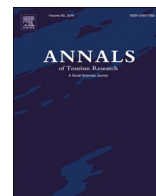


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# Hotspot crowding and over-tourism: Antecedents of destination attractiveness<sup>☆</sup>



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## ABSTRACT

This study develops a unique model capturing antecedents of place attractiveness in tourism hotspot crowding contexts. A structural equation model reveals three density dimensions: one destination image variable and two avoidance versus approach reactions that influence assessments of crowding attitude and destination appraisals. Perceived density dimensions affect destination appraisals with varying intensities and valences. Both positive and negative sentiments are present – the former as excitement, fun and conviviality resulting from people-watching and socialising, and the latter as discomfort and resentment resulting from personal space violations and reduced feelings of uniqueness. Many tourist types are included in this study in historic town centres and villages in iconic fjord landscapes in Norway. Cruise passengers are more crowding tolerant than self-organised travellers.

## Introduction

Crowding has been seen as both an indication of tourism destination popularity and fame (Petr, 2009) and a source of negative traveller reactions (Dowling, 2006; Jacobsen, 2000a; Krebs, Petr, & Surbled, 2007). This dilemma is at the core of the current research, aimed at investigating the extent to which people density and tourism place adaptations might influence visitor appraisals of hotspot destinations; celebrated places where quite a few holidaymakers might be delighted to be part of a congregation (cf. Popp, 2012).

While research has examined crowding related to outdoor recreation (e.g. Fleishman, Feitelson, & Salomon, 2004; Luque-Gil, Gomez-Moreno, & Pelaez-Fernandez, 2018; Vaske & Shelby, 2008; Zehrer & Raich, 2016) and shopping (e.g. Maeng, Tanner, & Soman, 2013; Mehta, 2013; Pons, Mourali, & Giroux, 2014), crowding in town and village tourism has largely been ignored (e.g. Neuts & Nijkamp, 2012). In some settings and for certain holidaymakers, high social density may create a stimulating atmosphere and arena for social interaction (Jacobsen, 2002; Kim, Lee, & Sirgy, 2016; Popp, 2012). However, quite a few tourists have been found to dislike crowded destinations and prefer either to avoid them (Jacobsen, 2000b; Jurado, Damian, & Fernández-Morales, 2013; Marušić, Horak, & Tomljenović, 2008) or to keep their distance from fellow travellers (Jacobsen, 2000a).

Impacts of crowding on appraisals and behaviour are complex, with studies showing mixed results (e.g. Li, Kim, & Lee, 2009; Mehta, 2013). Substantial research conducted in related contexts has shown that crowding can reduce people's satisfaction, attitude, and loyalty (see Luque-Gil et al., 2018). In retail settings, people density exceeding an optimal point can turn attitudes from positive

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to negative (Mehta, 2013), while identifying optimal crowding levels in town and village destinations seems difficult. In such settings, crowding assessments may vary considerably across visitor types, contexts, times, and territories (see Jurado et al., 2013; Maeng et al., 2013). As Neuts and Nijkamp (2012) argued, crowding studies should be conducted also in settings in which tourists have a range of norms and tolerances, and overall negativity to visitor density should not be taken for granted (Neuts, Nijkamp, & Leeuwen, 2012; Popp, 2012).

This article's main purpose was thus to advance studies on tourist perceptions of social density, assessments of crowding, and 'touristy' destination adaptations in settings characterised by visitors with presumably different density tolerances and a range of preferences (Papathanassis, 2012). To compensate for the dearth of research on small tourism hotspots, it was decided to scrutinise responses from various leisure travellers in four places in southwestern Norway, a region internationally famous for iconic fjord landscapes and historic town centres. The region has been dominated by itinerant holidaymakers (Dybedal, 2014), and some sites have received negative reactions to large cruise ship calls and 'over-tourism' in general. Such reactions have sparked increased attention to crowding issues where scores of cruise passengers go ashore at a time (see Marušić et al., 2008; Papathanassis & Beckmann, 2011; Weeden, Lester, & Thyne, 2011). The current study has thus tested a model to detect influences of various perceptions of 'touristy' destination adaptations and social density dimensions, operating indirectly through attitudinal crowding assessments or directly through destination appraisals.

## Literature review

Hotspots typically attract many 'site-seers' on brief calls, indicating that popularity may not always be desirable for local tourism livelihood (Petr, 2009) and overall destination appraisal (Fernández, González, & Lopez, 2016). Some travellers may even perceive certain complementary or secondary tourism service developments as (excessive) commercialisation (Ponting & McDonald, 2013) or as a 'tourist bubble' (Cohen, 1972). Moreover, touristy developments only for the sake of serving visitors may diminish or dominate what initially attracted tourists (Krippendorf, 1980). Further, surpassing commonly acceptable levels of touristy developments and visitor crowding can result in (dis-)confirmation of expectations, leading to dissatisfaction. It has thus been found important to address place appraisal (Neuts & Nijkamp, 2012) in order to understand how locales can achieve more socially sustainable tourism (Yagi & Pearce, 2007).

While cruise ship passengers, after a few days *en route*, may be used to crowding, this might not be the case for other holidaymakers arriving in the same places. Several iconic hotspots may be visited also by tourists wishing to experience idiosyncratic landscapes without the presence of (many) other visitors (Jacobsen, 2004), indicating a 'romantic gaze' (Urry, 1990). Such tourists may react negatively when they arrive in celebrated places only to find large numbers of fellow travellers.

Some studies have addressed how tourists may dislike, accept, or appreciate other tourists and locals (Dowling, 2006; Jurado et al., 2013; Marušić et al., 2008). Quite a few holidaymakers resent too many fellow travellers arriving in the same places (Jacobsen, 2000a), and some people in socially congested environments want to stand out from the crowd (Bresson & Logossah, 2011). While certain tourists believe that the possibility of enjoying a unique experience is inversely proportional to the number of visitors (Jacobsen, 2000a), others want to socialise with fellow vacationers (Urry, 1990). Additionally, people-watching can be valued (Jacobsen, 2002) and contribute positively to destination appraisals (Neuts & Nijkamp, 2012).

### *Perceived social density and assessed crowding*

Personal space has been defined as a small protective zone that humans maintain between themselves and others (Hall, 1966). When someone encroaches on that space, the human defence system may react with fear and anxiety (McNaughton & Corr, 2004). Therefore, crowds may trigger anxiety, high arousal, a diminished sense of personal control, reduced pleasure, and other avoidance responses (Andereck, 1997; Consiglio, Angelis, & Costabile, 2018; Maeng et al., 2013).

*Density* refers to a "psychological state characterised by stress and having motivational properties" (Bell, Fisher, Baum, & Greene, 1990, p. 304). Motivational properties can activate thoughts and behavioural reactions that help individuals achieve some desired end states (Maeng et al., 2013). Perceived social density refers to the estimated number of people in a place and the stress associated with violations of personal space (Hall, 1966). It is therefore likely a crucial antecedent for affective (positively or negatively valenced) crowding experiences (Stokols, 1972). Balancing stress from social stimulation can involve activation of negative avoidance or positive approach reactions. Thus, crowding may signify assessments evoked by area density (Bell et al., 1990; Lee & Graefe, 2003).

*Assessed crowding* has typically been comprehended as both perceived social density and as physical density in relation to desired or accepted levels (Rapoport, 1975). Accordingly, crowding is an evaluative attitudinal construct, and intensive crowding can be predictably accompanied by negative evaluations. Choi, Mirjafari, and Weaver (1976) identified a cognitive and a cognitive-affective state, reflecting a negative and positive valence resulting from social density. This may be partly related to different stimulation and arousal thresholds (Zuckerman, 1979). Stressful mental stimulations can thus sway crowding judgements and can occur when personal thresholds are crossed (Neuts & Nijkamp, 2012; Popp, 2012; Stokols, 1972); creating stimuli overload (Schmidt & Keating, 1979).

