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# Tourists perceived crowding and destination attractiveness: The moderating effects of perceived risk and experience quality

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## ABSTRACT

Tourism crowding may affect the quality of tourism and destination attractiveness. By employing structural equation modeling on a sample of 367 tourists collected through a field survey during National Day Golden Week, the most crowded tourism period in China, the effects of tourists' perceived crowding on destination attractiveness were identified, incorporating perceived risk and experience quality as moderating variables. Both physical crowding and human crowding had negative effects on destination attractiveness, indicating that quality concerns do not matter for tourism development. Perceived risk and experience quality moderate the effect of physical crowding on destination attractiveness. If tourists have a higher risk perception and a lower experience quality, the negative effect of physical crowding on destination attractiveness will be intensified, implying that perceived risk and experience quality – variables that have rarely been investigated before – indeed play important moderating roles.

## 1. Introduction

With population explosion and urbanization (Johansson et al., 2012; Zhan, Monekoso, Remagnino, Velastin, & Xu, 2008), the world is entering a more-crowded era (Parsons & Mahudin, 2004). Because crowding phenomena have been occurring frequently (Zhan et al., 2008), crowding issues have been receiving consistently increasing attention owing to their serious impacts on security, satisfaction, and loyalty (Hyun & Kim, 2015; Neuts & Vanneste, 2018; Schultz & Svajda, 2016; Sharp, Sharp, & Miller, 2015).

As a consequence of the popularization and normalization of tourism activities in China, tourist crowding often occurs in most of the scenic spots (Neuts & Nijkamp, 2012; Popp, 2012; Shi, Zhao, & Chen, 2017; Zehrer & Raich, 2016), especially during China National Day Golden Week (Liu & Ma, 2019). According to the data of China's Ministry of Culture and Tourism (<https://www.mct.gov.cn/>), more than 782 million Chinese tourists traveled during the 2019 National Day Golden Week, up by 7.81% compared with 726 million tourists in 2018. During National Day Golden Week, large numbers of tourists visit famous attractions at the same time, with crowding – and even overcrowding – often occurring at these attractions because of massive, dense, and

concentrated tourist inflows (Yin, Bi, Zheng, & Tsaor, 2019a; Yin, Zheng, & Traur, 2019b). Tourist crowding should be treated as a vital issue and, indeed, is receiving increasing academic attention (Caber & Kılıçarslan, 2018; Jin & Pearce, 2011; Liu & Ma, 2019; Moyle & Croy, 2007; Sim, Koo, Koo, & Lee, 2018; Yin et al., 2019a, 2019b).

Moyle and Croy (2007) note that crowding in outdoor spaces has received considerable attention in the academic literature, as perceived crowding could be an essential factor affecting tourists' destination choice. In tourism studies, tourists' crowding as evaluated by high tourist density in the surroundings (Choi, Mirjafari, & Weaver, 1976; Graefe, Vaske, & Kuss, 1984; Shelby & Heberlein, 1984) is considered negative for tourism and tourists, especially relating to its impacts on tourists' security and the sustainability of the tourism industry. Crowding issues in tourism are thus coming into greater research focus (Li, Zhang, Nian, & Zhang, 2017).

Some studies have focused on the causes and consequences of tourism crowding, and the differences between different places. For example, it has been reported that the factors affecting tourists' perceived crowding include situational, environmental, and contextual factors (Lee & Graefe, 2003; Neuts & Vanneste, 2018); individual characteristics, such as nationality (Jin, Hu, & Kavan, 2016; Sun &

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Budruk, 2015); and economic factors, such as tourism expense per day (Rasoolimanesh, Jaafar, Marzuki, & Mohamad, 2015).

Several studies stress the effects of tourism crowding, for example, the effects on satisfaction (Caber & Kılıçarslan, 2018; Li et al., 2017; Liu & Ma, 2019; Luque-Gil, Gómez-Moreno, & Peláez-Fernández, 2018; Moyle & Croy, 2007; Tseng et al., 2009; Zehrer & Raich, 2016), recreation conflicts (Usher & Gómez, 2017), place attachment (Sharp et al., 2015), and brand identification (Hyun & Kim, 2015). The other potential side effects of overcrowding include water pollution (Shelby, Vaske, & Harris, 1988), environmental destruction (Ormiston, Gilbert, & Manning, 1998; Rathnayake, 2015), and service facility destruction (Thomas, Pigozzi, & Sambrook, 2005). Tourist crowding may act against individuality, and tourists may keep away from crowded destinations (Jurado, Damian, & Fernandezmorales, 2013). Only a few studies have considered the effects of perceived crowding on destinations and destination attractiveness (Jacobsen, Iversen, & Hem, 2019; Li et al., 2017). It is essential to explore these aspects in detail.

