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The role of photograph aesthetics on online review sites: Effects of management- vs. traveler-generated photos on tourists' decision-making

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The role of photograph aesthetics on online review sites: Effects of management- vs. traveler-generated photos on tourists' decision-making

Tourists searching for information about destinations on online review sites are concurrently exposed to two different photograph aesthetics, professional (produced by destination managers) and amateur (generated by travelers). While the former is glossy and sharp, the latter is often grainy and overexposed. Although aesthetics are important factors in tourist decision-making, the effects of the exposure to both types of photo aesthetics remain largely unexamined. This research investigates how both types of aesthetics, either singularly or in combination, affect a destination's visual appeal and tourists' booking intentions through four controlled experiments (N = 1282). Our results show that despite the 'messy' beauty in amateur aesthetics, photos with professional aesthetics make a depicted destination appear more visually appealing, ultimately driving booking intentions. However, the negative effects of amateur aesthetics are mitigated when (i) viewed by risk-averse tourists, (ii) presented alongside positive reviews, and (iii) accompanied by a greater number of professional photos.

Keywords: Aesthetics; online photography; social media; user-generated content; review sites

Introduction

Review sites, such as TripAdvisor, have been “ranked the most important information source” (Litvin, Goldsmith, and Pan 2008, 458), where tourists can easily access information about destinations created and shared by other travelers online – both in textual and visual formats (O’Connor 2008). Particularly user- or traveler-generated photographs have become central to online travel sites (Lo et al. 2011; Shin, Noone, and Robson 2018). Referred to as “internet ugly” (Douglas 2014), authors have emphasized the potential of user-generated photos for a more ‘messy’ beauty, garnering stronger affective responses to a photo’s subject matter than professional pictures (Douglas 2014; Pantti 2013). In contrast, extant research has suggested that aesthetically pleasing professional photography should yield more positive responses (Hao et al. 2015), at least in firm-controlled media, such as adverts and websites (Lee, Reynolds, and Kennon 2003; Litvin and Mouri 2009). Following this logic, even TripAdvisor endorses this approach as ‘beauty is a must’ (TripAdvisor 2019), and some tourism managers do not only ask TripAdvisor how to delete ‘ugly’ photographs that tourists have posted (e.g., TripAdvisor 2011) but also supplement amateur photos with professional ones.

Therefore, tourists may be exposed to *both types of photograph aesthetics*, namely amateur and professional aesthetics, when searching for information on online platforms like TripAdvisor. The study of aesthetics is crucial to tourism, since aesthetics or more specifically a destination’s visual appeal play a pivotal role in forming favorable destination images and in affecting tourists’ decision-making positively (Urry 1995; MacKay and Fesenmaier 1997; MacKay and Couldwell 2004). Generally, beauty has been found a key determinant of tourist experiences with the object itself, such as natural environments (Manning, Valliere, and Minter 1999; Wellman, Dawson, and Roggenbuck 1982) or hotels and restaurants (Tuzunkan and Albayrak 2017; Kim and Moon 2009). Also, the

representation of the beauty of travel destinations through photographs or other media, mostly controlled by destination managers, has been shown to drive positive consumer responses (Lee, Reynolds, and Kennon 2003; Litvin and Mouri 2009; O'Connor 2008). For example, Kirillova and Chan (2018) recently showed in a single experiment that hotels presented online as being high in aesthetic value increased booking intentions in contrast to hotels presented as low in aesthetic value, concluding that “[w]hat is beautiful we book”. However, the nature of social media has forced managers to relinquish part of their control over the aesthetic presentation of their offerings, and people looking to plan and book a trip online are exposed to photographs of both amateur and professional aesthetics for an identical destination. Yet, little is known about the role that either, singularly or in combination, plays in determining positive responses towards a depicted destination on online review sites.

Therefore, the goal of this research is to investigate the effects of *both types of photograph aesthetics*, that is, amateur and professional, found on travel review sites on tourists' evaluations and intentions during the information search phase. Specifically, in four online experiments in the context of online hotel booking, we address the following research questions: First, how do photos with amateur versus professional aesthetics impact on visual appeal of the destination (i.e., hotel) and eventually on booking intentions? Second, do individual differences (i.e., risk aversion) and contextual differences (i.e., review valence) moderate the effects of amateur versus professional aesthetics? And lastly, how do amateur and professional aesthetics affect visual appeal and booking intentions when presented in combination but in different order and quantity?

Our contributions to the field are three-fold. First, we extend work on the role of aesthetics of depictions of destinations in impacting tourists' decision-making, which has predominantly examined effects of visual appeal derived from professionally created, aesthetically pleasing content (Hao et al. 2015; Kirillova and Chan 2018; Kirillova et al.

2014). In so doing, we investigate the effects of *different types of aesthetics*, namely professional and amateur aesthetics, that tourists are exposed to during their information search on online review sites. Second, while we accumulate strong support for the positive effects of aesthetically pleasing professional photography on destinations' visual appeal and tourists' booking intentions, we examine conditions on an individual (risk aversion) and contextual (review valence) level under which negative effects of amateur aesthetics may be attenuated. Specifically, concerning risk aversion, a key barrier to the online purchase of hotel stays is perceived risk or uncertainty over whether the accommodation will be of high quality (see Shulman, Cunha Jr, and Saint Clair 2015). As established by prior research (Casaló et al. 2015), tourist-generated, written reviews play an important role in purchase decisions, especially for risk-averse tourists. We contribute to these findings and show that individual risk aversion may also act as a boundary condition to the negative effects of amateur aesthetics on visual appeal, in that risk-averse tourists may find hotels depicted through amateur aesthetics as visually appealing as those depicted through professional aesthetics. Furthermore, concerning review valence, photos on review websites are usually accompanied by written reviews. While review valence has been shown to affect tourist decision-making (e.g., Ye et al. 2011), we draw from the spill-over effect (e.g., Argo, Dahl, and Morales 2008) to contribute with knowledge about the combined effects of photo aesthetics and review valence on tourists' evaluations. We find that the negative effect of amateur aesthetics is attenuated when accompanied by a positive review but heightened with a negative review.

Third, responding to calls to further our understanding of online photography in tourism (see Marder et al. 2018), we provide insights into order and quantity effects when photography with amateur and professional aesthetics are presented together, arguably the

most common exposure during tourists' information search (see Shin, Noone, and Robson 2018). Lastly, we provide actionable implications for tourism managers.

Theoretical Background and Hypotheses Development

Aesthetics and visual appeal in tourism

Evaluation of aesthetics can be largely thought of in terms of visual appeal, which has been investigated as visual aesthetics, natural beauty, or visual attractiveness in tourism (Hu and Ritchie 1993; Law, Qi, and Buhalis 2010; Kirillova et al. 2014). Aesthetics scholars have been engaging in debates about what constitutes aesthetics from different viewpoints and with different foci (Kant 2007; Osbourne 1968; Berlyne 1971). General consensus in consumer, marketing and tourism research has been that aesthetics induce hedonistic values in viewers, such as pleasure, awe, or enjoyment (see Holbrook and Hirschman 1982; e.g., enjoyment of the beauty of nature in the context of forests, see Manning, Valliere, and Minteer 1999).