Dense environments may activate the neuropsychological avoidance system, resulting in more avoidance-focused mindsets (Maeng et al., 2013). Moreover, violations of personal space typically can activate amygdala, the brain region governing social approach and/or avoidance reactions (Kennedy, Gläscher, Tyszka, & Adolphs, 2009). Thus, negative response from crowding and from violations of personal space may lead to *avoidance reactions*, such as worry, feelings of being unsafe in crowds, aversion to noise,

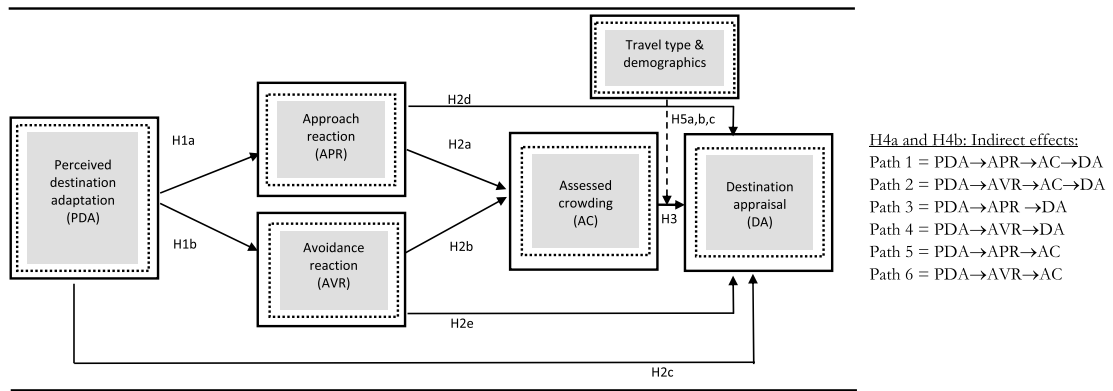


Fig. 1. Conceptual research model.

and aversion to what might be considered improper behaviour of fellow visitors. This response may prompt physical and mental withdrawal from a place via coping mechanisms and thereby stimulate place judgements. Coping strategies have been suggested to encompass all behaviour used to protect one from harm in distressing situations (Pearlin & Schooler, 1978).

### Conceptual research model and hypotheses

Fig. 1 depicts the conceptual model. It was hypothesised that avoidance versus approach reactions eliciting variances in crowding assessment would mediate the relationship between perceived destination adaptation and appraisal of tourism hotspots.

The model identifies a relationship between perceptions of touristy destination adaptations and perceived social density interpreted as high people concentrations. Both perceived destination adaptations and perceived social density may evoke avoidance and/or approach reactions, influencing visitors' crowding attitude assessments and, subsequently, their destination appraisals. The model's main assumption is that crowding attitude assessments shape visitors' appraisals of hotspot destinations.

#### Approach and avoidance reactions

Perceived destination adaptation and perceived social density are mental states of stimuli that may evoke avoidance and/or approach mindsets, leading to emotional and behavioural reactions (Maeng et al., 2013). Degrees of evoked valence or pleasure versus displeasure will fall along a continuum. Attitude appraisals thus influence social and normative states and behaviours, in that favourable attitudes typically lead to *approach reactions* and unfavourable ones to *avoidance reactions* (Wicker, 1969).

High social density can be unpleasant because it can evoke stress reactions that overwhelm the senses. The premise of stimulus-overload theory is that the number, density, and heterogeneity of other people can expose visitors to excessive levels of psychic stress (Schmidt & Keating, 1979). According to this theory, negative outcomes (*avoidance reactions*) occur when the amount and rate of stimulation caused by social density exceed people's tolerance ability (Bell et al., 1990). Overload may occur when there are too many unwanted and uncontrolled interactions and unfamiliar or inappropriate social contacts. As people commonly experience more stimuli than they can handle, they may feel a loss of control and, in response, try to adapt to overly stimulating states. If successful, they can lessen the negative effects of density-induced stress (Lee & Graefe, 2003); if unsuccessful, however, negative crowding will be experienced (Schmidt & Keating, 1979).

Accordingly, approach and avoidance dimensions can serve as a framework for coping strategies that visitors use to reduce stimuli overload, stress, and perceived risk from social density. Stimuli overload can affect visitors' cognitive and affective associations of a destination and, consequently, their assessed attitudes towards crowding (e.g. Lee & Graefe, 2003). Thus;

**H1a/b.** High (low) perceived social density in minor tourism hotspots creates avoidance (approach) reactions.

**H2a/b.** High avoidance (approach) reactions evoked by perceived social density raise unfavourable (favourable) crowding assessments in minor tourism hotspots.

#### Impacts of perceived touristy adaptations and assessed crowding on destination appraisals

Crowding expectations have been seen as facets of destination images. Violations of optimal crowding levels can result from (dis-)confirmation of expectations. In line with expectancy theory, it could be argued that tourists have expectations of destination service delivery systems (Coye, 2004), and such beliefs may influence satisfaction and assessment of overall experience and service quality. Such expectations and evaluations are beliefs about future events, which, when compared with the perceived service delivered, are likely to influence satisfaction and assessment of overall experience and service quality. Along similar lines, Oliver (1993) introduced an expectancy-disconfirmation model, indicating that people use comparative standards to assess satisfaction with, for example,

expected destination features (e.g. touristy adaptations). According to expectancy-disconfirmation theory, actual experiences of place features must match prior destination perceptions to generate satisfaction (Zehrer, Crotts, & Magnini, 2011). Unexpected destination adaptations to accommodate certain visitor segments (e.g. cruise passengers, bus group travellers) might create mis-matches with prior beliefs and expectations (particularly among individual travellers), resulting in disconfirmation (e.g. Ponting & McDonald, 2013). More specifically, destination features are assessed in situ on the basis of assumptions preceding the visit (Cohen, 1972)—in this case, pristine fjord landscapes and well-preserved historic town centres. When the comparison outcome deviates from prior beliefs, the likely outcome is an unfavourable destination appraisal. Thus:

**H2c.** High perceived adaptation of destination features to large-scale tourism decreases destination appraisal in minor tourism hotspots.

Aroused approach and avoidance reactions may bolster or undermine destination appraisals directly and not solely through crowding assessments. This is likely to occur when these emotional responses are triggered by judgements of place feature modifications (Kim et al., 2016; Maeng et al., 2013). Direct effects of approach and avoidance reactions on destination appraisal likely rest on whether a range of unique place features deliver experience outcomes as expected. Thus, at minor tourism hotspots, extensive destination adaptations can evoke approach and avoidance reactions that can lead to confirmation or disconfirmation of prior place beliefs (e.g. Zehrer et al., 2011). When place features deviate from prior beliefs, satisfaction can suffer, and the likely outcome is an unfavourable destination appraisal. Thus:

**H2d/e.** High avoidance (approach) reactions evoked by perceived adaptations of destination features to large-scale tourism raise unfavourable (favourable) destination appraisals in minor tourism hotspots.

Assessments of too much crowding can result from (dis-)confirmation of expectations of density and crowding. According to expectancy theory and the disconfirmation paradigm, evaluations of crowding extensiveness surface as comparisons between experienced crowding and prior beliefs (see Zehrer et al., 2011). Disconfirmation of crowding expectations is likely to be strong if most visitors who comprise a crowd belong to a social out-group. Negative outcomes may include poor experience atmospherics, loss of privacy, inferior service quality, or feelings of being cramped. Given such perceptions, and as a result of unfulfilled expectations, crowding may lead to avoidance behaviour (Eroglu & Machleit, 1990; Eroglu, Machleit, & Barr, 2005; Pons et al., 2014). Several studies have shown that increased crowding results in lowered expectations and decreased satisfaction (Jacobsen, 2000b; Luque-Gil et al., 2018; Neuts & Nijkamp, 2012; Zehrer & Raich, 2016). Accordingly, increased avoidance behaviour causing unfavourable crowding assessments likely reduces the pleasure of a destination experience and, as such, has a negative effect on destination appraisals. Thus:

**H3.** High (low) levels of assessed crowding decrease (increase) destination appraisal in minor tourism hotspots.

#### *Mediation effects*

As with any destination, travellers likely evaluate tourism hotspots on the basis of the perceived totality of their assets, through a *post hoc* appraisal of holistic or analytic place experiences (Echtner & Ritchie, 1993; Mannell & Iso-Ahola, 1987). At hotspots with large numbers of cruise passengers and many other visitors, some destination adaptations may activate the crowding route either positively (approach) or negatively (avoidance). Amounts of stimulated pleasure or displeasure from assessed crowding may depend on the extent of local tourism system development and visitor management (see Jurado et al., 2013). Inadequate destination management systems, too small (arrival) areas, insufficient infrastructure capacity (e.g. Papathanassis & Beckmann, 2011), inadequate queuing systems, and deficient local service delivery capacities, combined with poor management of visitor flows, may all result in impressions of overcrowding. Thus:

**H4a.** Touristy adaptations in minor tourism hotspots harm destination appraisals both directly and indirectly through negative assessments of place assets and crowding.