In this study, two issues are addressed. First, the paper explores the effects of tourists' perceived crowding on destination attractiveness. This is achieved by designing and identifying the structural relationship between tourists' perceived crowding and revisit intention through the effects of destination attractiveness. Second, the paper investigates whether there are some essential variables effectively moderating the effects of tourists' perceived crowding on destination attractiveness. Perceived risk and experience quality are proposed as possible moderating variables. The study then tests whether these variables moderate the effect of tourists' perceived crowding on destination attractiveness.

This study contributes to the existing literature as follows. First, it explores tourism crowding issues in depth. Indeed, crowding is regarded as either an important indicator of the popularity of destinations (Petr, 2009) or a negative perception of crowd density and tourist environment (Pons, Laroche, & Mourali, 2006). Second, previous studies have mainly focused on the effects of tourism crowding on satisfaction, with few studies examining how to moderate the effects of tourism crowding on concerns such as satisfaction, recreation conflicts, and place attachment. To the author's knowledge, this is the first work to explore the moderating effect of some essential variables on the relationship between tourists' perceived crowding and destination attractiveness. Third, perceived risk and experience quality are found to moderate the effect of physical crowding on destination attractiveness, because if tourists have higher risk perception and lower experience quality, the negative effect of physical crowding on destination attraction would be intensified. As such, the results of this paper may be useful to tourism authorities as a reference point for managing tourism crowding.

The remainder of the paper proceeds as follows. Section 2 surveys the relevant literature and proposes the research hypotheses. Section 3 describes the data and methodologies employed in this study. Empirical results and analyses are presented in Section 4. Section 5 provides some concluding remarks.

## 2. Literature review and hypotheses

### 2.1. Perceived crowding

Increasing numbers of people have been engaged in tourism activities in recent decades. As a result, crowding issues in tourism have been a popular focus of research. Indeed, crowding has an important bearing on tourists' satisfaction as well as the sustainable development of tourism (Jin et al., 2016). In general, crowding is regarded as a negative evaluation (Choi et al., 1976; Schmidt & Keating, 1979) due to spatial, social, and individual factors (Stokols, 1972a).

According to the stimulus overload theory, crowding often occurs when environmental stimulation goes beyond an individual's capacity (Desor, 1972; Milgram, 1970). Shelby (1980) stated that social, environmental, and psychological factors of tourists should be taken into account in crowding research. Shelby, Vaske, and Heberlein (1989)

proposed the concept of perceived crowding and emphasized individual psychological factors of crowding.

In addition, individual difference factors, time and space factors, and crowd environment factors can be regarded as antecedents of perceived crowding. Regarding individual difference factors, there are several interesting findings in the existing studies. For example, older visitors have higher crowding tolerance than younger ones (Jacobsen et al., 2019); men have higher crowding tolerance than women (Zehrer & Raich, 2016); Asian and African tourists have higher overcrowding tolerance than Europeans (Fleishman, Feitelson, & Salomon, 2004); and mainland Chinese tourists have higher overcrowding tolerance than Taiwanese and foreign tourists (Sun & Budruk, 2015). Additionally, because of the rapid development of tourism, tourists might evaluate their subsequent trips more highly as their own experience becomes richer. As a result, tourists with more travel experience might have a higher perceived crowding effect (Arnberger & Brandenburg, 2007; Ditton, Fedler, & Graefe, 1983).

With regard to time and space factors, tourists may register higher perceived crowding in hot and dry weather as opposed to cool weather (Griffit & Veitch, 1971), but tourists with higher accessibility to tourism resources would have lower crowding perception (Needham, Rollins, & Wood, 2004).

Tourists' perceived crowding would, of course, additionally be affected by environmental factors. Heywood and Murdock (2002) have pointed out that when a large number of tourists stay in a small-size tourism attraction, they tend to have a stronger perception of crowding. Moreover, some tourists' improper behaviors would have impacts on tourists' perception of crowding. For instance, uncivilized behaviors, such as littering and environmental pollution can enhance an individual's perception of crowding (Shelby, Heberlein, Vaske, & Alfano, 1983).

Regarding tourism crowding, there seems to be no consensus in the relevant literature. In general, crowding would negatively affect tourists' satisfaction (Li et al., 2017; Moyle & Croy, 2007; Rathnayake, 2015) and loyalty (Avila-Foucat, Sánchez Vargas, Frisch Jordan, & Ramírez Flores, 2013; Rasoolimanesh, Jaafar, Marzuki, & Abdullah, 2016). However, crowding might not always be negative for tourists (Liu & Ma, 2019). It may be viewed as a marker of the popularity of the tourist attraction (Shi et al., 2017). Meanwhile, a study by Bultena, Field, Womble, and Albrecht (1981) found no correlation between perceived crowding and satisfaction or place attachment (Sharp et al., 2015).