Nuances can be found in how researchers have conceptualized or operationalized aesthetics. For example, comprehending factors that determine the beauty of landscapes, earlier research found aspects such as texture, color and landform to be relevant (Kaplan, Kaplan, and Brown 1989), and such scenic beauty has been found to be a key aspect in people's recreational experience of national parks (Wellman, Dawson, and Roggenbuck 1982). The effect of visual appeal on tourists extends beyond natural environments, such as restaurants or hotels (Tuzunkan and Albayrak 2017; Kim and Moon 2009). For example, Saleh and Ryan (1992, 168) showed that visual appeal of the interior and exterior of hotels was to some extent "more important than the range of facilities being provided" to hotel guests, at least initially and when guests had no other experiences with the hotel. Similarly, Phillips (2004) suggested an 'aesthetic imperative' for hoteliers who aimed at remaining competitive, and Alfakhri et al. (2018) conceptualized key elements in hotel interior designs, such as color, lighting, furniture, style, and layout, to create value for both customers and hoteliers.

The aforementioned studies have largely investigated how tourists come to appreciate the beauty of the *actual* destination. A growing body of research provides insights into the effects of *mediated* aesthetics in a tourism context, where tourists have to rely on representations of destinations through media to make decisions in pre-consumption stages, such as websites (Zhang et al. 2018) and, importantly, photographs (Kirillova and Chan 2018). Scholars who investigate mediated aesthetics have suggested to conceptually distinguish between two components: classic aesthetics or aesthetic formality, including aspects like symmetry, clarity in design, cleanliness in design, or order; and expressive aesthetics, including color vibrancy, creativity, originality, or sophistication (Lavie and Tractinsky 2004; Schenkman and Jönsson 2000).

More generally, numerous studies in advertising and marketing have found high quality images with professional aesthetics to stimulate optimal consumer responses (Lohse and Rosen 2001; Lombard and Snyder-Duch 2001; Pollay 1986). Accordingly, tourism advertising has long focused on capturing and presenting visuals that are “most likely to enhance a destination’s image, motivate a purchase decision, and induce visitation” (Litvin and Mouri 2009, 152). Therefore, photographs used to market destinations in brochures, websites, or other kind of advertisements are usually of professional quality, look glossy, expensive, and are perfectly arranged (Lee, Reynolds, and Kennon 2003; O’Connor 2008). They aim to create enchantment, enhance beauty, and emphasize hedonistic aspects of travelling (Kirillova and Chan 2018; Boley, Nickerson, and Bosak 2011). In addition, representations of beauty may lead to a positive spillover to other characteristics of the destination depicted. More specifically, Kirillova and Chan (2018) manipulated the aesthetic value of hotels by presenting study participants with photographs, where photos high in aesthetic value were controlled for criteria such as symmetry, clarity, or originality. The

authors found that hotels depicted as providing a higher aesthetic value were judged to have better physical facilities, provide superior service and be more trustworthy.

Professional aesthetics versus ‘internet ugly’

Studies in tourism have predominantly focused on examining effects of professional aesthetics in depicting a destination in environments controlled by tourism providers, such as brochures or firm-provided websites. Although limited in numbers, these studies generally show that visual stimuli that incorporate aspects such as clarity, symmetry or color vibrancy, found primarily in professional photography, do indeed enhance visual appeal of the destination. However, social media have challenged this ‘glossy’ advertising designed and distributed by tourism managers. Tourist- or user-generated content is now found on a variety of social media platforms, including travel-specific (e.g., TripAdvisor, Yelp) and general sites (e.g., Facebook, Instagram). While much is known about the effects of written reviews on destination choice (e.g., Ayeh, Au, and Law 2013), the effect of online photography with amateur aesthetics on tourists’ perceptions and decision-making is less clear. Prior research in this area has largely focused on the photo-taker themselves, their motivations, chosen locations, or geo-tagging of photos (Munar and Jacobsen 2014; Lo et al. 2011; Salas-Olmedo et al. 2018; Choi and Choi 2018). While tourism providers have both an incentive and the technical means (e.g., professionally trained photographers and professional equipment) to present their offerings in the most visually appealing way through photographs with professional aesthetics on review sites, tourists largely lack this economic incentive and likely have fewer technical means to create as visually appealing photos for review sites as providers do.

The term amateur aesthetics is used and defined very loosely within literature. Douglas (2014, 315) coined the term ‘internet ugly’ to describe the aesthetics of amateur

online content opposed to professional content, defining it as an “imposition of messy humanity upon an online world of smooth gradients, blemish-correcting Photoshop, and AutoCorrect”. Mirroring these thoughts, Pantti (2013, 201) asserted that amateur photography within journalism broke away from traditional media, providing “unconstructedness, unconventional framing”. Nichols (Nichols 2000) defined amateur aesthetics as sometimes grainy, sometimes sharp but generally as imperfect depictions of objects, generally lacking beauty. Research uncovering the effects of such amateur aesthetics remains scarce. Ma et al. (2018) found that amateur photos increased the perceived helpfulness of textual reviews on travel review sites. Colliander and Marder (2018) showed that adopting some aspect of amateur aesthetics in professional photography presented by brands online may benefit source credibility, brand attitude and positive word-of-mouth. However, the ‘snapshot aesthetic’ in their study determined mainly the frame of the image rather than its entire quality, and the photo stimuli still exhibited what could be judged as professional aesthetics to drive positive brand responses. In addition, the results of another study show that ostensible amateur aesthetics do not unfold their effect if manipulated merely through source attributions. More specifically, comparing effects of product- versus experience-focused photographs on booking intentions, Shin, Noone, and Robson (2018) found participants’ booking intentions were independent from whether photos were presented to originate from the tourism provider, prior guests or a mix of both. Importantly, the authors used the same high-quality photos as their stimuli throughout, controlling for factors such as brightness, sharpness, composition and resolution, and only varied the source of the photos instead of their aesthetics. As such, these results are limited to tourist-generated photography with the same level of aesthetic quality as professional photos, and therefore fail to shed light on effects from different types of photography aesthetics in tourism.

In sum, the results of prior research suggest that visual appeal of a depicted destination, in this study a hotel, should increase when the photo exhibits professional aesthetics. While extant research has not specifically examined effects of amateur aesthetics on visual appeal, the notion of amateur aesthetics appears to include some ‘ugliness’, which does not meet a level of aesthetic quality required to induce perceptions of a destination’s visual appeal. Prior research has not empirically validated the effects of professional versus amateur aesthetics on visual appeal of the depicted object, in the context of this study a hotel. Therefore, we test the following hypothesis to establish a baseline effect, on which we build all subsequent studies:

H1: Tourists will perceive a hotel presented through photos with professional aesthetics (vs. amateur aesthetics) to be more (vs. less) visually appealing.

Individual differences: Risk aversion

Individual risk tolerance is an important factor to consider when tourists make purchase decisions on travel destinations (Karl 2018; Pitt, Eriksson, and Plangger 2019), particularly online where such decisions are associated with high levels of perceived risk (Lin, Jones, and Westwood 2009). Individuals vary with regards to the risk they may tolerate, and risk aversion is commonly employed as an individual difference variable that captures attitude towards risk (Baz et al. 1999). Risk aversion in tourism has been most commonly studied in relation to the risky nature of the destination (e.g., it is unsafe), and risk-averse tourists are likely to revisit familiar destinations with a “high safety level” and “where safe activities are offered” (Karl 2018, 137). However, risk for tourists may also involve “uncertainty over the performance and quality of the service” in pre-purchase stages due to lack of perfect information (Sun 2014, 173). This type of risk is specifically known as ‘performance risk’, defined as the loss arising when a market offering does not perform as

expected (Horton 1976). Performance risk is known as a “surrogate measure and not-component” of risk (Mitchell and Greatorex 1993, 3), due to the consistently high correlations between risk types (e.g., Brooker 1984).