In minor hotspots where large cruise ships call, destination capacities and systems are likely to be restricted and the negative influence of avoidance reactions may be stronger than the positive influence of approach reactions. This might, for example, be due to excessive landscape/townscape alterations, poor area layout, and/or inopportune social mixing of visitors. Excessive or deficient tourism adaptations (e.g. numerous and congested touristy retail outlets and eateries, few toilets, poor queuing systems) will presumably be perceived as more bothersome in non-urban landscapes than in towns where alterations might be less visible. Yet, if vital structures are under-dimensioned, hotspots risk being judged as overcrowded. Thus:

**H4b.** Avoidance reactions evoked by perceptions of excessive touristy adaptations will be stronger than approach reactions in minor tourism hotspots.

#### *Moderators: gender, age, country of residence, and travel type*

Eroglu and Machleit (1990) found that under high-density conditions, men had higher crowding tolerance than women. Similarly, Eroglu et al. (2005) showed that in stores, women required more personal space and tolerated less crowding than men. However, Stokols (1972) argued that men will sense crowding more and will be affected more negatively, as they tend to defend their personal

space more than women. Since studies have shown disparate results related to gender, then a 0 hypothesis is presented. Thus:

**H5<sub>0</sub>**. Gender does not moderate the effects of assessed crowding on hotspot appraisal.

Prior research has found that age and gender can influence visitors' views on crowding (Eroglu et al., 2005; Fleishman et al., 2004; Zehrer & Raich, 2016). In a nature reserve, Fleishman et al. (2004) found that older people are less negatively affected by crowding than younger visitors. Likewise, Eroglu et al. (2005) maintained that in a retail context, older people generally required less physical space than younger people. However, Zehrer and Raich (2016) showed that both younger and older visitors perceived equally high levels of crowding in an outdoor setting.

**H5<sub>a</sub>**. Age moderates the effects of assessed crowding on hotspot appraisal, with older travellers being more accepting of high crowding levels than younger travellers.

Furthermore, visitors from some cultures may enjoy social assemblies and people density (i.e. contact cultures, such as European Mediterranean), while others will not (i.e. non-contact cultures, such as Northern Europe) (e.g. Hall, 1966; Pons, Laroche, & Murali, 2006). Thus:

**H5<sub>b</sub>**. Travellers from different countries vary in their assessments of crowding in minor tourism hotspots.

As argued in the theory section, passengers on large cruise ships may become accustomed to crowding where they go ashore. However, this might not be the case for other types of holidaymakers who arrive in the same places by different means of transport (Marušić et al., 2008). Thus:

**H5<sub>c</sub>**. Individual, self-organised travellers experience more crowding than cruise tourists in minor tourism hotspots.

## Research design

The survey was conducted *in situ* at four tourism hotspots in southwestern Norway. The region attracts substantial numbers of international cruise tourists and many other leisure travellers. Most international tourists here come from other European countries, including Germany, the Netherlands, France, Denmark, Sweden, and the United Kingdom (Dybedal, 2014). The sites were chosen because they are frequently visited by various holidaymakers and have experienced large cruise passenger growth since the 1990s (Dybedal, Farstad, Winther, & Landa-Mata, 2015). Two of the places, Flåm and Geiranger, are small settlements in sparsely populated but frequently visited iconic landscapes in Sognefjord and Geirangerfjord, included in UNESCO's World Heritage List. Both Flåm and Geiranger are frequently visited by large cruise ships and also by many leisure travellers using other means of transport. For comparison, two frequently visited historic town centres with many cruise ship calls were chosen: Stavanger and Bergen. Large and increasing inflows of cruise tourists have been contested in all study areas (Dybedal et al., 2015).

## Sample

A temporally stratified sampling procedure was used, varying survey days across weeks to reduce potential sampling bias (Rideng & Christensen, 2004) but still on days with cruise arrivals. Paper questionnaires in five language varieties were distributed by survey staff to available leisure travellers outdoors in the site centres mainly during the July peak season. Because of considerable time constraints, the questionnaire needed to be concise and very short to help avoid dropouts and missing values. In Bergen, the survey took place around the fish market and the lower Fløibanen funicular station, in Stavanger around Vågen bay's inner part towards the cathedral. However, rainy July weather in Bergen made supplementary data collection necessary there in August.

Potential respondents were approached as they came along or were near the survey staff. A screening question confirmed that respondents were leisure travellers. Some 1775 visitors were identified and asked to fill out the self-completion questionnaire. Of these, 424 declined to participate; moreover, 27 incomplete questionnaires were discarded. This left 1324 valid questionnaires, corresponding to 74.5% of those who were asked to take part.

Of the respondents, 17% were 30 years of age or younger, 37% were between the ages of 31 and 45 years, 29% were between the ages of 51 and 65 years, and approximately 17% were 66 years or older. The sample contained a nearly equal proportion of women (51%) and men (49%) (Table 1).

## Measures

The survey items were developed on the basis of a literature review and a few personal interviews. The measurement instrument was first formulated in English (with Germans and Scandinavians in mind) and then translated into Danish/Norwegian (adapted to Swedes), Dutch, German, and Spanish by multilingual social scientists who are native speakers of these languages. The questionnaires were not back-translated but all versions were slightly adjusted based on suggestions from the involved scientists. The instrument comprised three sections. Section 1 confirmed evaluations of perceived density and assessed crowding in these tourism hotspots. Section 2 explored perceptions of fellow travellers, social density and place adaptations to visitors. Section 3 listed types of travel arrangement (i.e. cruise, self-organised travel, or group tours) and requested respondents' age, gender, and country of residence.

Assessed crowding was measured using a 5-point Likert scale with the endpoints 'very crowded' (1) and 'not at all crowded' (5) (Neuts & Nijkamp, 2012). The single-item crowding scale has been argued to be easy to answer and has been used in > 181 outdoor

**Table 1**  
Sample distribution.

Country of residence:				Age:	
Europe	N (%)	Other countries	N (%)	N (%)	
Norway	170 (12.9)	United States	166 (12.6)	< 21	41 (3.3)
Other Scandinavia (SV, DK, FI)	117 (8.9)	Canada	14 (1.1)	21–30	171 (13.6)
United Kingdom	158 (12.0)	Mexico & Latin America	19 (1.4)	31–40	213 (16.9)
Germany	236 (17.9)	Australia & NZ	15 (1.1)	41–50	258 (20.5)
Netherlands & Belgium	101 (7.6)	China	15 (1.1)	51–65	359 (28.6)
Spain & Portugal	108 (8.2)	Asia & South East Asia	40 (3.0)	66–80	203 (16.1)
France	50 (3.8)	Africa	1 (0.1)	> 80	12 (1.0)
Italy	30 (2.3)				
Switzerland & Austria	46 (3.5)				
Other European countries	32 (2.4)				
Total:	N = 1318 (6 missing)			Total:	N = 1257 (67 missing)

Assessed crowding		Gender:		Cruise port:		Travel arrangement:	
	N (%)		N (%)		N (%)		N (%)
(1) 'Very crowded'	98 (7.6)	Female	655 (50.8)	Bergen	385 (29.1)	Cruise	574 (43.3)
(2)	404 (31.4)	Male	635 (49.2)	Stavanger	348 (26.3)	Self-organised	675 (51)
(3) Neither agree/disagree	308 (23.9)			Flåm	295 (22.3)	Group tour	75 (5.7)
(4)	359 (27.9)			Geiranger	296 (22.4)		
(5) 'Not at all crowded'	119 (9.2)						
Total:	N = 1288 (36 missing)		Total: N = 1290 (34 missing)	Total	1324 (100)	Total	1324 (100)

recreation studies (Vaske & Shelby, 2008). Using single-items indicators to represent a construct has both pros and cons (Petrescu, 2013). Arguments for single-items include (1) shorter questionnaires, (2) higher response rates, and (3) no common method bias (Bergkvist & Rossiter, 2007). The negative aspect of single items is that the measure may exclude some important dimensions of the latent construct in question. Therefore, it is a weakness in construct dimensionality related to single item measures. Yet, a single item measures accurately the dimension formulated in the wording of the question. It is, thus, valid in terms of this dimension. Accordingly, the well-established single item measuring assessed crowding was used (see distribution of responses in Table 1). Place appraisal was measured with two items capturing expectations and recommendations (Neuts & Nijkamp, 2012).