The literature contains many studies that show the important role of crowding in tourism and the impacts of tourists' perceived crowding on satisfaction and loyalty. Only a few studies, however, have explored the effect of crowding on destination attractiveness (Jacobsen et al., 2019; Li et al., 2017) and how to manage the effect. The next section seeks to address this essential issue and to develop relevant hypotheses.

### 2.2. The stimulus-organism-response (SOR) model

The conceptual model of this paper is based on the stimulus-organism-response (SOR) model proposed by Mehrabian and Russell (1974). The SOR model has been widely employed in tourism (Jani & Han, 2014; Kim, Lee, & Jung, 2018; Rajaguru, 2013; Rodríguez-Torrico, Prodanova, San-Martín, & Jimenez, 2019; Su & Swanson, 2017). It posits that environmental stimulus (S) elicits an emotional reaction from an organism (O), and this emotional reaction triggers the corresponding behavior response (R) (Björk, Bosnjak, & Osti, 2010; Kani, Aziz, Sambasivan, & Bojei, 2017; Manthiou, Ayadi, Lee, Chiang, & Tang, 2016).

After surveying and summarizing the relevant studies (Table 1), it was found that the effect of tourists' crowding on either destination attractiveness or revisit intention related to destination attractiveness had been paid little attention, as most of the studies had focused on the impact of crowding on tourists, such as the effect on satisfaction. The present paper, in contrast, mainly focuses on the relationships among tourists' perceived crowding, destination attractiveness, and revisit

**Table 1**  
The main variables employed in previous studies.

Independent variable	Dependent variable	Mediator	Moderator	Authors
Perceived crowding	Travel satisfaction	Positive affect, Negative affect	–	Liu and Ma (2019)
Perceived destination adaptation	Destination appraisal	Approach reaction Avoidance reaction Assessed crowding	Travel type and demographics	Jacobsen et al. (2019)
Perception of crowding	Satisfaction with the visit	–	–	Caber and Kılıçarslan (2018); Luque-Gil et al. (2018); Zehrer and Raich (2016); Rathnayake (2015)
Perceived service encounter pace	Customer satisfaction	–	Perceived spatial crowding	Song and Noone (2017)
Crowding perceptions	Satisfaction	Attractiveness	–	Li et al. (2017)
Education, gender, age, interaction with local community, satisfaction with accommodation, perceived tourism impacts	Perceived crowding	–	–	Rasoolimanesh et al. (2016)
Situational variables, characteristics of others, trip characteristics, personal characteristics	Coping behaviors	Perceived crowding	Nationality	Sun and Budruk (2015)
Perceived crowding	Consumer brand identification	Perceived luxury brand value	Need for uniqueness	Hyun and Kim (2015)
Vessel crowding	Tourists returning to whale watching	–	–	Avila-Foucat et al. (2013)
Crowding	Satisfaction	Safety, enjoyment	–	Tseng et al. (2009)
Perceived crowding	Shopping satisfaction	Emotions	–	Eroglu, Machleit, and Barr (2005)
Density, expectation, stimulus density	Crowding	–	–	Lee and Graefe (2003)
	Satisfaction	Perceived crowding	–	Shelby (1980)

intention. It argues that stimulus (i.e. tourists' perceived crowding treated as the stimulus factor) refers to environment (Manthiou et al., 2016), especially the environment (i.e. destination attractiveness treated as the organism factor) that has a direct impact on customers (i.e. revisit intention treated as the response factor). While evaluating the environment, tourists' perceived crowding could be regarded as a comprehensive description of the environmental stimulus. Tourists' perceived crowding was used as the stimulus factor in this study.

Distinct from the concept of destination image, which is a total impression of cognitive and affective evaluations on a destination (Baloglu & Mangalolu, 2001; Qu, Kim, & Im, 2011; Baloglu & McCleary, 1999), destination attractiveness refers to tourists' perceptions about a destination and its ability to satisfy their needs (Reitsamer, Brunner-Sperdin, & Stokburger-Sauer, 2016). Destination attractiveness also includes tangible and intangible components (Fadda & Sørensen, 2017; Kozak & Rimmington, 1998) and reflects the perceptions, feelings, beliefs, and opinions of individual tourists on destination (Hu & Ritchie, 1993).