Performance risk (hereafter termed risk) is widely known as an important determinant of purchase behavior (Mitchell and Greatorex 1993), and hotel firms invest in reducing risk for consumers to drive sales (Shulman, Cunha Jr, and Saint Clair 2015). All purchases carry risk, and this may be increased, when offerings have not been experienced first-hand and can be characterized as high-involvement, two factors that are particularly true for online hotel purchases (Mitchell 1992; Casaló et al. 2015). The effect risk has on tourists’ purchase intentions may also be determined by the individual level of risk aversion, which makes risk aversion a “personal characteristic relevant” to the study of purchasing travel-related offerings online (Casaló et al. 2015).

Tourists often turn to review sites because they perceive user-generated content as more trustworthy than content produced by the service provider (Dickinger 2011). User-generated content, such as online reviews, has been shown to be sought out by consumers to offset any perceived risk, especially for those who are risk-averse (Ha 2002; Bronner and de Hoog 2011). Risk-averse tourists have been shown to be particularly skeptical towards reviews that may seem positively-biased, even when this content was produced by their peers (Casaló et al. 2015). However, Casaló et al. (2015) also found perceived review usefulness could be increased when only one hotel photo was added to the review. While these results aid our understanding of the role of written reviews to mitigate perceived risk, the type of photo aesthetics may also be relevant for more or less risk-averse tourists. For example, research has suggested that glossy advertising campaigns with their professional photography paint offerings in a rather unrealistic light, a phenomenon that has led to some marketing cynicism among tourists (Chan, Cui, and Cui 2004; Nolan Jr 1976). In contrast, amateur

photography has been suggested to be perceived as more realistic (see Pantti 2013). These prior works all converge on the same notion: that user-generated content, whether in written or visual form, may mitigate risk perceptions resulting from online hotel booking by appearing more useful, trustworthy, or realistic, specifically to risk-averse tourists. However, the level of risk aversion might also affect individuals' judgments of visual appeal, an imperative in the hotel industry as discussed before. While a positive effect of amateur aesthetics on variables such as usefulness is relatively intuitive, the effect on visual appeal is less so. In particular, we argue that more realistic-appearing amateur aesthetics may offer some resolution to risk-averse tourists in their information search; in turn, the proposed negative effect of amateur aesthetics on visual appeal may be at least attenuated for individuals high in risk aversion. Thus, we hypothesize:

H2: Tourists who are high in risk aversion (vs. low in risk aversion) will perceive hotels presented through photos with amateur aesthetics as more (vs. less) visually appealing.

In addition, visual appeal of a destination, be it through direct or mediated experiences, has been shown to positively affect constructs such as destination image or perceived service quality, which are well established to increase visitation intention (Kirillova and Chan 2018; MacKay and Fesenmaier 1997). It is imperative we establish visual appeal as a mediating variable within our model to provide an empirically and conceptually valid base for further examinations. Therefore, if tourists perceive the visual appeal of a destination to be high, their booking intentions should increase. Hence,

H3: The greater tourists perceive a hotel's visual appeal, the higher their booking intentions will be.

Figure 1 summarizes the conceptual framework and hypotheses H1 through H3, which we investigated in Study 1. This framework presents a baseline for the following studies where we examined the moderating effect of the contextual variable of review valence (Study 2) and the effect of presenting photos with amateur and professional aesthetics in combination (Studies 3, 4) on tourists' perceived visual appeal of the hotel and their booking intentions.

---INSERT FIGURE 1 HERE---

Method

Study 1

The goals of Study 1 were to test the main effect of amateur versus professional aesthetics on visual appeal of the presented hotel during tourists' information search (H1), the moderating role of risk aversion (H2), and the effect of visual appeal as a mediator on booking intention (H3).

Stimuli

A pilot study with 240 participants (54.4% female; $M_{age} = 36.60$, $SD = 11.16$) was conducted, in which we pre-tested different sets of stimuli for this and the following studies. In Study 1, we used a natural set of stimuli, high in ecological validity. Specifically, for the pilot study, we randomly selected four photos from TripAdvisor, which had been taken by hotel management and four photos that had been taken by guests of a hotel in Edinburgh, showing the front of the building, the bedroom, the hallway, and the bathroom, respectively. Pretesting confirmed that the photos taken by the hotel management were perceived as more professional in their aesthetics than their amateur counterparts were ($M_{Prof} = 6.58$, $SE = .19$ vs. $M_{Ama} = 4.33$, $SE = .18$, $p < .001$) on a seven-point scale (1 = Very amateur – 7 = Very professional).

In order to prime the level of risk aversion in respondents, we designed vignettes, akin to Rungtusanatham, Wallin, and Eckerd's (2011, 9) process to ensure they were "clear, realistic and complete". More specifically, the stimulus priming high risk aversion required participants to imagine they were Traveler (A) who was planning a trip to Edinburgh (UK) in the summer of 2019 with their family. To prime risk aversion, they were told that "this traveler is highly risk-averse when it comes to choosing hotels online", because without first-

hand experience they were unsure “what it is really like to stay there” and their “major worry was that the hotel would not meet their expectations”. The low risk aversion stimulus also introduced Traveler (A) who was planning a trip to Edinburgh. However, in this vignette, Traveler (A) was described as “not at all risk-averse”, because of their confidence that seeing a hotel online would provide them “with a good impression of what it will be really like to stay there”. High and low risk aversion vignettes included 116 and 118 words respectively (see Appendix A for full vignettes).

Participants, procedure, and measures

A total of 363 respondents completed the survey (52.6% female; $M_{age} = 36.35$, $SD = 10.72$). As in the pilot and all subsequent studies, we recruited participants through Turk Prime (Litman, Robinson, and Abberbock 2017), an online research panel service that pools participants from Amazon Mechanical Turk (MTurk), among others. Data collection through MTurk has been used widely within tourism research (e.g., Colliander, Söderlund, and Marder 2019; Guttentag et al. 2018), and studies have supported the validity of MTurk data within quantitative research, finding it performs as well as other forms of survey data collection methods (Paolacci, Chandler, and Ipeirotis 2010; Buhrmester, Kwang, and Gosling 2011).

Although caution must be exercised in generalizing beyond the sample (Black 1999), this purposive sampling method is acceptable where the criteria are demonstrably set and sustained by the context. We employed criteria similar to Shin, Noone, and Robson (2018), recruiting adults residing in the U.S., who had looked online with the intention to book a vacation in the past two years. Furthermore, we restricted the sample insofar, as only online panel members with a relatively high track record of tasks found acceptable by recruiters (i.e., 85% HIT acceptance rate) could participate. We also restricted multiple responses from

the same IP address. Respondents' online panel numbers were recorded, so that participants could be automatically excluded from subsequent studies in this paper to avoid respondents taking part in more than one study of this research. In the pilot and all main studies, participants were asked to confirm that they met the sample criteria (i.e., that they agreed to participate in the study, were 18 years or older, and had searched online for information about hotels in the past two years), and were exited from the survey if they did not.

Once they had confirmed the sample criteria, respondents were randomly allocated to one of the four conditions of this 2 Photo Aesthetics (professional vs. amateur) \times 2 Risk Aversion (low vs. high) between-subjects design. Participants were first asked to read the vignettes, which contained the risk manipulation, carefully. Using an embedded timer, they were unable to continue with the study until they had spent ten seconds on the page presenting the vignette. To check the manipulation of risk aversion, respondents were asked on the next page to rate the risk aversion of Traveler (A) on a 7-point differential semantic scale (1 = Not at all risk averse vs. 7 = Highly risk averse).