Approach reaction (six items) and avoidance reaction (five items) variables came from Carver and White (1994), Higgins, Roney, Crowe, and Hymes (1994), Jacobsen (2002) (items 5 and 10), Neuts and Nijkamp (2012) (items 8 and 15), Maeng et al. (2013), and Urry (1990) (items 6 and 10). Generally, approach reaction has been related to 'a collective gaze' (Urry, 1990). Destination adaptation perceptions (four items) were developed on the basis of the personal interviews, inspired by Krippendorf (1980), Jacobsen (2004) and Urry (1990), and partly related to 'a romantic attitude'—that is, a preference for landscapes/places with few other tourists (items 2 and 4). Item 1 was inspired by Krippendorf (1980), item 3 was informed by Pearce (1982, p. 32) and Cohen (1972), that is, 'traveller' interest in otherness and local characteristics (Table 2).

## Descriptive statistics

Table 2 reports descriptive statistics of the study variables, including minimum and maximum levels of each measured construct. It also shows means and standard deviation (SD) values, sample size ( $N = 1324$ ), and measures of skewness and kurtosis. Descriptive statistics show that the standard deviations were reasonably high for all study variables, all being  $> 0$  ( $SD = 0.85$ – $1.28$ ), suggesting enough data variation to discriminate among respondents. Distributional aspects are captured in skewness and kurtosis, which indicated no serious distributional problems (skewness  $\leq 1.12$ ; kurtosis  $\leq 1.25$ ) as the sample was large ( $N > 500$ ) (Sharma, Durvasula, & Dillon, 1989).

## Data analysis

To test the model, structural equation modelling (SEM, using Mplus 7) was conducted. Exploratory factor analysis (EFA) was first performed, then confirmatory factor analysis (CFA) was conducted, and, finally, a measurement model was developed. This tested identified relationships among destination adaptation, avoidance, and approach items depending on assessed crowding and destination appraisals. Last, a series of one-way analyses of variance (ANOVAs) was executed to differentiate factors in terms of demographics and travel arrangement types.



**Table 2**  
Study measures, means, and standard deviations of survey items.

Variables	Min	Max	Mean	SD	N	Skewness	Kurtosis
Perceived destination adaptation (Cohen, 1972; Jacobsen, 2004; Krippendorff, 1980; Pearce, 1982; Urry, 1990)							
1. I feel that this place is only adapted to tourists.	1	5	3.09	1.19	1302	0.16	−0.77
2. I prefer to experience places like this without too many visitors.	1	5	2.68	1.21	1309	0.31	−0.70
3. I miss the presence of locals here.	1	5	2.73	1.12	1309	0.25	−0.41
4. This place is only for tourist groups.	1	5	3.39	1.22	1305	−0.23	−0.86
Approach reactions (Carver & White, 1994; Higgins et al., 1994; Jacobsen, 2002; Maeng et al., 2013; Urry, 1990)							
5. I like to watch the many different people here.	1	5	2.32	1.11	1308	0.50	−0.44
6. I like to speak with other tourists here.	1	5	2.85	1.18	1307	0.14	−0.68
7. I enjoy that there are many tourists here from my home country.	1	5	2.97	1.15	1305	0.09	−0.50
8. Tourists from other parts of the world enrich this destination.	1	5	2.20	0.98	1310	0.44	−0.31
9. The many cruise tourists here do not bother me.	1	5	2.56	1.28	1304	0.31	−0.93
10. This place is more enjoyable because of the many tourists.	1	5	2.99	1.15	1311	−0.03	−0.63
Avoidance reactions (Carver & White, 1994; Higgins et al., 1994; Maeng et al., 2013)							
11. I am worried about many people here getting close to me.	1	5	3.93	1.16	1313	−0.63	−0.82
12. I do not feel safe here because of the crowding.	1	5	4.04	1.20	1316	−0.88	−0.48
13. Many tourists here do not behave properly.	1	5	3.75	1.13	1315	−0.39	−0.90
14. It is too noisy here because of the many visitors.	1	5	3.69	1.21	1315	−0.42	−0.94
15. Cultural conflicts in places like this are part of the travel experience.	1	5	3.17	1.27	1266	−0.00	−0.91
Assessed crowding (Vaske & Shelby, 2008)							
16. Please indicate whether you find this place crowded or not. <sup>a</sup>	1	5	2.99	1.13	1288	0.08	−0.95
Destination (expectation) appraisal (Neuts & Nijkamp, 2012; Oliver, 1993)							
17. This place lives up to my expectations.	1	5	1.76	0.85	1319	1.12	1.25
18. I will recommend a visit to this place to acquaintances and/or family.	1	5	2.39	0.90	1054	0.68	−0.70

Items are anchored by 'agree' (1) to 'disagree' (5).

<sup>a</sup> This item is anchored by 'very crowded' (1) to 'not at all crowded' (5).

#### EFA

An EFA was carried out (see Table 3) on a separate dataset from Bergen and Flåm ( $N = 625$ ) of only cruise passengers and tested for reliability (Nunnally & Bernstein, 1994). The destination adaptation (PDA), approach (APR), and avoidance reactions (AVR) constructs were subjected to Bartlett's test of sphericity (4498.204,  $p < 0.001$ ) and Kaiser–Meyer–Olkin statistics (0.88). The results suggested that the data were suitable for identifying factor dimensions. The total variance explained by PDA, APR, and AVR was 64.5%, and the reliability coefficients were 0.76, 0.91, and 0.78, respectively, all exceeding the minimum standard for reliability (Nunnally & Bernstein, 1994). However, one of the items (15) needed to be removed because of low factor loadings.

#### CFA

A CFA was carried out (see Table 3) on data from the four destinations using the robust maximum likelihood (RML) method (Anderson & Gerbing, 1988). The measurement model grouped the 17 items into five distinct factors. The CFA showed that all factors satisfied convergent validity criteria. All factor loadings were statistically significant ( $p < 0.001$ ). As the goodness-of-fit indices from the CFA indicate, the proposed measures fit the data well:  $\chi^2 = 287.837$ ,  $df = 110$ ,  $p < 0.01$ ; comparative fit index (CFI) = 0.91; Tucker–Lewis index (TLI) = 0.91; root mean square error of approximation (RMSEA) = 0.049. The overall fit indicators all exceeded the recommended levels (Jöreskog & Sörbom, 1993), signalling a good model.

According to Anderson and Gerbing (1988), significant scores in the chi-square test are a problem in SEM when the sample is large. Thus, most studies typically apply a series of incremental fit indicators as a substitute for the chi-square test.

To assess the extent to which observed items adequately represented each construct, the measurement model was tested for convergent validity and discriminant validity (Bollen & Lennox, 1991). As Table 3 shows, the CFA results proved convergent validity as all average variances extracted (AVEs) were equal to or higher than the recommended value of 0.45 (Bollen & Lennox, 1991), and the estimated loadings for all indicators were significant ( $p < 0.001$ ) (Anderson & Gerbing, 1988). Moreover, all the AVE values were higher than the highest squared correlation with any other latent variable, indicating good discriminant validity on the construct level (see Table 4). Therefore, indicators used in this study were deemed to have good convergent and discriminant validity, paving the way for testing the structural model (Hair, Anderson, Tatham, & Black, 2009). Finally, the composite reliability (CR) of all constructs was also above the recommended value of 0.6, ranging from 0.80 to 0.83, suggesting reliability of the latent factors examined.

#### Structural equation model

The SEM analysis examined the relationships among the latent variables (Hair et al., 2009): destination adaptation (PDA),

**Table 3**  
Results of the EFA and CFA.

	Factor Loading1 (EFA)	Factor Loading2 (EFA)	Factor Loading3 (EFA)	Completely standardised loadings (CFA)	CR (CFA)	AVE (CFA)
Perceived destination adaptation		<b>11.5*</b>	<b>0.76**</b>		0.80	0.50
*1. I feel that this place is only adapted to tourists.	0.76	(-0.08)	(0.20)	0.79		
*2. I prefer to experience places like this without too many visitors.	0.66	(-0.04)	(0.08)	0.63		
*3. I miss the presence of locals here.	0.72	(-0.03)	(0.14)	0.61		
*4. This place is only for tourist groups.	0.83	(-0.11)	(0.12)	0.78		
Approach reactions		<b>33.5*</b>	<b>0.91**</b>		0.83	0.45
*5. I like to watch the many different people here.	(-0.10)	0.93	(-0.09)	0.75		
*6. I like to speak with other tourists here.	(-0.10)	0.87	(-0.06)	0.65		
*7. I enjoy that there are many tourists here from my home country.	(-0.07)	0.85	(-0.07)	0.64		
*8. Tourists from other parts of the world enrich this destination.	(-0.02)	0.69	(-0.04)	0.64		
*9. The many cruise tourists here do not bother me.	(-0.12)	0.83	(-0.08)	0.62		
*10. This place is more enjoyable because of the many tourists.	(0.00)	0.81	(-0.05)	0.70		
Avoidance reactions		<b>19.5*</b>	<b>0.78**</b>		0.82	0.53
*11. I am worried about many people getting close to me.	(0.15)	(-0.16)	0.88	0.80		
*12. I do not feel safe here because of the crowding.	(0.09)	(-0.09)	0.83	0.69		
*13. Many tourists here do not behave properly.	(0.10)	(-0.12)	0.82	0.67		
*14. It is too noisy here because of the many visitors.	(0.21)	(-0.15)	0.79	0.73		
*15. Cultural conflicts in places like this are part of the travel experience	(0.12)	(0.06)	0.19			
Total variance explained (destination adaptation, approach, and avoidance):		<b>64.5*</b>				
Assessed crowding						
*16. Please indicate whether you find this place crowded or not.				1.00	-	-
Destination expectation appraisal					0.72	0.56
*17. This place lives up to my expectations.				0.75		
*18. I will recommend a visit to this place.				0.74		