In the relevant studies, the SOR model mainly focuses on physical stimuli and response by employing different cognitive and emotional variables for the organism (Kucukergin, Kucukergin, & Dedeoglu, 2020). Manthiou et al. (2016) have pointed out that organism means individuals' inner states from both cognitive and emotional perspectives. Shi et al. (2017) evaluated the attractiveness of diverse destinations by extracting the vocabulary of tourists' emotional descriptions for these diverse destinations from Weibo, regarded as China's version of Twitter. To some extent, destination attractiveness corresponds to tourists' comprehensive judgment of a destination from the viewpoints of cognition and emotion, and the emotional preference generated by tourists might be based on destination attributes. In this study, it is argued that because of tourists' comprehensive cognition and perception on a destination (Ma, Hsiao, & Gao, 2017), destination attractiveness can be regarded as an organism from the cognition prospective because tourists' emotions are likely triggered by destination attractiveness. Consequently, destination attractiveness is treated as the organism factor in this study.

In previous studies, purchase intention (Rodríguez-Torrico et al., 2019; Wu, Lee, Fu, & Wang, 2013), behavioral intentions (Flavián, Ibáñez-Sánchez, & Orús, 2019), and revisit intention (Jani & Han, 2014) have been employed as response factors. Revisit intention is used as the response factor in this study. Having introduced the stimulus, organism,

and response factors and explained why these factors are considered in this study, the conceptual framework is next proposed (Fig. 1) to explain how these factors are connected and to illustrate the hypotheses that will be investigated.

Perceived crowding is regarded as a comprehensive evaluation of surroundings from physical and psychological perspectives. For example, in an early study (Harrell, Hutt, & Anderson, 1980), perceived crowding was measured by two scales, namely sense of closure and sense of restriction (Harrell et al., 1980). Gramann and Burdge (1984) classified crowding experience of outdoor recreation into physical crowding, behavioral crowding, and goal-related crowding. In another study, physical crowding, human crowding, personal crowding, social crowding, and neutral crowding were employed for measuring perceived crowding (Li et al., 2017; Machleit, Kellaris, & Eroglu, 1994). Based on the existing literature, it is argued in the present paper that tourism would be seriously impacted by human crowding and physical crowding. We Tourists' perceived crowding, including physical crowding and human crowding, is measured using scales. In addition, it is hypothesized that human crowding of destination attractions would likely affect tourists' emotion (Kim, Lee, & Sirgy, 2016), and physical crowding would likely affect tourists' health (Booth & Cowell, 1976). Physical crowding refers to the degree of the activities that are limited by the physical space and physical environment (Gramann & Burdge, 1984). Human crowding means that the perception of an individual on the individual's demand for space exceeds the available supply of such space (Machleit et al., 1994; Stokols, 1972b). Thus, tourists' physical crowding is somewhat different from tourists' human crowding.

According to the SOR paradigm, a stimulus elicits an emotional reaction from an organism. Tourists' perception of crowding might have a negative impact on destination attractiveness (Li et al., 2017). Accordingly, Hypothesis 1a (H1a) and Hypothesis 1b (H1b) are proposed:

**H1a.** Physical crowding negatively affects destination attractiveness.

**H2b.** Human crowding negatively affects destination attractiveness.

Based on the above literature review, it can be stated that tourism satisfaction issues that are negatively affected by crowding have been widely explored in the relevant studies (Bentz, Rodrigues, Dearden, Calado, & Lopes, 2015; Eroglu et al., 2005; Luque-Gil et al., 2018; Machleit et al., 1994; Moyle & Croy, 2007; Rathnayake, 2015; Sanz-Blas, Buzova, & Schlesinger, 2019; Tseng et al., 2009; Zehrer & Raich, 2016).

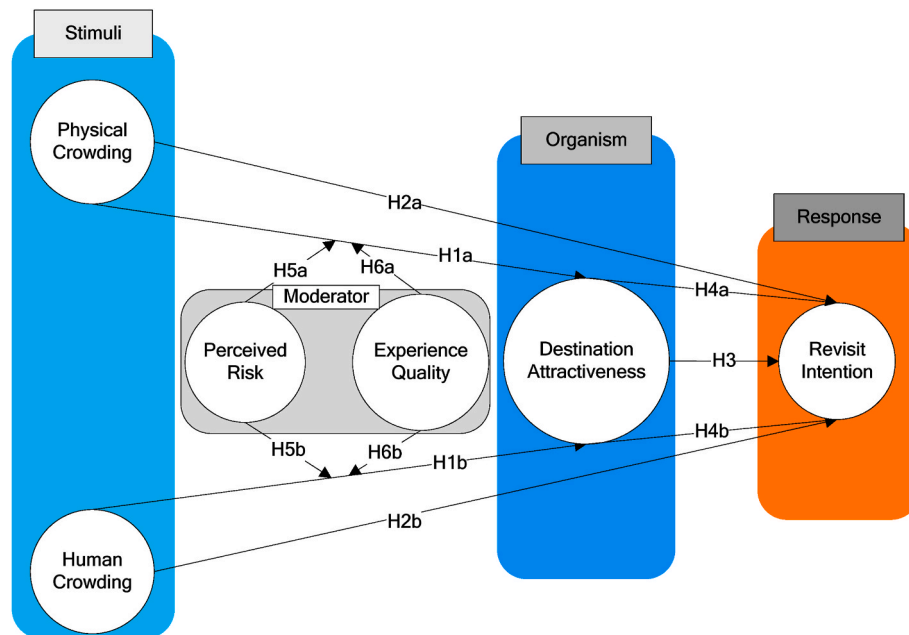


Fig. 1. The conceptual framework.