After the vignette, participants were exposed to the photo stimuli. The experimental groups who were presented with photos with professional aesthetics were informed that the marketing team of the hotel had taken the photos, while the other groups were presented with photos that were marked to have been taken by hotel guests (amateur aesthetics). It should be noted that the pilot study included a test of whether the presence or absence of explicit source attributions affected respondents' evaluations of photo aesthetics. We found this not to be the case for any set of stimuli ($ps > .13$).

When presented with the photos, participants were instructed to carefully study them for a minimum of ten seconds, while imagining they were Traveler (A). After studying the photos, participants were presented with an attention check, asking them to indicate the correct name of the hotel from the vignette out of three given options. In case of incorrect

answers, participants were immediately exited from the survey, and their data not included in the analysis. In case of the correct answer, participants were asked to fill in the aesthetics manipulation check, visual appeal of the hotel, and booking intention, which were presented in randomized order, followed by demographics (age, gender). We used the same measurement for the aesthetics manipulation check as in the pilot study. Visual appeal of the hotel was measured with three items ('The way this hotel displays its offerings is attractive'; 'This hotel is aesthetically appealing'; 'I like the way this hotel looks'), adapted from Choi and Choi (2018), on a seven-point scale (1 = Strongly agree – 7 = Strongly disagree; $\alpha = .95$). Booking intention was measured using two items, similar to Petrick and Backman (2002), on a seven-point Likert scale ('I would want to book this hotel'; 'I would like to stay at this hotel'; 1 = Strongly agree – 7 = Strongly disagree; $r = .88$).

Results and discussion

Two independent sample t-tests supported the manipulation of aesthetics ($M_{Prof} = 1.38$, $SE = .08$ vs. $M_{Ama} = 5.56$, $SE = .12$, $t = -29.236$, $p < .00$; $\eta^2 = .70$) and the manipulation of risk aversion ($M_{Low-aversion} = 1.93$, $SE = .11$ vs. $M_{High-aversion} = 6.36$, $SE = .08$, $t = -32.505$, $p < .00$; $\eta^2 = .75$), respectively.

To test the hypothesized effects of aesthetics, risk aversion, and their interaction on visual appeal of the hotel, we conducted a two-way ANCOVA, including gender and age as covariates. Levene's test for equality of variance revealed a violation. ANOVAs are relatively robust against violations of variance (Weerahandi 1995; Ito 1980). Whilst we continue to present the F-statistic, we exercised caution by triangulating results with additional non-parametric tests throughout the study series to support core parametric findings (Tung, Chen, and Schuckert 2017; Colliander, Söderlund, and Marder 2019), and we note limitations in generalizability.

We found significant main effects for both risk aversion ($F(1,352) = 5.61, p = .018, \eta^2 = .02$) and aesthetics ($F(1,352) = 84.96, p < .001, \eta^2 = .19$), while covariates were non-significant ($ps > .09$). Importantly, the interaction effect between risk aversion and aesthetics was significant, albeit marginally ($F(1,352) = 3.83, p = .051, \eta^2 = .01$)¹. Specifically, and in line with H1, visual appeal of the hotel was generally greater when participants saw photos with professional aesthetics in contrast to amateur aesthetics ($M_{Prof} = 1.59, SE = .07$ vs. $M_{Ama} = 2.55, SE = .07$). However, the negative effect of amateur aesthetics was mitigated when participants were primed with high risk aversion, so that individuals high in risk aversion viewed the hotel to be more visually appealing than participants low in risk aversion ($M_{High-aversion} = 2.32, SE = .11$ vs. $M_{Low-aversion} = 2.80, SE = .10, p = .002$), supporting H2. Means and standard errors for visual appeal in the experimental conditions of all studies are reported in Table 1.

To investigate the role of visual appeal as a mediator between photo aesthetics and booking intention, we tested a mediation model, using the Preacher and Hayes (2004) bootstrapping method (set to 5000) in the PROCESS macro (version 3) for SPSS (Hayes 2018). Specifically, we estimated the effect of aesthetics on booking intention with visual appeal as the mediator and risk aversion as the moderator of path a, that is, moderating the relation between aesthetics and visual appeal of the hotel (PROCESS v.3, model 7). We included both gender and age as covariates. At the 95% level of confidence, the moderated mediation was deemed significant ($Eff = .332, SE = .17, LCI = .012, UCI = .617$).

Specifically, the greater participants perceived the visual appeal of the hotel, contingent on both photo aesthetics and risk aversion, the higher their intention was to book the hotel (H3).

Study 1 supports our expectation that professional aesthetics in photos are positively associated with the visual appeal of hotels (H1), which in turn affects booking intention positively (H3). Although participants who were exposed to amateur aesthetics viewed hotels

to be more visually appealing when they were primed with high risk aversion (H2), the positive influence of professional aesthetics on visual appeal worked consistently whether someone was experiencing low or high risk aversion. Having established the salience of risk aversion as a moderator, the stimuli in Study 1 were restricted insofar as they were presented in isolation without any additional information about the destination. However, reviewers of a destination rarely post their pictures on review sites without textual reviews, as these sites often require a written review before a picture may be uploaded. Therefore, in the second study, we tested the possibility that the valence of accompanying reviews may function as a moderator of the effect of photo aesthetics on visual appeal of hotels.

Study 2

Reviews are generally known to be a critical influence on tourist decision-making (Ma et al. 2018; Ayeh, Au, and Law 2013). Prior research has found that positively, in contrast to negatively, valenced reviews affect visitation intention and profits favorably (Ye et al. 2011; Ladhari and Michaud 2015; P. Phillips et al. 2017). Furthermore, Park and Nicolau (2015) found that while negative reviews were perceived as more useful, positive reviews were more enjoyable for readers. To unpack the consequences of user reviews accompanying photographs with different types of aesthetics, we employ a classic spillover perspective (e.g., Simonin and Ruth 1998).

Spillover effects predominate when valence and meaning implicit in one object transfer to a different, and sometimes unrelated, object, normally because they share proximity or some kind of extrinsic relationship. Positive and negative spillover effects have been observed in a wide range of situations. For instance, products have been shown to appear more attractive when beautiful people have touched them (Argo, Dahl, and Morales 2008); merchandise appears more luxurious when encased in, or on, a more attractive

museological display (Logkizidou et al. 2019); and two parties in a formed brand alliance may be denigrated by consumers even if only one of them has done something untoward (Votola and Unnava 2006). Applying the same logic to our context, we expect that the influence of photograph aesthetics on visual appeal should be contingent upon the valence (positive vs. negative) of an accompanying review. If the review is positive, we expect this valence to spill over to the photograph, ultimately affecting perceptions of its content. More specifically, tourists should perceive a hotel in a more favorable light if the review is positive, irrespective of the type of photo aesthetics. Similarly, when a negative review accompanies a photo, we anticipate visual appeal will be lower; however, this should have a greater impact on photographs with amateur aesthetics. The underlying logic of this nuance is that the naturally lower grade quality offered by amateur aesthetics works to reinforce the negative impression conveyed in the review, creating a deeper and more negative overall spillover effect. This consequence should be attenuated when the cues are of a mixed nature, that is, a combination of positive (professional) and negative (review) cues appear sequentially. More formally, we hypothesize:

H4: When tourists are exposed to a positive review, they will evaluate the hotel as visually appealing, irrespective of whether photographs with professional or amateur aesthetics accompany the review. However, when potential tourists are exposed to a negative review, they will evaluate the hotel as more visually appealing, when the review is accompanied by photographs with professional (vs. amateur) aesthetics.