CFA: RMSEA = 0.049 [0.043–0.056]; Satorra-Bentler  $\chi^2 = 287.837$  (110) ( $p < 0.01$ ); CFI = 0.92; TLI = 0.91; SRMR = 0.05.

\* Variance explained (%)

\*\* Reliability coefficient

avoidance (AVR) and approach reactions (APR), crowding assessments (CA), and destination appraisals (DA). The results indicated that the measurement model fit the data well: Satorra-Bentler  $\chi^2 = 293.35$ ,  $df = 112$ ,  $p < 0.01$ ; CFI = 0.92; TLI = 0.91; RMSEA = 0.049; SRMR = 0.056. The incremental fit measures of this study all showed that the test measurements met the requirements of a well-fitting structural model (Table 5).

## RESULTS

### Direct effects

As Table 5 shows, the results indicated that mounting touristy adaptations of a destination towards large-scale tourism improved (vs. reduced) appraisals of that destination ( $\beta = 0.31$ ,  $p < 0.01$ ), which rejects H2c. It was, however, verified that high levels of assessed crowding lowered appraisals of hotspot destinations ( $\beta = -0.19$ ,  $p < 0.01$ ), in support of H3. Furthermore, overstated touristy adaptations of a destination reduced approach reactions ( $\beta = -0.42$ ,  $p < 0.01$ ), in support of H1b, and increased avoidance reactions ( $\beta = 0.41$ ,  $p < 0.01$ ), in support of H1a. It was also established that approach reactions influenced assessed crowding negatively ( $\beta = -0.12$ ,  $p < 0.01$ ), in support of H2a, while avoidance reactions influenced crowding positively ( $\beta = 0.26$ ,  $p < 0.01$ ), in support of H2b. Thus, approach reactions decreased assessed crowding, while avoidance reactions increased it. The negative valuation from increased avoidance was stronger than the positive valuation from increased approach.

**Table 4**  
Results of discriminant validity tests.

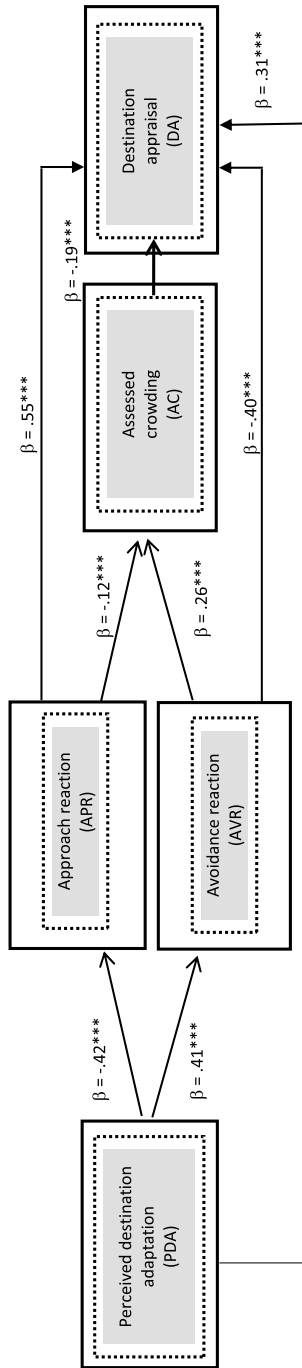
	F1	F2	F3	F4	F5
F1	<b>0.50</b>				
F2	0.166	<b>0.45</b>			
F3	0.155	0.063	<b>0.53</b>		
F4	0.054	0.032	0.086	-	
F5	0.013	0.295	0.203	0.119	<b>0.56</b>

Note 1: F1 = Perceived destination adaptation; F2 = Approach reaction; F3 = Avoidance reaction; F4 = Assessed crowding; F5 = Destination appraisal.

Note 2: The diagonal elements are the Average Variance Extracted (AVE) values. The off-diagonal elements are the squared correlation values.



**Table 5**  
Relational paths between destination adaptation and approach versus avoidance reactions on assessed destination crowding and appraisals.



Main model	Relational paths	Standardised β	Hypotheses validation
Perceived destination adaptation	→ Approach reaction	-0.42***	H1a → Supported
	→ Avoidance reaction	0.41***	H1b → Supported
Approach reaction	→ Destination appraisal	0.31***	H2c → Not supported
Avoidance reaction	→ Assessed crowding	-0.12***	H2a → Supported
Approach reaction	→ Assessed crowding	0.26***	H2b → Supported
Avoidance reaction	→ Destination appraisal	0.55***	H2d → Supported
Assessed crowding	→ Destination appraisal	-0.40***	H2e → Supported
	→ Destination appraisal	-0.19***	H3 → Supported

Fit indices \*\*\*  $p \leq 0.01$ . **RMSEA = 0.049** [0.043–0.056]; Satorra-Bentler  $\chi^2 = 293.35$  (112) ( $p < 0.01$ ); CFI = 0.92; TLI = 0.91; SRMR = 0.05.

Indirect models	Relational paths	Standardised β	Hypotheses validation
Total effect		-0.113 ns	
Total indirect effect		-0.424***	H4a → Supported
Perceived destination adaptation	Indirect paths 1–4		
	→ Approach reaction → Assessed crowding → Destination appraisal	-0.009**	
	→ Avoidance reaction → Assessed crowding → Destination appraisal	-0.020***	
	→ Approach reaction → Destination appraisal	-0.231***	
	→ Avoidance reaction → Destination appraisal	-0.164***	
	→ Destination appraisal	0.311***	
Total effect	Indirect paths 5 & 6	0.154***	H4b → Supported
Total indirect effect		0.154***	
Perceived destination adaptation	→ Approach reaction → Assessed crowding	0.049***	
	→ Avoidance reaction → Assessed crowding	0.105***	

Fit indices: \*\*\*  $p \leq 0.01$ . **RMSEA = 0.056** [0.049–0.062];  $\chi^2 = 341.01$  (112) ( $p < 0.01$ ); CFI = 0.92; TLI = 0.90; SRMR = 0.05

Finally, the results showed that approach reactions ( $\beta = 0.55, p < 0.01$ ) and avoidance reactions ( $\beta = -0.40, p < 0.01$ ) directly influenced appraisals of hotspot destinations with both positive and negative effects; thus, H2d/e were supported. This finding indicates that when scrutiny of unique place features trigger approach and avoidance as distinct responses, the evoked reactions can both directly reinforce and directly weaken destination appraisals. With the exception of H2c, these test results all confirm the proposed causal relationships in H1 to H3.

*Indirect effects*

All indirect effects in the conceptual model from DPA to DA were analysed. To test the mediation hypotheses, a new measurement model was estimated. The significance of the hypothesised mediated relationships was tested by applying Preacher and Hayes's (2008) bootstrap test (based on 10,000 re-samples) and with standard maximum likelihood (ML) as the estimation method (Table 5). Zhao, Lynch, and Chen (2010) proposed that, in this test, an indirect effect is significant and mediation is established if the 95% bootstrap confidence interval of the indirect effect does not include zero.

Table 5 displays the direct, indirect, and total effects of the new structural model. The global model fit measures were good ( $\chi^2 = 341.01, df = 112, p < 0.01$ ; CFI = 0.90; TLI = 0.90; RMSEA = 0.056; SRMR = 0.05). Yet there was a slight reduction in global fit ( $\Delta RMSEA = 0.007 [0.056-0.049]$ ) when the indirect paths were added. Use of bootstrapping (Preacher & Hayes, 2008; Zhao et al., 2010) creates a new normally distributed sample based on the original dataset and thereby change the sample distribution. Hence, the bootstrapping procedure modifies the patterns of the variation in the new sample and some nuances in variation disappears. Thus, the global fit estimate is altered (Preacher & Hayes, 2008).

