model provides a valuable lens through which this relationship can be explored and understood more comprehensively.
2.3 Image features hypothesis

An image’s resolution is determined by its pixel count, with higher counts resulting in clearer images (Xie et al., 2022). In a study by Djamasbi et al. (2010) on visual stimuli and its influence on visual attention, it was found that animated images with higher resolutions generate stronger visual stimulation and attract greater visual attention. The aesthetic evaluation of an image can be influenced by pixel-level features as well as compositional features (Stasik and Balcerek, 2019). Moreover, Zhang et al. (2021) noted that enhancing pixel resolution improves image quality. Thus, we propose the following hypothesis:

**H1a.** Image pixels have a positive effect on the visual aesthetic perception on the sharing accommodation market.

Based on the theory of visual perception, vivid and realistic emotions are elicited by contrasting elements with high brightness and sharp edges, whereas low brightness contrasts and blurred edges evoke fantasies (Zhang et al., 2016b). High-brightness stimuli elicit visual stimulation as they are preferred by individuals (Wei et al., 2021). Moreover, appropriate brightness levels contribute to the accurate display of information, exerting a powerful and consistent influence on mood (Dong et al., 2015). The mood of experimenters is affected by a bright website background, thereby enhancing their perception of visual aesthetics (Kurt et al., 2017). Therefore, high-brightness websites are expected to be perceived as the most aesthetically pleasing (Palmer et al., 2013). Thus, we propose the following hypothesis:

**H1b.** Image brightness has a positive effect on the visual aesthetic perception on the sharing accommodation market.

According to color psychologists (Xie et al., 2023), different colors have varying effects on people’s emotional expression. Subjective aesthetic perception is influenced by color factors, including hue, brightness and saturation (Hou and Pan, 2023). Schloss et al. (2020) found that cool hues such as blue were found to be the most preferred, while warm hues like yellow and yellow-green were the least preferred. From an aesthetic standpoint, the preference for cool hue colors has evolved into a worldwide aesthetic trend (Zhang et al., 2019). Thus, we propose the following hypothesis:

**H1c.** Compared with warm hue colors, cool hue colors of an image have a higher effect on the visual aesthetic perception on the sharing accommodation market.

2.4 Visual aesthetic perception hypothesis

Aesthetics are regarded as an indicator of the degree to which visual stimuli can evoke pleasant cognitive feelings (Hou and Pan, 2023). The pleasant experience of visual aesthetics plays a crucial role in consumer decision-making and is often used in product design and marketing (Seckler et al., 2015).

Previous studies have shown that visual aesthetic perception affects consumers’ decision-making. For example, in restaurants, consumers will choose aesthetically pleasing dining atmospheres, which largely affect consumers’ hedonic needs (Yu and Liu, 2021). Consumers’ positive visual aesthetic perception can provide a pleasant experience for consumers, thereby improving consumers’ purchase intentions (Kim et al., 2021, Jin et al., 2022, Hou and Pan, 2023). Thus, we propose the following hypothesis:

**H2.** In the sharing accommodation market, consumers are willing to pay a higher price for a property with high visual aesthetic perception.

2.5 Hypothesis of the mediating effect of visual aesthetics perception

Many studies have shown that image features influence consumers’ attention and preferences, and further affect consumers’ decision-making (Krishna et al., 2016). In the
online travel agent platform, Hou and Pan (2023) found that image features can affect visual aesthetic perception and further affect consumers’ behavior. In the sharing accommodation market, studies have found that image features can affect consumers’ decision-making (Zhang et al., 2021).

According to the SOR framework, the image features are the stimuli to consumers, the visual aesthetic perception is the consumers’ perception, while consumers’ purchase decision-making is a response that reflects the Airbnb listing price. Thus, we propose:

\[ H3. \text{ Visual aesthetic perception has a mediating effect between image features (i.e. pixel, brightness, hue) and Airbnb listing price on the sharing accommodation market.} \]

3. Methodology

3.1 Sample selection and data collection

In this research, Beijing was selected as the case study due to its significance as the capital of China and a popular tourist destination. Beijing is also known for being a leading region in China in terms of the number of listings in the sharing accommodation market, experiencing rapid growth, and presenting complex demand patterns (Zhao et al., 2023).

This study aims to investigate the impact of image-based visual price determinants, such as image features and visual aesthetic perception, on Airbnb listing prices within the sharing accommodation platform. The data used for this study were obtained from Insideairbnb.com, a publicly accessible website that aligns with the principles of information openness. Furthermore, the study finds little difference between Insideairbnb and AirDNA (La et al., 2022). To accurately portray the Airbnb supply situation, data on the cumulative number of Airbnb listings and images related to Airbnb in the Beijing market were collected, spanning from March 2011 to October 2020.