If tourists are satisfied with tourism attractions, they are inclined to revisit them (Assaker & Hallak, 2013; Jung, Ineson, Kim, & Yap, 2015; Seetanah, Teeroovengadam, & Nunkoo, 2018; Wu, Li, & Li, 2018). Avila-Foucat et al. (2013) found that tourists with perceived crowding experience would be less likely to participate in a whale-watching trip again. Accordingly, two further hypotheses for crowding, H2a and H2b, are proposed as follows:

**H2a.** Physical crowding negatively influences revisit intention.

**H2b.** Human crowding negatively influences revisit intention.

### 2.3. Destination attractiveness and revisit intention

Destination attractiveness, which is considered to be closely related to tourists' emotions, has become a crucial factor for tourism destination managers and tourism researchers (Pearce, 1997). Destination attraction is constituted by tangible and intangible elements, such as attractions, facilities, services, infrastructure, hospitality, and costs (Kozak & Rimmington, 1998). Um, Chon, and Ro (2006) have noted that destination attractiveness is not only an important factor affecting tourists' destination perception but also a decisive factor influencing tourists' destination decisions. In addition, the destination's accommodations, food, attractions, facilities, and conveniences would affect tourists' interest and expenditure (Zhang, Qu, & Ma, 2010). Kruger, Saayman, and Ellis (2014) determined that an event's attractiveness would improve visitors' satisfaction during attending a wedding expo, which implied that the more attractive the destination is, the more loyal the visitors are (Vigolo, 2015).

Destination attractiveness can significantly affect the travel intention of tourists (Ma et al., 2017), who evaluate destination attractiveness from cognitive and emotional perspectives. Revisit intention, which is an important manifestation for tourism, could be deemed as the precursor of tourist behavior. Chien (2017) found that destination attractiveness had a notably positive impact on the revisit intention for ecotourism. Accordingly, the following hypothesis is proposed for the relationship between destination attractiveness and revisit intention:

**H3.** Destination attractiveness has a positive effect on revisit intention.

### 2.4. Mediating role of destination attractiveness

According to the SOR paradigm, a stimulus can trigger emotional reflection in an organism, and that organism could then elicit a response. This chain might indicate that the emotional reaction of the organism might play a mediating role in the SOR paradigm. Tourist crowding can thus be treated as the environmental stimulus. Destination attractiveness is deemed to be the emotional and cognitive reflection of the organism, and revisit intention is regarded as the behavioral response of the organism. Previous studies have shown that crowding perceptions negatively affected perceived attractiveness (Li et al., 2017); destination attractiveness positively impacted travel intention (Ma et al., 2017); and perceived attractiveness mediated between crowding perceptions and satisfaction (Li et al., 2017). Destination attractiveness may therefore play a mediating role between perceived crowding and revisit intention. As physical crowding and human crowding are essential to perceived crowding in this study, the following hypotheses are proposed that are not sufficiently explored in the existing literature:

**H4a.** Destination attractiveness mediates the relationship between physical crowding and revisit intention.

**H4b.** Destination attractiveness mediates the relationship between human crowding and revisit intention.

### 2.5. Moderating effects between tourists' perceived crowding and destination attractiveness

The crowding environment could be one of the factors that contribute to chaos and frustration (Hyun & Kim, 2015). Overcrowding would not only lead to conflicts in society (Rathnayake, 2015) but also threaten tourists' safety (Li et al., 2017). Hence, tourist risk should be studied in relation to crowded tourism environments.

With the significant increase in the tourist population in recent decades, perceived risk has been a feature in tourism studies since the early 1990s (Tasci & Sönmez, 2019). A high possibility of tourism risk would not be a positive factor for tourism (Pizam et al., 2004). Tourist risk is identified as the possibility of negative consequences in tourism activities (Tsaour, Tzeng, & Wang, 1997). Because of perceived risk, travelers would fear negative outcomes related to local security, traffic, accommodation, and so on (Cui, Liu, Chang, Duan, & Li, 2016; Lu, Yeh, &

Chen, 2016; Reisinger & Mavondo, 2005; Russel & Prideaux, 2014).