The four indirect paths (Paths 1–4, see Fig. 1), from destination adaptation, through approach reaction and avoidance reaction, to assessed crowding (Paths 1 and 2), and then to destination appraisals, were tested. This partially mediated effect was negative. Although the total effect was not significant ( $\beta = -0.113, ns$ ), the total indirect effect was highly significant and negative. The positive direct effect from PDA to DA was the strongest ( $\beta = 0.311, p < 0.01$ ) individual effect. However, the 95% bootstrap intervals did not contain zero for Path 1 ( $\beta = -0.009, p < 0.05$ ), Path 2 ( $\beta = -0.020, p < 0.01$ ), Path 3 ( $\beta = 0.231, p < 0.01$ ), or Path 4 ( $\beta = -0.164, p < 0.01$ ). The reason the total effect was not significant is that the total direct effect, which is positive, cancelled out the total indirect effect, which was negative. Regardless, the total indirect effect indicates that all the indirect paths (Paths 1–4) were significant antecedents of DA, and the most powerful routes were Paths 3 and 4.

The two indirect paths (Paths 5 and 6, see Fig. 1) with assessed crowding as the dependent variable were also tested. The indirect effect from destination adaptation, through approach reaction, to assessed crowding was first estimated (Path 5:  $\beta = 0.049, p < 0.01$ ). Then, the indirect effect from destination adaptation, through avoidance reactions, to assessed crowding was estimated (Path 6:  $\beta = 0.105, p < 0.01$ ). The results show that the effect of Path 5 was less powerful than that of Path 6.

The observed direct and indirect effects indicate partial mediation from destination adaptation, through avoidance and approach

**Table 6**  
Results of independent sample ANOVA among gender, age, country of residence, and travel type.

Univariate test	P-value of Levene's test		F-ratio	p-Value	Total mean (crowding)	Mean
	Statistics	p-Value				
Gender						
Male	1.052	0.305	0.526	0.47 ns	3.00	3.02
Female						2.97
Age groups						
< 21	1.309	0.250	3.049	0.006***	3.00	3.20
21–30						3.24
31–40						2.98
41–50						3.02
51–65						2.86
66–80						2.94
> 80						3.58
Country of residence						
Norway	1.694	0.107	0.58	.773 ns	3.03	3.11
Other Scandinavia (SV, DK, FI)						3.07
United Kingdom						2.99
Netherlands & Belgium						3.13
France						2.88
Germany						2.98
Spain & Portugal						3.06
United States						2.97
Travel type:						
Cruise	3.518	0.030	5.695	0.003***	3.00	2.88
Self-organised						3.08
Group tour						3.18

(Paths 3 and 4), to assessed crowding (Paths 1 and 2), and then to destination appraisals. A comparison of the two indirect effects through crowding on destination appraisals (Paths 1 and 2) indicated that the route through avoidance reactions was the most powerful, in support of H4a. A comparison of the two indirect effects, excluding assessed crowding, on destination appraisals (Paths 3 and 4) indicated that the route through approach reactions was the most powerful. A comparison of the two indirect effects on assessed crowding (Paths 5 and 6) indicated that the route through avoidance reactions was the most powerful, in support of H4b.

A final test scrutinised the two indirect effects on assessed crowding in all the places. The significance for the indirect route through approach reactions (Path 5) was as follows: Stavanger ( $\beta = 0.024$ , *ns*), Geiranger ( $\beta = 0.11$ ,  $p < 0.01$ ), Flåm ( $\beta = 0.18$ ,  $p < 0.01$ ), and Bergen ( $\beta = 0.19$ ,  $p < 0.01$ ). A comparison of this route with the indirect route of avoidance reactions (Path 6) revealed the following: Stavanger ( $\beta = 0.21$ ,  $p < 0.01$ ), Geiranger ( $\beta = 0.26$ ,  $p < 0.01$ ), Flåm ( $\beta = 0.40$ ,  $p < 0.01$ ), and Bergen ( $\beta = 0.06$ , *ns*). The indirect effects across the study areas indicate that the path through avoidance reactions to assessed crowding was most powerful for Flåm, followed by Geiranger and Stavanger. Moreover, the path through approach reactions was most powerful for Bergen, followed by Flåm and Geiranger. Thus, travellers are more likely to approach Bergen from assessed levels of crowding and more likely to avoid Flåm, Geiranger, and Stavanger.

#### Test of moderators

Gender, age, country of residence, and travel type served as moderators (H5a/b/c). Several univariate ANOVAs on the relationships between crowding and the moderators were conducted (see Table 6). The first test revealed a non-significant moderation effect of gender ( $F(1, 1254) = 0.526$ ,  $p > 0.10$ ). The second test found a significant moderation effect of age ( $F(6, 1221) = 3.049$ ,  $p < 0.01$ ). Accordingly, assessments of crowding were found to differ between young and old visitors, which can drive destination appraisals. Older visitors were more tolerant of crowding, in support of H5a. The third test revealed a non-significant moderation effect of visitor provenance (eight countries with > 50 respondents) ( $F(7, 1076) = 0.58$ ,  $p > 0.10$ ); thus, H5b was rejected. The fourth test revealed a significant moderation effect of travel type ( $F(2, 1287) = 5.695$ ,  $p < 0.01$ ). In particular, this test revealed that assessments of crowding differed between self-organised travellers ( $M = 3.08$ ) and cruise passengers ( $M = 2.88$ ) but not (other) tour group participants ( $M = 3.18$ ). Self-organised tourists assessed more crowding than cruise travellers, in support of H5c.

#### Discussion

The purpose of this article was to investigate how perceptions of possibly excessive touristy destination adaptations and perceived social density may affect avoidance and/or approach reactions, influencing visitor assessments of crowding and, ultimately, shaping their appraisals of minor tourism hotspots.

It was expected that growing touristy adaptations would affect destination appraisals directly and negatively. However, the findings showed a positive direct effect of destination adaptations on destination appraisal. The results confirmed that destination adaptation reduced the amount of positive emotional reactions (avoidance) and increased the negative emotional reactions (avoidance) to social density. These sentiments subsequently influenced the destination appraisal and crowding assessment with positive and negative effects.

The indirect routes from destination adaptations, through avoidance and approach reactions, to destination appraisal were negative. Thus, approach reactions weakened the negative influence of crowding but not enough for the path to be all positive. The indirect effects running through avoidance reactions were negative in total, as destination adaptations increased avoidance, which subsequently decreased destination appraisals directly, as well as through increased crowding.

In summary, these indirect emotional processes seemed to take on all the negative aspects of large-scale tourism adaptations. Thus, the direct effect from adaptations to appraisals reflected the positive sides that visitors perceive with regard to touristy destination adaptations. Still, most negative sentiments towards severe place adaptations to large-scale tourism were channelled through avoidance and approach reactions.

Moreover, the study confirmed that approach and avoidance reactions to socially dense environments partially mediate crowding assessments. Avoidance reactions had a negative effect, meaning that increasing avoidance intensified assessed crowding as an unfavourable outcome of destination appraisals. However, approach reactions had a rewarding effect, meaning that increasing approach diminished assessed crowding in favour of destination appraisals. Still, the most powerful effect was the negative route: a penalising influence of avoidance reactions on assessed crowding and, thus, on lowered destination appraisals.

However, when the indirect effects of approach and avoidance were tested for each place, even more notable results appeared. In Stavanger, Flåm, and Geiranger, the indirect negative effect of avoidance on destination appraisal was stronger than the indirect positive effect of approach. In Bergen, the reverse occurred: visitors to this historic centre judged the level of crowding more positively than negatively. Therefore, it is plausible that the Bergen centre was on the rising side of the inverted U-shaped crowding curve, while Stavanger, Flåm, and Geiranger were on the descending side (Mehta, 2013). When exceeding its optimum point, crowding turns from positive to negative, and this turning point was surpassed by the three smallest destinations (Mehta, 2013, p. 645). Thus, it can be concluded that optimum turning points may vary across places.

The results also showed that the optimal turning point of hotspot crowding varied across visitor segments in terms of age and travel arrangement type, indicating diverse norms and tolerances, in line with Neuts and Nijkamp (2012). That is, self-organised tourists perceived hotspots as more overcrowded, revealing a lower acceptance of many visitors. Conversely, cruise passengers cared less about large visitor numbers, possibly because many of them were accustomed to crowds and because of a prevalent collective orientation (Jacobsen, 2002; Urry, 1990).