3.2 Variables selection

Hou and Pan (2023) trained computer vision algorithms to reflect photographic aesthetic evaluations and argued that while these evaluations may not be accurate for specific individuals, they can still describe ordinary laypeople who can appreciate general patterns of photo aesthetics. Ma et al. (2023) adopted Everypixel’s API (Application Programming Interface) to automate the identification of aesthetic scores for images. Each image was assigned an aesthetic score on a scale of 0 to 1, indicating the likelihood of it being considered a desirable image. Consequently, image aesthetic scores were obtained through the Everypixel website (www.everypixel.com).

The features of an image can be objectively described by a list of characteristics (Chi et al., 2021), we focused only on the brightness, hue, and pixels of the image in this research. These image features were extracted by inputting each image into an Image Color Summary website (www.imagecolorsummary.com).

We first used a web crawler to get the url of more than 27,469 shared accommodation homepage photos. Second, a Python code was created to apply Everypixel’s UGC photo scoring API service and Image Color Summary API service. Third, we can output these compute images’ aesthetic scores and brightness, hue and pixels scores.

To control the effect of other variables, we referred to the studies by Wang and Nicolau (2017) and Chen and Xie (2017) and picked out the control variables, such as room type, superhost, host identity verified, accommodates, host listings count, bedrooms, beds, being instantly bookable, Wifi, breakfast, free parking, smoking allowed and region. The data of these variables for each property were collected from the property dataset.

The explanations of all variables and their descriptions are shown in Table 1.
3.3 Data analysis

To test the effect of image features on visual aesthetic perception, we specified Model (M-1) as the baseline model, taking control variables as the independent variable and Model (M-2) taking the image features (pixel, brightness, hue) as independent variables and visual aesthetic perception as the dependent variable.

\[
\text{Visual aesthetic perception}_i = \alpha + \beta_1 \text{Control}_i + \varepsilon_i \quad (M-1)
\]

\[
\text{Visual aesthetics perception}_i = \alpha + \beta_1 \text{Pixel}_i + \beta_2 \text{Brightness}_i + \beta_3 \text{Hue}_i + \beta_4 \text{Control}_i + \varepsilon_i \quad (M-2)
\]

To test the effect of visual aesthetic perception on Airbnb listing price, following Chen and Xie (2017), we specify the hedonic price model using the quadratic semi-log model in this study. Model (M-3) was used as the baseline model. We specified Model (M-4) using visual aesthetic perception as the independent variable and logarithm price as the dependent variable.

\[
\ln \text{Price}_i = \alpha + \beta_1 \text{Control}_i + \varepsilon_i \quad (M-3)
\]

\[
\ln \text{Price}_i = \alpha + \beta_1 \text{Visual aesthetic perception}_i + \beta_2 \text{Control}_i + \varepsilon_i \quad (M-4)
\]

where \(\alpha\) is the intercept term, \(\beta\) denotes the regression coefficient associated with the corresponding variable and \(\varepsilon\) is the error term, \(i\) refers to each property listing.

To test the mediating effect of visual aesthetic perception (Figure 1), following the research of Preacher et al. (2007) and Hayes (2009), the regression equation is specified as follows:

\[
\text{Visual aesthetic perception} = a_0 + a_1 \text{Image features} + r
\]
\[ \ln \text{Price} = b_0 + c' \text{image_features} + b_1 \text{visual_aesthetic_perception} + r \]

where \( a_0 \) and \( b_0 \) are intercept terms and \( r \) is a regression residual. \( a_1 \) refers to the slope of the visual aesthetic perception regressed on image features, and \( b_1 \) and \( c' \) denote the conditional coefficients of \( \ln \text{Price} \) regressed on visual aesthetic perception and image features, respectively. The indirect effect of image features on \( \ln \text{Price} \) can be calculated using \( a_1b_1 \). The total effect (c) of the image features on \( \ln \text{Price} \) can be calculated as \( c' + a_1b_1 \).

4. Results

4.1 Hypotheses tests

The hedonic price model is used to identify the key factors that influence the pricing of shared accommodation. Using the SOR theory, we investigated the relationship between image features, visual aesthetic perception and the listing price of Airbnb accommodations. Multiple linear regression analysis is used to test the hypothesis. The regression results for Models (M-1) and (M-2) are presented in Table 2. Model (M-1) only used control variables (text-based property information; see Table 1) as explanatory variables. The estimation results for the control variables remain consistent between Model (M-1) and Model (M-2) after incorporating dependent variables. A hierarchical regression strategy is used in this study. The first-stage regression results for equation (2) are listed in Table 3. Model (M-1) only considers control variables (text-based property information clues; see Table 1) as explanatory variables. Compared with Model (M-1), Model (M-2) included the independent variables (i.e. hue, brightness, pixel) as explanatory variables. The estimation results for the control variables remained consistent between Models (M-1) and (M-2).
The estimation results of Model (M-2) in Table 4 show that image features had a significant and positive effect on visual aesthetic perception (coefficient [pixel] = 2.30E-09, p < 0.010; coefficient [brightness] = 3.21E-03, p < 0.010). Compared with low pixel and brightness images, high pixel and brightness would attract Airbnb consumers’ interests and achieve high visual aesthetic perception (Djamasbi et al., 2010).