Stimuli

For Study 2, we opted to employ the second set of stimuli that we had pre-tested in the pilot study. More specifically, for stimuli that were more controlled and higher in internal

validity than those in Study 1, we had selected two professional photos from TripAdvisor through a search for accommodation in the Highlands in Scotland. For both images, it was explicitly stated on TripAdvisor that they had been taken by the hotel management. One photo was of a bedroom and the other of a cream tea lunch placed on a table in the hotel's café/restaurant. In order to create photos with amateur aesthetics, we edited these photos with Adobe Photoshop. We followed the reverse of the advice from an online guide for expert photography (Hull 2018) on how to make photos appear more professional by increasing noise, shadow, and exposure levels. The pre-test confirmed that the unedited photos were perceived to be of higher professional aesthetics than the edited photos, supporting our aesthetics manipulation ($M_{Prof} = 6.49, SE = .18$ vs. $M_{Ama} = 3.30, SE = .18, p < .001$).

To manipulate review valence, we developed two reviews of a fictitious hotel in Edinburgh as review subject (see Appendix B). The content of the reviews was inspired by existing reviews for Edinburgh hotels on TripAdvisor. The reviews were similar in length (46 and 47 words) and involved the same subjects. However, we manipulated the valence by using positive or negative attributes (e.g., "room was exceptionally clean/dirty") and added a pictorial star rating (five stars or one star, respectively).

Participants, procedure, and measures

In this study 225 respondents (51.1% males; $M_{age} = 35.16, SD = 11.12$) participated. Subjects were recruited following the same procedure as in Study 1 and were randomly allocated to one of the four conditions of this 2 Photo Aesthetics (professional vs. amateur) \times 2 Review Valence (positive vs. negative) between-subjects design.

Participants had to imagine they were searching for hotels online to stay in during a vacation to Edinburgh. They were then presented with the photos and review of their respective condition in a randomized order, so that participants were exposed either to the

review or to the photos first. A timer on both pages (review and photo) ensured engagement lasted at least ten seconds. The aesthetics manipulation and attention check questions followed and were the same as in Study 1. Perceived review valence and perceived review realism were each measured on one item asking participants to rate the extent to which they agreed to the statements ‘The review is positive about the hotel’ and ‘The review is realistic (i.e., it would be normal to see a review like this on TripAdvisor)’, respectively (1 = Strongly agree – 7 = Strongly disagree). The dependent measures followed on the next page, including visual appeal of the hotel and booking intention, measured as in Study 1. Lastly, respondents reported (i) the frequency with which they went on vacation, (ii) the time since their last vacation, and (iii) demographics. For (i) and (ii) we adopted the measures from Marder et al. (2018), where each covariate was measured on a three-items, 7-point Likert scale ($\alpha = .90$ and $\alpha = .91$, respectively).

Results and discussion

Two independent sample t-tests supported both the aesthetics manipulation ($M_{Prof} = 6.51$, $SE = .08$ vs. $M_{Ama} = 3.64$, $SE = .18$, $t = -14.596$, $p < .001$, $\eta^2 = .49$) and the review valence manipulation ($M_{Negative} = 6.54$, $SE = .12$ vs. $M_{Positive} = 1.43$, $SE = .11$, $t = 32.53$, $p < .001$, $\eta^2 = .83$). A one-sample t-test against the central scale point (4) deemed the reviews as realistic ($M = 2.47$, $SE = .10$, $p < .001$).

To test H4, we conducted an ANCOVA, including all covariates. Levene’s test for equality was again violated; based on the same rationale as in Study 1, we proceeded with some caution². Main effects were revealed for both review valence ($F(1,216) = 26.75$, $p < .001$, $\eta^2 = .11$) and aesthetics ($F(1,216) = 21.64$, $p < .001$, $\eta^2 = .09$), with none of the covariates significant (all $ps > .165$). Importantly, the interaction effect between aesthetics and review valence was significant ($F(1,216) = 5.96$, $p = .015$, $\eta^2 = .03$). Specifically, if the

review was positive, there was no significant difference in visual appeal between professional and amateur aesthetics ($M_{Prof} = 1.70, SE = .16$ vs. $M_{Ama} = 2.05, SE = .16, p = .121$). However, when the review was negative, visual appeal was significantly lower for amateur in contrast to professional aesthetics ($M_{Prof} = 2.15, SE = .17$ vs. $M_{Ama} = 3.29, SE = .16, p < .001$), supporting H4. We again tested H3 in a moderated mediation test. As in Study 1, the mediating effect of visual appeal on booking intention, including review valence moderating the effect of aesthetics on visual appeal (path a), was significant ($Eff = .622, SE = .26, LCI = .143, UCI = 1.128$).

Overall, the results of this study add further support to our expectation that professional photo aesthetics, in contrast to amateur aesthetics, affect visual appeal positively, which in turn has a positive influence on booking intentions (H1, H3), also when employing natural, uncontrolled stimuli. Review valence was found to be a significant moderator of this relationship. More particularly, viewing a positive review overrode the negative effect of amateur aesthetics on visual appeal, while exposure to a negative review exacerbated this effect (H4).

Until now, we investigated the effects of professional and amateur aesthetics separately. However, in reality, readers of online reviews are rarely exposed to only amateur or professional pictures. Instead, exposure normally involves a combination of the two. We addressed this shortcoming in the following two studies, which shed light on what happens when mixed photo aesthetics are at play.

Study 3

Returning to H1 and the empirical evidence provided in studies 1 and 2, we expect participants' visual appeal ratings, who are exposed to both photos with professional and photos with amateur aesthetics (in the following referred to as 'mixed aesthetics'), to occupy

the middle ground between ratings of amateur or professional aesthetics only. Formally, we hypothesize:

H5: Tourists will perceive a hotel presented through photos with professional (vs. mixed vs. amateur) aesthetics to be more (vs. less) visually appealing, while visual appeal will be greater for mixed aesthetics than for amateur aesthetics.

Stimuli

We adopted the natural, uncontrolled stimuli from the pilot test and Study 1. Specifically, participants were either exposed to amateur aesthetics or professional aesthetics in isolation, or were presented with both, resulting in a 3 Photo Aesthetics (professional vs. amateur vs. mixed) between-subjects design.

Participants, procedure, and measures

Following the same recruitment and screening procedure as in the previous studies, 455 individuals (51.2% male, $M_{age} = 35.22$, $SD = 9.77$) participated. Participants were randomly allocated into one of the three conditions. As in the previous studies, participants were asked to imagine they were looking at hotels online to stay in during a vacation to Edinburgh. Afterwards, they were presented with the stimuli, attributed to the hotel's marketing team, hotel guests, or both the marketing team and hotel guests in the mixed condition. Professional and amateur photos in the mixed condition were presented in randomized order. Again, an embedded timer was used to ensure sufficient exposure time. The attention and manipulation checks followed. To confirm the manipulation of mixed aesthetics was successful, we adapted the aesthetics manipulation check from the previous studies. Specifically, participants were asked to rate on a one-item, 7-point scale whether all

of the photos shown were of professional or amateur or some of them of professional and some of them of amateur quality (1 = All of professional quality, 4 = Some of professional, some of amateur quality, 7 = All of amateur quality). Lastly, dependent variables, covariates, and demographics were collected as in Study 2.

Results and discussion

A one-way ANOVA supported the manipulation; perceived aesthetics in the three conditions were significantly different from each other, and participants perceived the mixed condition to contain photos of both amateur and professional quality ($F(2,455) = 280.33, p < .001, \eta^2 = .55; M_{Prof} = 1.66, SE = .11$ vs. $M_{Ama} = 5.42, SE = .11$ vs. $M_{Mixed} = 3.83, SE = .12$).