The relationship between touristy adaptations of small hotspot destinations and assessments of crowding seemed more complex. Critical factors may include landscape/townscape and terrain and available space where visitors arrive and/or walk around. In the small settlements of Flåm and Geiranger, visitor crowds are highly visible, as are certain touristy adaptations, contrasting Krippendorff's (1980) supposition that derived visitor offers should not overshadow what originally attracted tourists. Stavanger and Bergen can absorb many visitors, reducing overcrowding impressions, although certain adaptations and offers might be perceived as touristy.

Some findings confirmed previous research in terms of negative influence of social density on assessed crowding. Results indicated that many leisure travellers seek tranquil place experiences in accordance with a 'romantic gaze' (Jacobsen, 2004; Urry, 1990) and in line with retail research (Mehta, 2013), various leisure studies (Luque-Gil et al., 2018; Neuts & Nijkamp, 2012; Zehrer & Raich, 2016), and consumer research more generally (Maeng et al., 2013).

Remarkably, hotspot crowding did not evoke purely negative emotions; it also stimulated positively directed sentiments. Thus, density experiences can activate positive reactions, leading to increased valuation of a place related mostly to some vacationers' people interests, confirming a 'collective gaze' (Urry, 1990), especially among persons participating in organised tours. Other studies have arrived at similar results (e.g. Jacobsen, 2002; Kim et al., 2016; Popp, 2012). Thus, social density may be vital to the creation of a desired atmosphere for collectively oriented vacationers wanting to have fun (Podilchak, 1991). As such, both positive and negative sentiments could be present—the former as excitement, fun, and conviviality, the latter as discomfort and resentment caused by personal space violations and reduced feelings of uniqueness. However, as tourism to famous iconic places is partly related to prestige, quite a few vacationers might dislike fellow travellers taking selfies and 'ticking off' celebrated destinations to accumulate social capital (Gössling & Stavrinidi, 2016).

In conclusion, the evoked sentiments are shown to function as antecedents of (dis)confirmed expectations (Oliver, 1993) towards visitor numbers, driving satisfaction judgments of place features (e.g. Zehrer & Raich, 2016), and overall destination appraisals. The results verified that such evoked sentiments drive satisfaction judgments both directly and indirectly and thereby lead appraisals of the destinations. This partly confirmed Krebs et al.'s (2007) finding that many callers at famous iconic places may jeopardize some visitors' experiences.

#### *Theoretical and managerial implications*

It is believed that the present study has offered relevant contributions to crowding and tourism adaptation literature and shed light on how visitors can adopt combinations of approach- and avoidance-focused mindsets (Maeng et al., 2013). The article has been first to explore such psychological mechanisms in a tourism context, suggesting that environmental cues in general (Berger & Fitzsimons, 2008) and social cues in particular (e.g. Consiglio et al., 2018) can significantly influence tourist behaviour. Additionally, SEM was employed to test for mediation effects (Zhao et al., 2010) with a 95% bootstrap confidence interval—a promising method to test for mediation effects in tourism contexts.

Avoidance and approach reactions evoked by social density may generate sentiments that initiate psychological coping mechanisms such as physical or mental withdrawals from a place (e.g. Pearlin & Schooler, 1978; Zehrer & Raich, 2016). Mental withdrawal may include seeking social support or social disconnection and shielding through more extensive usage of social media. Such coping strategies can represent escape into a digital world by creating a 'mental bubble' of social protection. Accordingly, visitors distributing photos online and receiving 'likes' from friends may turn their attention to the outer world and indirectly become less distressed by negative sentiments from overcrowding (Consiglio et al., 2018). Such social coping mechanisms are plausible strategies that may mitigate negative destination appraisals.

The study points towards improvements of cruise arrivals in minor hotspots. If accepted by port authorities and being in accordance with the Harbour and Fairways Act, one could (as already planned) limit numbers of daily cruise passenger arrivals and stagger landings, although this might be opposed by powerful cruise lines and business interests serving cruises (cf. Clancy, 2017). Additionally, environmental head tax for cruise ship passengers could be implemented (cf. Mak, 2008). Tourism governance having in mind destination reputation, citizen welfare and overall local livelihood interests would imply less sectoral and more coherent town/village planning processes and improved public-private collaboration (cf. Shoval, 2018). Making larger parts of urban centres more attractive to visitors (and locals) might contribute to reduced crowding—and improve tourism-related livelihoods. Moreover, it has been indicated that touristy developments should be averted; particularly those overshadowing original attractions (cf. Krippendorff, 1980), although this might be challenging to implement in local governance.

#### *Limitations and future research*

Study limitations included possible seasonal variations not covered by the interview days. Besides, rainy survey days in Bergen might have influenced results, although summer downpours are common there. Another limitation was the use of a simplified questionnaire because of considerable time constraints.

Future research could develop improved constructs with respect to perceptions of crowding and place alterations catering to numerous short-time visitors. It would be useful to explore touristy business developments and social densities in a larger number of iconic hotspots called on by large cruise ships. It might also be worthwhile to include variables such as person characteristics, mood, risk perception (Higgins et al., 1994), and arousal (tolerance) levels (Maeng et al., 2013). Finally, further clarifications of the dimensionality and measurements of density and crowding constructs should be undertaken (Mehta, 2013).