Risk perception is a core issue affecting tourists' behaviors and decisions (Giusti & Raya, 2019; Kozak, Crotts, & Law, 2007; Zhang, Li, Yang, & Zhang, 2018), as perceived risk has negative effects on perceptual evaluation (Sohn, Lee, & Yoon, 2016) of travel destinations (Alcántara-Pilar, Blanco-Encomienda, Armenski, & Del Barrio-García, 2018) and word of mouth (Sun, 2014). Moreover, perceived risk might be treated as a moderating factor considering that perceived risk had a moderating effect between subjective norms and leisure intentions (Lu et al., 2016).

Perceived risk might influence destination image (Lepp & Gibson, 2003). Therefore, we consider that tourism crowding resulting from environment stimuli may negatively influence the emotion and evaluation of tourists with respect to the destination. The following hypotheses are therefore proposed, relating to tourists' perceived risk worsening their evaluations on the destination.

**H5a.** Perceived risk moderates the relationship between physical crowding and destination attractiveness.

**H5b.** Perceived risk moderates the relationship between human crowding and destination attractiveness.

Crowded and dense environments may cause confusion and frustration among tourists (Hyun & Kim, 2015) and result in a poor experience. The services of tourism may not function well in crowded environments (Yin et al., 2019a, 2019b), thereby likely affecting the quality of tourists' experience with tourism destinations.

The concept of experience quality was introduced in recreational tourism in early 1995 (Otto & Ritchie, 1995). Experience quality of tourism is likely affected by the tourists' perception on the tourism environment (Hanafiah, Jasmi, Razali, & Sulaiman, 2019; Kim & Brown, 2012) and includes subjective, emotional, and personal responses to diverse services of tourist attractions. These affect the overall satisfaction of tourists (Domínguez-Quintero, González-Rodríguez, & Roldán, 2019). In addition, tourism experience quality refers to tourists' evaluation of the overall experience of the destination during a period of time (Moon & Han, 2018b) through private involvement with events that occurred in a destination. In short, experience quality is the tourists' comprehensive evaluation of tourism attraction.

Experience quality affects visitors' satisfaction (Altunel & Erkurt, 2015; Chen & Chen, 2010; Cole & Illum, 2006; Kao, Huang, & Wu, 2008; Moon & Han, 2018a), emotion (Domínguez-Quintero et al., 2019; Zins, 2002), loyalty (Fernandes & Cruz, 2016), and behavioral intentions (Mansour & Ariffin, 2016), as tourists' experience quality of a destination significantly affects the destination's image (Dann, 1996). As mentioned above, tourists' satisfaction, emotion, and perception on destination image would affect their evaluation of destination attractiveness. It can be inferred that poor experience quality will reduce the attractiveness of destinations. It is argued that poor experience quality might exacerbate the negative impact of tourists' perceived crowding on destination attractiveness by proposing hypotheses as follows:

**H6a.** Experience quality moderates the relationship between physical crowding and destination attractiveness.

**H6b.** Experience quality moderates the relationship between human crowding and destination attractiveness.

### 3. Data and methodologies employed

#### 3.1. Measurement items

The scale for measuring different kinds of items employed in this study is derived from validated and reliable multi-item scales adopted in the previous studies. Tourists' perceived crowding, including physical crowding, was measured by using the five items proposed by Li et al. (2017), and human crowding was measured by using the six items

suggested by Vaske and Shelby (2008). Destination attractiveness was measured by using the seven items recommended by Hu and Ritchie (1993) and Li et al. (2017). Perceived risk was measured by using the eight items proposed by several authors (Kozak et al., 2007; Sönmez & Graefe, 1998; Williams & Baláz, 2013). Experience quality was measured by the five items that have been adopted in several studies (Domínguez-Quintero et al., 2019; González-Rodríguez, Domínguez-Quintero, & Paddison, 2019). Revisit intention was measured using one item. All of these items were measured by using the five-point Likert-type scale from strongly disagree to strongly agree. The questionnaire and its item details are presented in Appendix A.

#### 3.2. Data collection and sampling

##### 3.2.1. Study site

Of the accidents caused by highly aggregated tourist crowds, over 50% occur in the mountain regions (Yin et al., 2019a, 2019b), indicating that tourists' crowding occurs often in mountain areas. A questionnaire survey for tourists that have experience traveling to mountain region attractions was therefore deemed highly appropriate. Mount Wuyi, considered to be a World Heritage site by UNESCO, is a famous mountain tourism attraction in China that attracts thousands of tourists every year. According to the maximum daily and temporary carrying capacity of 5A Scenic Spots announced by the China National Tourism Administration in July 2015, the maximum carrying capacity of the main scenic spot in Mount Wuyi is 35,000 persons. In 2018, Mount Wuyi attracted 410,800 visitors, about 58,700 per day on average during National Day Golden Week. As such, tourist crowding is easy to occur at Mount Wuyi during the National Day holidays. Based on the above analysis, this study regards Mount Wuyi as the study site where tourist crowding easily occurs during National Day Golden Week in China.