We tested H5 in an ANCOVA, including gender, age, vacation frequency and time since last vacation as covariates. Once again, we proceeded with caution concerning the violation of equality of variance³. We found a significant main effect for aesthetics on visual appeal ($F(2,455) = 26.12, p < .001, \eta^2 = .10$). Importantly, individuals evaluated the hotel as most visually appealing when presented with professional aesthetics only, while as least visually appealing when exposed to amateur aesthetics only. When presented with mixed aesthetics, visual appeal was higher than for amateur but lower than for professional aesthetics ($M_{Prof} = 1.65, SE = .08$ vs. $M_{Ama} = 2.48, SE = .08$ vs. $M_{Mixed} = 2.03, SE = .08, ps < .01$), supporting H5. Gender was the only significant covariate ($p = .049$), while the other covariates were found non-significant ($ps > .130$).

In order to test H3, we carried out a mediation test. Since the aesthetics manipulation had three levels in this study, we treated it as a multi-categorical variable. Enabling the corresponding feature in PROCESS, the aesthetics variable was split automatically into two dummy variables, where the professional aesthetics condition served as a reference category against which the results for the amateur aesthetics (D1) and mixed aesthetics (D2)

conditions must be interpreted. Results supported H3, in that visual appeal mediated the effect of aesthetics on booking intention. Significant indirect effects were found for both D1 ($Eff = .664$, $SE = .10$, $LCI = .466$, $UCI = .878$) and D2 ($Eff = .302$, $SE = .08$, $LCI = .145$, $UCI = .473$) at the 95% level.

Overall, the findings of this study show that an equal mix of amateur and professional aesthetics affect visual appeal of the hotel and is situated in the ‘middle ground’ between the effects of professional and amateur aesthetics presented in isolation. Visual appeal, in turn, mediated the effect of aesthetics on booking intention, in that the higher the visual appeal of the hotel, the higher participants reported their booking intentions. Since travelers are not necessarily exposed to an equal number of professional and amateur photos and might first see the one or the other when searching for information, this study builds the basis for the following and last study, where we tested the effects of exposure order and of the quantity of professional and amateur photos included in a mix.

Study 4

Should it matter if a tourist sees photos with professional or with amateur aesthetics first? The importance of ordering effects in marketing has an established track record. Primacy effects exist when consumers favor options they are presented with first, as shown, for example, in the context of online shopping simulations (Breugelmans, Campo, and Gijsbrechts 2007). In contrast, a number of studies have found evidence for recency effects, that is, a positive bias towards the most recently viewed stimuli (Dayan and Bar-Hillel 2011; Murphy, Hofacker, and Mizerski 2006). A recent study on hotel booking suggested a curvilinear effect of hotel position on the list on choice; that is, hotels at the beginning and at the end of a list were more likely to be chosen than those in the middle (Ert and Fleischer 2016).

Furthermore, it is reasonable to speculate that a tourist may not only be exposed to photos that differ in the order in which they are viewed. Photos with different types of aesthetics may also vary in quantity during exposure. To illustrate, a potential tourist reading about a hotel on TripAdvisor may be first exposed to five amateur photos and then to 15 professional photos or vice versa. Generally, repetition of the same or similar stimuli has been shown to have both positive and negative effects on recall and attitudes. On one hand, repetition may lead to familiarity (Berlyne 1970) and greater learning (Stang 1975). On the other hand, repetition or the mere exposure to the same or similar stimuli may also lead to feelings of redundancy and boredom, effecting both false recall and negative attitudes (Berlyne 1970; Cacioppo and Petty 1979). A recent meta-analysis of frequency effects in advertising concluded repetitions of ten or more can increase attitude towards and recall of ads, but that too many exposures may reduce these positive effects (Schmidt and Eisend 2015).

Therefore, when potential tourists are exposed to both types of aesthetics in a mix, the order and the quantity of exposures should generate diverging results. We expect that a higher volume of professional aesthetics should result in more favorable ratings of visual appeal. Logically, we anticipate the opposite effect for amateur aesthetics. Yet, in combination with order effects, expectations become more complicated, because both primacy and recency effects have been found in prior research. Thus, this final study is exploratory in nature, and given that we found consistently positive effects of professional aesthetics in the preceding studies, we suspect that the position of professional aesthetics within the mix should particularly matter for mitigating negative effects from amateur aesthetics.

Stimuli

We developed new stimuli for this study, adding further ecological validity to this study series. Similar to the pilot study, we randomly chose a hotel from the list of Edinburgh hotels on TripAdvisor that scored four stars and above. For the chosen hotel, we selected 16 photos with professional and 16 photos with amateur aesthetics. In each set of photos, we included four photos of each category of bedrooms, bathrooms, restaurant/bar, and reception/hall. We conducted a pretest with 46 participants (58.7% female, $M_{Age} = 39.96$, $SD = 13.48$), which confirmed that the photo sets were each representative of the respective aesthetics type ($M_{Prof} = 6.58$, $SD = .71$ vs. $M_{Ama} = 3.77$, $SD = 1.8$, $t = -7.166$, $p < .001$).

Participants, procedure, and measures

A total of 239 respondents participated in this study (55.6% female, $M_{Age} = 37.28$, $SD = 11.12$). Following the same criteria checks as in the previous studies, participants were randomly allocated into one of the four conditions of this 2 Order (professional first vs. amateur first) \times 2 Quantity (greater number of professional vs. greater number of amateur) between-subjects design. As in the previous studies, participants were asked to imagine they were looking at hotels online to stay in during a vacation to Edinburgh. They were then shown 20 photos of a hotel, the mix dependent on the condition they were assigned to. To illustrate more specifically, in the condition amateur first/greater number of amateur, participants were first exposed to 16 amateur photos, containing four from each category in the order of bedrooms, bathrooms, restaurant/bar, and reception/hall. These were followed by four professional photos, containing one photo randomly selected from each respective category, following the same order of categories as did the amateur photos. Each photo shown was marked as taken by a guest or the hotel's marketing team, respectively. This mix of photos was adapted for each experimental condition accordingly. Irrespective of the

condition, participants were shown one photo per page and could click through them freely, similar to the TripAdvisor platform. They were then presented with the manipulation check question, the attention check question, the dependent and control variables. The measures were the same as in Study 3 except for the manipulation check question. Here, participants were asked when thinking about all the photos they viewed as a whole, to what extent they perceived them as amateur or professional on a one-item, 7-point scale (1 = All are amateur, 4 = About half are amateur/half professional, 7 = All are professional).

Results and discussion

A two-way ANOVA, including order, supported the quantity manipulation. Results showed that irrespective of order, a stimulus set with a greater number of amateur photos was viewed as more amateur and a set with a greater number of professional photos as more professional ($M_{Ama-first/greater-Ama} = 3.76, SE = .15$ vs. $M_{Ama-first/greater-Prof} = 5.26, SE = .15, p < .001$; $M_{Prof-first/greater-Prof} = 5.44, SE = .15$, vs. $M_{Prof-first/greater-Ama} = 3.94, SE = .16, p < .001$).