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## References

- Anderreck, K. (1997). Territorial functioning in a tourism setting. *Annals of Tourism Research*, 24(3), 706–720.
- Anderson, J. C., & Gerbing, D. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Bell, P. A., Fisher, J. D., Baum, A., & Greene, T. C. (1990). *Environmental psychology* (3rd ed.). Fort Worth, TX: Holt, Rinehart and Winston.
- Berger, J., & Fitzsimons, G. (2008). Dogs on the street, pumas on your feet: How cues in the environment influence product evaluation and choice. *Journal of Marketing Research*, 45(1), 1–141.
- Bergkvist, L., & Rossiter, J. R. (2007). The predictive validity of multiple-item versus single-item measures of the same constructs. *Journal of Marketing Research*, 44(2), 175–184.
- Bollen, K. A., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, 111(2), 305–314.
- Bresson, G., & Logossah, K. (2011). Crowding-out effects of cruise tourism on stay-over tourism within the Caribbean. *Tourism Economics*, 17(1), 127–158.
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation, and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology*, 67(2), 319–333.
- Choi, S. C., Mirjafari, A., & Weaver, H. B. (1976). The concept of crowding: A critical review and proposal of an alternative approach. *Environment and Behavior*, 8, 345–362.
- Clancy, M. (2017). Power and profit in the global cruise industry. In R. Dowling, & C. Weeden (Eds.). *Cruise ship tourism* (pp. 43–56). Wallingford: CABI.
- Cohen, E. (1972). Towards a sociology of international tourism. *Social Research*, 13, 179–201.
- Consiglio, I., Angelis, M., & Costabile, M. (2018). The effect of social density on word of mouth. *Journal of Consumer Research*, 45, 511–528.
- Coye, R. W. (2004). Managing customer expectations in the service encounter. *International Journal of Service Industry Management*, 15, 54–71.
- Dowling, R. K. (2006). *Cruise ship tourism*. Wallingford: CABI.
- Dybedal, P. (2014). *Profiles of foreign summer season tourism in Western Norway 2011*. Oslo: Institute of Transport Economics.
- Dybedal, P., Farstad, E., Winther, P.-E., & Landa-Mata, I. (2015). *Cruise traffic to Norwegian ports*. Oslo: Institute of Transport Economics.
- Echtner, C. M., & Ritchie, J. R. B. (1993). The measurement of destination image. *Journal of Travel Research*, 31(4), 3–13.
- Eroglu, S. A., & Machleit, K. (1990). An empirical study of retail crowding: Antecedents and consequences. *Journal of Retailing*, 66(2), 201–220.
- Eroglu, S. A., Machleit, K., & Barr, T. F. (2005). Perceived retail crowding and shopping satisfaction: The role of shopping values. *Journal of Business Research*, 58(8), 1146–1153.
- Fernández, B., González, R., & Lopez, L. (2016). Historic city, tourism performance and development. *Tourism and Hospitality Research*, 16(2), 282–293.
- Fleishman, L., Feitelson, E., & Salomon, I. (2004). The role of cultural and demographic diversity in crowding perception. *Tourism Analysis*, 9, 23–40.
- Gössling, S., & Stavrinidi, I. (2016). Social networking, mobilities, and the rise of liquid identities. *Mobilities*, 11, 723–743.
- Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (2009). *Multivariate data analysis* (7th ed.). Upper River, NJ: Prentice Hall.
- Hall, E. T. (1966). *The hidden dimension*. New York, NY: Anchor Books.
- Higgins, E. T., Roney, C. J., Crowe, E., & Hymes, C. (1994). Ideal versus ought predilections for approach and avoidance: Distinct self-regulatory systems. *Journal of Personality and Social Psychology*, 66(2), 276–286.
- Jacobsen, J. K. S. (2000a). Anti-tourist attitudes. *Annals of Tourism Research*, 27, 284–300.
- Jacobsen, J. K. S. (2000b). Tourist perceptions of the ultimate European periphery. In F. Brown, & D. Hall (Eds.). *Tourism in peripheral areas* (pp. 74–90). Clevedon: Channel View.
- Jacobsen, J. K. S. (2002). Southern comfort: A study of holiday style patterns of northerners in coastal Mallorca. *Scandinavian Journal of Hospitality and Tourism*, 2, 49–78.
- Jacobsen, J. K. S. (2004). Roaming romantics. *Scandinavian Journal of Hospitality and Tourism*, 4, 5–23.
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL VIII: Analysis of linear structural relations by the method of maximum likelihood*. Chicago, IL: National Education Resources.
- Jurado, E. N., Damian, I. M., & Fernández-Morales, A. (2013). Carrying capacity model applied in coastal destinations. *Annals of Tourism Research*, 43, 1–19.
- Kennedy, D. P., Gläschner, J., Tyszka, J. M., & Adolphs, R. (2009). Personal space regulation by the human amygdala. *Nature Neuroscience*, 12(10), 1226–1227.
- Kim, D., Lee, C. K., & Sirgy, M. J. (2016). Examining the differential impact of human crowding versus spatial crowding on visitor satisfaction at a festival. *Journal of Travel & Tourism Marketing*, 33(3), 293–312.
- Krebs, A., Petr, C., & Surlbled, C. (2007). La gestion de l'hyper fréquentation du patrimoine: D'une problématique grandissante à ses réponses indifférenciées et segmentées. *Proceedings of the 9th International Conference on Arts & Cultural Management*. Valencia: University of Valencia.
- Krippendorf, J. (1980). *Marketing im Fremdenverkehr* (2nd ed.). Bern: Peter Lang.
- Lee, H., & Graefe, A. R. (2003). Crowding at an arts festival. *Tourism Management*, 24, 1–11.
- Li, J.-G. T., Kim, J.-O., & Lee, S. Y. (2009). An empirical examination of perceived retail crowding, emotions, and retail outcomes. *The Service Industry Journal*, 29(5), 635–652.
- Luque-Gil, A. M., Gomez-Moreno, M. L., & Pelaez-Fernandez, M. A. (2018). Starting to enjoy nature in Mediterranean mountains: Crowding perception and satisfaction. *Tourism Management*, 25, 83–103.
- Maeng, A., Tanner, R. J., & Soman, D. (2013). Conservative when crowded: Social crowding and consumer choice. *Journal of Marketing Research*, 50(December), 739–752.
- Mak, J. (2008). Taxing cruise tourism. *Tourism Economics*, 14, 599–614.
- Mannell, R. C., & Iso-Ahola, S. E. (1987). Psychological nature of leisure and tourism experience. *Annals of Tourism Research*, 14(3), 314–331.
- Marušić, Z., Horak, S., & Tomljenović, R. (2008). The socio-economic impacts of cruise tourism. *Tourism in Marine Environments*, 5(2/3), 131–144.
- McNaughton, N., & Corr, P. J. (2004). A two-dimensional neuropsychology of defense: Fear/anxiety and defensive distance. *Neuroscience and Biobehavioral Reviews*, 28(3), 285–305.
- Mehta, R. (2013). Understanding perceived retail crowding: A critical review and research agenda. *Journal of Retailing and Consumer Services*, 20, 642–649.
- Neuts, B., & Nijkamp, P. (2012). Tourist crowding perception and acceptability in cities: An applied modelling study on Bruges. *Annals of Tourism Research*, 39(4), 2133–2153.
- Neuts, B., Nijkamp, P., & Leeuwen, E. (2012). Crowding externalities from tourist use of urban space. *Tourism Economics*, 18(3), 649–670.
- Nunnally, J. C., & Bernstein, I. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw-Hill.
- Oliver, R. L. (1993). Cognitive, affective, and attribute bases of the satisfaction response. *Journal of Consumer Research*, 20, 418–430.
- Papathanassis, A. (2012). Guest-to-guest interaction on board cruise ships. *Tourism Management*, 33, 1148–1158.
- Papathanassis, A., & Beckmann, I. (2011). Assessing the 'poverty of cruise theory' hypothesis. *Annals of Tourism Research*, 38, 153–174.
- Pearce, P. L. (1982). *The social psychology of tourist behaviour*. Sydney: Pergamon.
- Pearlin, L. I., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, 19(1), 2–21.
- Petr, C. (2009). Fame is not always a positive asset for heritage equity!. *Journal of Travel & Tourism Marketing*, 26(1), 1–18.
- Petrescu, M. (2013). Marketing research using single-item indicators in structural equation models. *Journal of Marketing Analytics*, 1(2), 99–117.
- Podilchak, W. (1991). Distinctions of fun, enjoyment and leisure. *Leisure Studies*, 10, 133–148.
- Pons, F., Laroche, M., & Mourali, M. (2006). Consumer reactions to crowded retail settings: Cross-cultural differences between North America and the Middle East. *Psychology & Marketing*, 23(7), 555–572.
- Pons, F., Mourali, M., & Giroux, M. (2014). The density-satisfaction relationship revisited: The role of scarcity and consumer affective reactions in a crowded retail situation. *Journal of Retailing and Consumer Services*, 21, 54–60.
- Ponting, J., & McDonald, M. G. (2013). Performance, agency and change in surfing tourist space. *Annals of Tourism Research*, 43, 415–434.
- Popp, M. (2012). Positive and negative urban tourist crowding. Florence, Italy. *Tourism Geographies*, 14(1), 50–72.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879–891.
- Rapaport, A. (1975). Toward a redefinition of density. *Environment and Behavior*, 7(2), 133–158.
- Rideng, A., & Christensen, P. (2004). En route surveys. *Scandinavian Journal of Hospitality and Tourism*, 4, 242–258.

- Schmidt, D., & Keating, J. (1979). Human crowding and personal control: An integration of the research. *Psychological Bulletin*, 86, 680–700.
- Sharma, S., Durvasula, S., & Dillon, W. R. (1989). Some results on the behavior of alternate covariance structure estimation procedures in the presence of non-normal data. *Journal of Marketing Research*, 26(2), 214–221.
- Shoval, N. (2018). Urban planning and tourism in European cities. *Tourism Geographies*, 20, 371–376.
- Stokols, D. (1972). On the distinction between density and crowding: Some implications for future research. *Psychological Review*, 79, 275–277.
- Urry, J. (1990). *The tourist gaze*. London: Sage.
- Vaske, J. J., & Shelby, L. B. (2008). Crowding as a descriptive indicator and an evaluative standard: Results from 30 years of research. *Leisure Sciences*, 30, 111–126.
- Weeden, C., Lester, J. A., & Thyne, M. (2011). Cruise tourism: Emerging issues and implications for a maturing industry. *Journal of Hospitality and Tourism Management*, 18(1), 153–174.
- Wicker, A. W. (1969). Attitudes versus actions: The relationship of verbal and overt behavioral responses to attitude objects. *Journal of Social Issues*, 25(4), 41–78.
- Yagi, C., & Pearce, P. L. (2007). The influence of appearance and the number of people viewed on tourists' preferences for seeing other tourists. *Journal of Sustainable Tourism*, 15(1), 28–43.
- Zehrer, A., Crotts, J. C., & Magnini, V. P. (2011). The perceived usefulness of blog postings: An extension of the expectancy disconfirmation paradigm. *Tourism Management*, 32(1), 106–113.
- Zehrer, A., & Raich, F. (2016). The impact of perceived crowding on customer satisfaction. *Journal of Hospitality and Tourism Management*, 29, 88–98.
- Zhao, X., Lynch, J. G., & Chen, O. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197–206.
- Zuckerman, M. (1979). *Sensation seeking: Beyond the optimal level of arousal*. New York, NY: Erlbaum.

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