##### 3.2.2. Data collection

According to a formal document of the Ministry of Culture and Tourism of China, 346 million tourists were recorded in the first three days of the 2017 National Day Golden Week, which account for 49.29% of the 702 million tourists during the entire week. Similarly, 502 million tourists were recorded in the first four days of the 2018 National Day Golden Week, which account for 71.51% of the 726 million tourists during the entire week. The questionnaire survey was conducted over the first four days of the 2019 National Day Golden Week, considering that the travel peak was likely to occur in the first four days. Owing to the limited national holidays in China, many people travel to famous tourism attractions during National Day Golden Week (Liu & Ma, 2019). The survey was therefore conducted with tourists traveling to Mount Wuyi during the 2019 National Day Golden Week, which is the time of data collection in this study.

A field survey as employed to collect the data. From October 1 to October 4, 2019, a well-trained research team distributed the questionnaires to tourists at sites with tourists' crowding (Fig. 2), such as scenic site entrances, scenic spot ticket windows, sightseeing bus stops, and hotspots like the Tianyou Peak of Mount Wuyi. A convenience sampling method was employed for the on-site field work. The field research team asked tourists whether they were willing to participate in the survey and feel crowding. We then distributed the questionnaire to those who answered in the affirmative after providing them a brief explanation of the purpose of the study. According to the relevant studies that employ the structural equation modeling (SEM) technique, the minimum sample size is 150 samples (Hair, Black, Babin, & Anderson, 2010). In order to ensure that we are able to obtain at least 150 valid samples, 500 questionnaires were distributed. A total of 367 valid questionnaires were obtained after excluding the incomplete questionnaires and those with flatline answers.



Fig. 2. Tourist crowding at Mount Wuyi. Source: BaMin News (2017) <https://fj.qq.com/a/20170131/009665.htm/>.

### 3.3. Data analysis tools and methods

Using the statistical package programs Process 3.4 and Mplus version 8.0, SEM was applied to analyze the data. The SEM technique included two stages, as suggested by Anderson and Gerbing (1988). First, the measurement model was analyzed to confirm whether the constructs and items used in this research were valid and reliable by conducting confirmatory factor analysis (CFA). Second, Process 3.4 (Hayes, 2013) was employed to analyze the structural model and clarify the causal relationships between the constructs. Next, moderating effects were analyzed using the Process macro Model 9 (Hayes, 2013).

## 4. Empirical results and analyses

### 4.1. Demographic characteristics

The socio-demographic profile of the respondents is shown in Table 2. There are slightly more females (50.1%) than males (49.9%). Approximately half of them (49.3%) were 18–35 years old; 24.3% of them are 36–45 years old; and only 3.8% of them were over 60 years old. The majority (58.3%) were college or university graduates; 18% of them were senior high school level; 11.5% attended junior high school and

below; and 12.3% were postgraduate students. The respondents mainly consisted of employees of businesses (30.2%) and students (20.4%). Regarding their monthly income, 31.3% earned 4000–5999 Chinese yuan (¥); 38.7% earned over ¥6000; and 10.9% earned under ¥1999.

### 4.2. Measurement model validation

Using Mplus 8.0 software, exploratory factor analysis was performed to eliminate the items (see Appendix A) if the factor loads were less than 0.5. Items B5 and B6 of human crowding; item C7 of perceived risk; and items D4, D5, and D7 of destination attractiveness were eliminated. The measures were validated through confirmatory factor analysis (CFA) and the model fit indices met the acceptable criterion (Baumgartner & Homburg, 1996; Hu & Bentler, 1999) as shown by  $\chi^2 = 549.248$  ( $df = 242$ ,  $\chi^2/df = 2.27$ ,  $P < 0.001$ ),  $RMSEA = 0.059 < 0.08$ ,  $SRMR = 0.052 < 0.08$ ,  $CFI = 0.935 > 0.9$ , and  $TLI = 0.926 > 0.9$ .

The convergent validity of the measurement model was then examined. There are two criteria for checking convergent validity: one is that the standardized factor loading of each item for the corresponding construct should be higher than 0.5, and the other is that each construct's average variance extracted (AVE) should be higher than the cut-off value of 0.5 (Fornell & Larcker, 1981). Standardized factor loading of

Table 2  
The socio-demographic profile of the respondents.