To test the effect of mixed aesthetics in different combinations on visual appeal, we conducted a two-way ANCOVA, including gender, age, vacation frequency and time elapsed since last vacation as covariates. Levene's test of equality was violated; again, we proceeded with caution as in the previous studies⁴. No significant main effects were found ($ps > .05$). Importantly, the interaction effect of quantity and order was significant ($F(1,229) = 4.93, p = .027, \eta^2 = .02$). Particularly, participants in the amateur first/greater number of amateur condition perceived the hotel as least visually appealing compared to participants who were exposed to amateur first/greater number of professional and to professional first/greater number of professional ($M_{Ama-first/greater-Ama} = 2.35, SE = .15$ vs. $M_{Ama-first/greater-Prof} = 1.92, SE = .14$ vs. $M_{Prof-first/greater-Prof} = 1.85, SE = .14$, all $ps < .05$). Furthermore, there was no

significant difference when professional photos were presented first with a greater number of amateur photos following ($M_{Prof-first/greater-Ama} = 2.07$, $SE = .15$, all $ps > .28$).

To test the mediating effect of visual appeal on booking intentions when participants were exposed to more or fewer professional or amateur photos in different orders, we carried out a moderated mediation test. This included quantity as the independent variable and order as the moderator for both path a and c . The overall moderated mediation was significant ($Eff = -.513$, $SE = .26$, $LCI = -1.08$, $UCI = -.045$); however, it is important to note that the moderator was only significant on path a ($p = .027$) but not path c ($p = .313$). This supports visual appeal to provide full mediation.

This study shows that mixed photo aesthetics contribute to the hotel being evaluated as more visually appealing when a greater number of professional photos were shown, even when amateur photos were shown first. However, if a greater number of amateur photos were shown first followed by fewer professional photos, participants rated the hotel to be less visually appealing. Although differences were non-significant, the inclusion of professional photos in the beginning of a list of photos slightly mitigated the negative effects of a greater number of amateur photos following. Furthermore and supporting the results of the previous studies, the more visually appealing participants viewed the hotel, the greater was their booking intent.

Table 1 summarizes all means for visual appeal from all studies.

---INSERT TABLE 1 HERE---

Discussion

The goal of this study was to test the effect of two types of photograph aesthetics, professional and amateur, when presenting a destination through management- or traveler-generated photos on review sites. Across four experimental studies, we demonstrated that professional aesthetics generally increased the visual appeal of hotels, which in turn affected booking intentions positively. The negative effect of amateur aesthetics could only be mitigated under some circumstances. Specifically, when participants were primed to be high in risk aversion, amateur aesthetics were viewed more favorably than when participants were low in risk aversion, while visual appeal was still higher for participants exposed to professional aesthetics. Furthermore, when the review was positive, participants viewed hotels as visually appealing in the amateur as in the professional condition. Testing the effect of mixed photos, we demonstrated that the general positive impact of professional aesthetics was again supported: Participants viewed hotels as more visually appealing when exposed to professional aesthetics in contrast to amateur aesthetics or a mix of both. We followed up on the potential effects of mixed aesthetics and showed that the presence of professional aesthetics in the mix outweighed the negative effect of amateur aesthetics, either when professional aesthetics were presented first or when a greater number of photos with professional than photos with amateur aesthetics were presented. Visual appeal was only affected negatively when the number of photos with amateur aesthetics was greater than with professional aesthetics and amateur aesthetics were presented first. Overall, these results emphasize the importance of different types of photo aesthetics that tourists are exposed to on social media platforms during their information search stage, since favorable, in this case professional, aesthetics can drive booking intentions positively. Our findings hold important theoretical contributions and managerial implications.

Theoretical contributions

The contributions of our research are three-fold. First, the study series supports the traditional view held by managers that professional aesthetics yield a more favorable consumer response (Lohse and Rosen 2001; Lombard and Snyder-Duch 2001), even in the context of social media where one would intuitively expect user-generated content to be ‘king’. Subsequently, our research suggests that for tourists the formal, more objective, attributes (e.g. focality, color, contrast) are most influential in determining not just aesthetic preference towards the photograph itself (MacKay and Fesenmaier 1997; Ulrich 1983) but importantly, also towards the represented destination. Thus, the arguably subjective value in amateur aesthetics (e.g., humanity in ‘messy’ beauty) seems to be rather lost or indeed secondary at best. Further, we show that the effect of a mix of both types of aesthetics on visual appeal occupy the center ground between professional and amateur aesthetics in isolation. Thus, tourists appear to aggregate visual appeal perceptions of the destination across the different stimuli they are exposed to, rather than summate objective and subjective appeal potentially internalized in both aesthetic forms. In addition, we found visual appeal to have a prominent mediating effect on booking intentions throughout our studies. This result extends beyond existing studies in that it shows the relevance of visual appeal in contexts that are not firm-controlled but where user-generated content is dominant.

Second, we provide evidence on boundary conditions to the negative effect of amateur aesthetics, supporting the notion that beauty may be in the eye of the beholder under some circumstances. In Study 1, we show that the negative effect of amateur aesthetics is mitigated for individuals who are highly risk averse. These results tentatively suggest that amateur aesthetics may be seen as more authentic representations, providing some assertion to highly risk-averse individuals that the actual product, in this case the hotel, may not be too dissimilar to what is being displayed. This supports findings by Casaló et al. (2015) who

showed that a photo added to a review increased review usefulness, especially for risk-averse tourists. However, as the positive effect of professional aesthetics still held for highly risk-averse participants, we exert some caution in the interpretation of these results.

In Study 2, we show that the negative effect of amateur aesthetics cannot only be mitigated but that a hotel's visual appeal is as high in the amateur as in the professional aesthetics condition when accompanied by a positive review. Further, the negative amateur aesthetics effect is even exacerbated when accompanied by a negative review. These results further our understanding of the extent to which user-generated content should be encouraged by destination managers. While tourists may view amateur photos with 'rose-tinted glasses' when accompanied by a positive review, our results support previous argumentations that urge caution in encouraging visibility of tourism experiences through social media (So et al. 2018).

Third, we contribute with knowledge about the effects of mixed aesthetics, where both amateur and professional aesthetics are present, arguably the most common exposure during tourists' information search. Study 4 adds to this understanding by exploring effects of order and quantity within mixed aesthetics: Even if amateur photos are presented, their negative effect on visual appeal may be mitigated if a greater number of professional than amateur photos are presented or when professional photos appear first. We are cautious about interpreting these results as contributions to debates on primacy/recency effects; although the negative effect of many photos with amateur aesthetics on visual appeal was attenuated when professional photos were presented first, this difference was not statistically significant. However, given that online photos may appear in all the combinations we investigated, we suggest the need to consider order in conjunction with quantity in future studies.

Implications for tourism managers

Our results overall suggest that tourism managers should invest in professional aesthetics of photos to be used for social media, such as review websites, to drive booking intentions and eventually sales. Naturally, many tourism providers, especially those with more generous marketing budgets, do already invest in such professional photography. However, the authors of this paper were, in the course of this investigation, surprised about the number of hotels (in particular, assumedly privately-owned hotels), which were searched in Edinburgh, that had not published professional photos on their TripAdvisor pages, leaving it to tourists alone to depict their hotels. Providing photos with professional aesthetics may be one way to significantly increase booking intentions. In addition, managers can encourage visitors to take and post more appealing photos. First, hotels may mark spots where photos can be taken to show the room in the best light. Such provision is likely to be seen favorably by tourists who want to take idealized photos. Second, hotel managers may wish to set time aside for staff to take high quality photos of visitors, which will be emailed to them after their visit, with a prompt to post them onto social media. Third, visitors could be prompted to take photos of the room when it is tidy, when they first enter the room. For example, a card could be placed on the bed welcoming them to the room asking them to take a photo as the room had been made beautifully for them.