Compared with the cool image, the warm image had a significant and negative effect on visual aesthetic perception (coefficient [hue warm] = −4.65 E-02, p < 0.1). This indicates that, compared with a warm hue, an image with a cool hue will attract Airbnb consumers’ interest and obtain a higher visual aesthetic perception. These results are consistent with those of previous studies, which showed that a bright and cool hue image will have a higher visual aesthetic perception (Palmer et al., 2013). Therefore, H1a, H1b and H1c were supported.

Bias-corrected bootstrapping with 2,000 resamples was used to estimate the mediating effect (Hayes, 2009). As shown in Table 5, the bootstrap results indicate that compared with cool hue, the indirect effect of warm hue on Airbnb listing price through visual aesthetic perception is also significant (β = −0.006, p < 0.01); 95% confidence interval: lower bounds = −0.008, upper bounds = −0.003). The results demonstrate that visual aesthetic perception mediates the relationship between hue and Airbnb listing price. The indirect effect of brightness on Airbnb listing price via visual aesthetic perception was significant and positive (β = 0.093, p < 0.01; 95% confidence interval: lower bounds = 0.081, upper bounds = 0.104). The results suggest that visual aesthetic perception mediates Airbnb listing price and brightness. The indirect effect of pixels on Airbnb listing price via visual aesthetic perception is significant and positive (β = 0.010, p < 0.01; 95% confidence interval: lower bounds = 0.008, upper bounds = 0.012). The results suggest that visual aesthetic perception acts as a mediator of pixels on the Airbnb listing price. Therefore, H3 was supported.

### 4.2 Robustness test

To test the robustness of the model, we randomly selected 15,000 observations from the total sample and performed a two-stage regression on Models (M-5) and (M-6) with the new
data set. The results in Table 4 show that the estimation results of Model (M-5) and Model (M-6) under the new data set were consistent with Model (M-2) and Model (M-4). This proves that the regression in this study was robust.

5. Conclusion and discussion

5.1 Theoretical implications

Our findings have significant theoretical implications. First, this study offers new insights into the role of visual aesthetic perception in determining accommodation pricing, specifically within the context of Airbnb listings. We discovered a substantial positive relationship between the visual aesthetic perception of images and listing prices, which aligns with previous research indicating that high visual aesthetic perception impacts consumer behavior (Hou and Pan, 2023). In the sharing accommodation market, visual aesthetic perception helps to reduce uncertainty regarding quality and convinces consumers of the product’s quality, thus influencing their behavior (Zhang et al., 2016a). As a clear signal of consumers’ cognitive response, visual aesthetic perception influences their decision-making and pricing in Airbnb.

Second, this study addresses a literature gap by examining the influence of image features on visual aesthetic perception in the sharing accommodation market. It identifies specific image features such as pixels, brightness and hue, and explores their impact on viewers’ visual aesthetic perception. This provides novel insights into the role of image features in eliciting visual aesthetic perception among viewers of sharing accommodation listings.
Table 4  Regression results for M-1 to M-4