Furthermore, our last study specifically suggests that providing a greater number of professional than amateur photos can mitigate any negative effects from amateur aesthetics. However, too many professional photos may be potentially counter-effective, given that frequent exposure may lead to perceptions of redundancy and eventually boredom (see Schmidt and Eisend 2015). Adequate market research with target tourists may mitigate the risk of boring tourists with too many glossy pictures of the same object, such as a hotel. Furthermore, managers should also endeavor to direct potential tourists to professional

photos first, although user-navigation is largely in the hands of user-experience designers of the social media technologies themselves. We propose great meticulous consideration is given to the main photograph, that is, the one that appears as the preview of the hotel – which in the case of TripAdvisor will draw tourists to view professional before amateur photos (shown to be advantageous by our research). In addition, hotel websites arguably would benefit from promoting visitor images from Instagram rather than from TripAdvisor, as beautiful imagery is the *raison d'être* on this social media platform.

Limitations and future research

We appreciate that our study series does not paint a rosy picture of amateur aesthetics within tourist decision-making, and it is not our intent to make the broad accusation that user-generated photos are bad for tourist providers. Our study is limited to our attention to visual appeal, although this construct is a natural choice given it is inextricably linked to the notion of aesthetics. However, future research is needed to understand potential factors that may explain positive effects of amateur aesthetics on booking intentions. For instance, given that risk and uncertainty play important roles in tourists' decision-making processes (Karl 2018), we suggest future research to investigate to what extent amateur aesthetics in a mix with professional aesthetics may reduce perceptions of risk while still increasing visual appeal of an offering to positively drive visitation intent. In a similar vein, we propose future research to focus on authenticity and examining aesthetics when the tourists are primarily motivated by seeking an authentic tourism experience, for example, 'off-the-beaten track' experiences (see Chhabra 2005). In addition, destination trust should be examined. It may be possible that, in the light of marketing cynicism, trust may increase more with viewing amateur aesthetics, which may in turn mediate effects on visitation intent (see Gregori, Daniele, and Altinay 2014). Furthermore, our study did not control for destination familiarity. Although

we are certain of our conclusions due to the replicability of core effects shown in this study series, future studies should control the familiarity participants have with destinations. Our research is further limited by the violation of the assumption of equal variance, although we performed non-parametric tests to support our core results.

Our research is limited due to the laboratory nature of the experimental designs. Although we took measures to increase ecological validity through using real life photos taken from TripAdvisor, tourist decision-making is not as linear as portrayed in our designs. Future research should observe and eye-track consumers viewing sites such as TripAdvisor when choosing a hotel to understand better the nuances in the order and quantity amateur and professional photos are viewed, and when viewing other information such as written reviews and textual descriptions provided by managers. Moreover, our studies focus on leisure travel and therefore rather tourism hedonic in nature. Further studies could therefore examine the importance of aesthetics in the context of business travels, where utility, amongst other factors, has been found as more important, and thus ‘what is beautiful’ may not be booked (Kashyap and Bojanic 2000). Additionally, in our study we examined photos from review sites where tourist-generated photos were indeed of amateur, lower quality compared to photos taken by the hotel management. However, one should exert some caution in generalizing across different social media platforms, and professional-looking tourist-generated photography may even be found on some review sites. Considering social media platforms such as Instagram, where attractive visuals are the platform’s currency, tourists do produce photos with a high level of professional aesthetics, exerting influence over their followers. One cautious explanation for different quality of tourist photos may be differences between social media platforms in uses, motives, and audience expectations (e.g., Erz, Marder, and Osadchaya 2018). Future studies could therefore investigate effects of professional-looking amateur photos across platforms on visual appeal and tourist behavior.

Lastly, our sample was made up of U.S. adults with an average age of 35 years. Therefore, potential cultural differences or age differences may exist, to which further attention should be given to examine the generalizability of our results. Lastly, both researchers and managers should be not short-sighted to assume all professional photos are beautiful, and it was not in the scope of this research to manipulate and test single factors that make up professional photography aesthetics (e.g., symmetry, color etc.). We propose further research to investigate these factors more in-depth.

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Table 1.

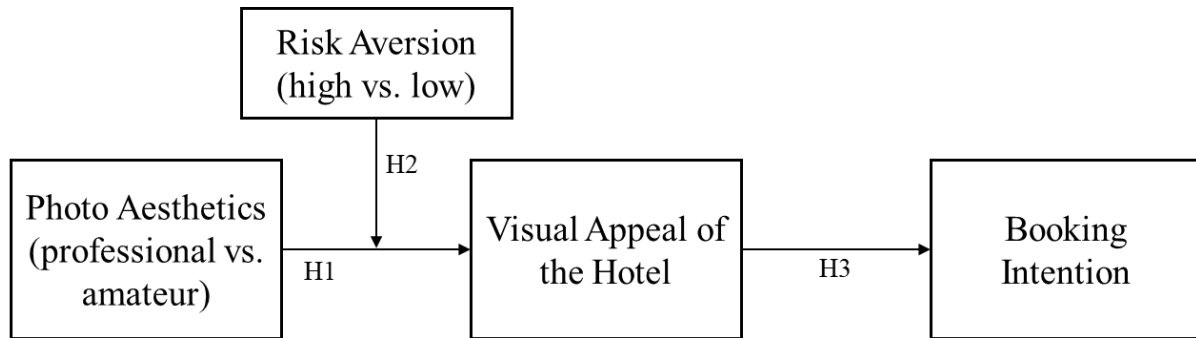
Means and standard errors for visual appeal in Studies 1 through 4.

	Means (Standard Errors)		
	Professional aesthetics	Amateur aesthetics	Mixed
Study 1			
High risk aversion	M = 1.56 (SE = .10)	M = 2.32 (SE = .11)	n.a.
Low risk aversion	M = 1.61 (SE = .10)	M = 2.80 (SE = .10)	n.a.
Study 2			
Positive review valence	M = 1.70 (SE = .16)	M = 2.05 (SE = .16)	n.a.
Negative review valence	M = 2.15 (SE = .17)	M = 3.29 (SE = .16)	n.a.
Study 3	M = 1.65 (SE = .08)	M = 2.48 (SE = .08)	M = 2.03 (SE = .08)
Study 4			
	Greater number of professional photos	Greater number of amateur photos	
Amateur first	M = 1.92, SE = .14	M = 2.35, SE = .15	n.a.
Professional first	M = 1.85, SE = .14	M = 2.07, SE = .15	n.a.

Note. Means provided are results of LSD post-hoc tests and are evaluated accounting for covariates.

Figure 1.

Conceptual framework and hypotheses of Study 1.



Endnotes

¹Supplementary Mann-Whitney tests were employed to ensure we did not falsely reject the null-hypothesis. The results support the main effects of photo aesthetics ($U = 257100.000$, $p < .001$) and risk aversion ($U = 19245.500$, $p = .004$) on visual appeal found in our parametric analysis.

²Supplementary Mann-Whitney tests were employed to ensure we did not falsely reject the null-hypothesis. The results support the main effects of photo aesthetics ($U = 11385.500$, $p < .001$) and review valence ($U = 367.500$, $p < .001$) on visual appeal found in our parametric analysis.

³A supplementary Kruskal-Wallis test was employed to ensure we did not falsely reject the null-hypothesis. The results support the main effects of photo aesthetics ($\chi^2(2) = 52.010$, $p < .001$) on visual appeal found in our parametric analysis.

⁴Supplementary Mann-Whitney tests were employed to ensure we did not falsely support the null-hypothesis. The results support the lack of significant main effects ($p > .05$) of quantity and order on visual appeal found in our parametric analysis.