<table>
<thead>
<tr>
<th>Dependent variable</th>
<th>M-1</th>
<th>M-2</th>
<th>M-3</th>
<th>M-4</th>
</tr>
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<tr>
<td></td>
<td>Coefficien p-value</td>
<td>Coefficien p-value</td>
<td>Coefficien p-value</td>
<td>Coefficien p-value</td>
</tr>
<tr>
<td>Intercept</td>
<td>0.32 1.78</td>
<td>5.623 5.527</td>
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<td></td>
</tr>
<tr>
<td>Visual aesthetic perception</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pixel</td>
<td>2.30E-09***</td>
<td>&lt;2e-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brightness</td>
<td>3.21E-03***</td>
<td>&lt;2e-16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hue warm</td>
<td>-4.65E-02</td>
<td>5.86E-02</td>
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<td></td>
</tr>
<tr>
<td>Hue cool</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Open time</td>
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<td>4.23E-03</td>
<td>-1.67E-05***</td>
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<td>Host listings count</td>
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<td>5.01E-05</td>
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<tr>
<td>Beds</td>
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<td>2.74E-03</td>
<td>-4.94E-03***</td>
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<td>Superhost</td>
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<td>&lt;2e-16</td>
<td>4.54E-02***</td>
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<tr>
<td>Host has profile pic</td>
<td>4.17E-02*</td>
<td>4.24E-02</td>
<td>6.38E-02</td>
<td>2.54E-02</td>
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<tr>
<td>Host identity verified</td>
<td>-5.24E-02**</td>
<td>6.56E-03</td>
<td>-1.07E-01*</td>
<td>9.88E-01</td>
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<td>Instant bookable</td>
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<td>7.57E-02**</td>
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<td>3.51E-07</td>
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<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<td>R-squared</td>
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<td>0.129</td>
<td>0.3582</td>
<td>0.362</td>
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<td>Adjusted R-squared</td>
<td>0.036</td>
<td>0.128</td>
<td>0.3573</td>
<td>0.362</td>
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<tr>
<td>Sample size</td>
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<td>22,469</td>
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</tbody>
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Notes: *p < 0.1; **p < 0.05; ***p < 0.01
Source: By authors
<table>
<thead>
<tr>
<th>IV</th>
<th>M</th>
<th>DV</th>
<th>Direct effect($c'$)</th>
<th>Indirect effect($a_1b_1$)</th>
<th>Total effect($c$)</th>
<th>SE for indirect effect($a_1b_1$)</th>
<th>95% CI for indirect effect($a_1b_1$)</th>
<th>Result</th>
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<td>HW</td>
<td>VAP</td>
<td>ALP</td>
<td>0.066***</td>
<td>-0.006***</td>
<td>0.061***</td>
<td>0.001</td>
<td>(-0.008, 0.003)</td>
<td>Mediation</td>
</tr>
<tr>
<td>B</td>
<td>VAP</td>
<td>ALP</td>
<td>0.014</td>
<td>0.000***</td>
<td>0.017***</td>
<td>0.006</td>
<td>(0.008, 0.014)</td>
<td>Mediation</td>
</tr>
<tr>
<td>P</td>
<td>VAP</td>
<td>ALP</td>
<td>0.027***</td>
<td>0.000***</td>
<td>0.037***</td>
<td>0.001</td>
<td>(0.008, 0.012)</td>
<td>Mediation</td>
</tr>
</tbody>
</table>

**Notes:** HW = Hue warm; B = Brightness; P = Pixel; VAP = Visual aesthetic perception; ALP = Airbnb listing price; SE = bootstrap standard error; CI = bootstrap confidence interval; Standardized effects; 2,000 bootstrap samples. * $p < 0.1$; ** $p < 0.05$; ***$p < 0.01$

**Source:** By authors
Finally, this study proposes an original theoretical framework that elucidates the mediating role of visual aesthetic perception in the relationship between image features and consumer decision-making. While previous research has focused on image features and aesthetics in offline stores, the mediating role of visual aesthetic perception in the context of sharing marketing photos has been overlooked. By quantifying the aesthetics of large-scale Airbnb photos, we demonstrate the significant influence of visual aesthetic perception on consumers’ decision-making and listing prices. Additionally, this study highlights the potential impact of image features, such as brightness and pixels, on consumer decision-making and listing prices through visual aesthetic perception.

5.2 Practical implications

Our findings offer significant advantages to sharing accommodation businesses in multiple ways. First, our research provides valuable insights for Airbnb hosts to enhance their business performance by optimizing their profile photos. It has been established that aesthetically appealing marketing photos have a positive impact on consumers’ willingness to pay. Hence, hosts should carefully consider the visual aesthetic perception when selecting photos, paying attention to attributes such as pixels and brightness that have shown to yield better results. The study emphasizes the importance of visual aesthetic perception as a mediator, as the use of aesthetic images creates a positive first impression and influences consumer behavior.

Second, our research presents valuable insights for Airbnb platform operators to effectively assist sellers in their marketing efforts. It has been observed that high-pixel and high-brightness images result in increased consumers’ willingness to pay higher prices. Additionally, warm-hued images cater to consumer needs for experiential and hedonic consumption. In our study, an API service was used to quantify and rank photos based on image features and visual aesthetic perception, which were then linked to marketing effectiveness. Considering this, platform operators should design a standardized image reference to guide hosts in selecting marketing images and should use this third-party service to evaluate aesthetics and estimate prices.

5.3 Limitations and future research

This study has several limitations. First, we only extracted visual aesthetic perception, brightness, pixels and hue from images as price determinants. The effects of other image attributes or types of image perception can be explored in future research. Second, we conduct an empirical study only on the Airbnb market in Beijing. The results can be verified in other Airbnb markets or other sharing accommodation platforms in the future.

References


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