Characteristics of respondents		N	%	Characteristics of respondents		N	%	
Gender	Male	183	49.9%	Occupation	Government employees	49	13.4%	
	Female	184	50.1%		Business employees	111	30.2%	
Age	Under 18	34	9.3%		Teacher	43	11.7%	
	18 to 35	181	49.3%		Student	75	20.4%	
	36 to 45	89	24.3%		Military	3	0.8%	
	46 to 65	49	13.4%		Freelancer	33	9.0%	
	Over 66	14	3.8%		Retired	17	4.6%	
Level of education	Junior high school and below	42	11.5%		Others	36	9.8%	
	Senior high school	66	18.0%		Income level (monthly income)	Less than ¥1999	40	10.9%
	College or university graduate	214	58.3%			¥2000–3999	70	19.1%
	Postgraduate	45	12.3%	¥4000–5999		115	31.3%	
Over ¥6000				142		38.7%		

**Table 3**  
Confirmatory factor analysis: Items and factor loadings.

Dimension	Item	Standardized loading
Physical Crowding (PC)	The roads are crowded in the tour area	0.674
	The toilets in the tour area are crowded	0.806
	The service is very slow in the tour area	0.806
	The rest areas are crowded in the tour area	0.816
	There was heavy traffic going in and out of the tour area	0.635
Human Crowding (HC)	I feel like I'm in a very open area	0.740
	I felt the whole tour was very limited	0.744
	I feel there were many consumers in the shops in the tour area	0.852
	I feel the shops in the tour site were very busy	0.755
Perceived Risk (PR)	Travel experience and expectations do not match reality	0.771
	Poor service in the tour area	0.754
	The large number of tourists debased the reception	0.831
	The sights in the tour area are crowded	0.736
	I'm afraid there will be a lot of extra expenses in the tour area	0.672
	This place costs more than other places	0.596
	There is poor infrastructure in the tour area	0.572
Experience Quality (EQ)	I can enjoy the natural scenery in this place	0.797
	Visiting this place can broaden my vision	0.821
	Visiting this place can allow me to make new friends	0.816
Destination Attractiveness (DA)	Visiting this place can help me relax	0.712
	The ecological environment of the tour area attracts me	0.860
	The natural beauty of the tour area attracts me	0.915
	The pleasant climate of the tour area makes me long for it	0.745
	The unique culture of the tour area attracts me	0.527

Note: Factor standardized loadings of all items were significant at  $P < 0.001$ .

each item and the value of AVE are presented in Tables 3–4.

Table 3 shows that the standardized factor loadings of all of the items are within the recommended range. For example, the factor loading of physical crowding is between 0.635 and 0.816; that of human crowding is between 0.737 and 0.856; that of perceived risk is between 0.571 and 0.831; and that of destination attractiveness is between 0.506 and 0.930.

Table 4 shows that the AVE values of all dimensions were higher than 0.5, and the CR values of the latent constructs were higher than 0.7 (Nunnally, 1994). In addition, the AVE value was higher than the squared correlations between the variables, indicating that the discriminative validity between variables was pretty good. Accordingly,

**Table 4**  
Descriptive statistics and associated measures.

Dimension	M	SD	CR	AVE	PC	HC	EQ	PR	DA
PC	2.788	0.770	0.865	0.565	<b>0.752</b>	0.241	0.001	0.251	0.012
HC	2.766	0.649	0.856	0.599	0.491	<b>0.774</b>	0.015	0.281	0.014
EQ	3.663	0.740	0.875	0.504	-0.039	-0.122	<b>0.710</b>	0.000	0.785
PR	2.841	0.700	0.867	0.621	0.501	0.530	0.015	<b>0.788</b>	0.000
DA	2.841	0.701	0.854	0.602	-0.108	-0.118	0.886	-0.023	<b>0.776</b>

Note: Physical Crowding (PC), Human Crowding (HC), Perceived Risk (PR), Experience Quality (EQ), and Destination Attractiveness (DA). M = Mean, SD = Standard Deviation, CR = Composite Reliability, AVE = Average Variance Extracted. Correlations are shown below the diagonal and squared correlations are shown above the diagonal. The diagonal represents the discriminant validity.

the sample can be said to have good construction validity and consistency.

### 4.3. Structural model testing

A structural model was adopted to verify the relationship between latent variables. The fitting indexes of the structural model were acceptable (i.e.  $\chi^2 = 549.248$ ,  $\chi^2/df = 2.27$ , RMSEA = 0.059 < 0.08, SRMR = 0.052 < 0.08, CFI = 0.935 > 0.9, and TLI = 0.926 > 0.9). Process 3.4 was then used to empirically examine the relationships between these variables. According to the conceptual framework shown in Fig. 1, Table 5 shows that H1a and H1b were supported, considering that physical crowding negatively affected destination attractiveness ( $\beta = -0.12$ ,  $P < 0.01$ ), and human crowding too negatively affected destination attractiveness ( $\beta = -0.13$ ,  $P < 0.05$ ). Physical crowding had a negative predictive effect on revisit intention ( $\beta = -0.10$ ,  $P < 0.05$ ), which supports H2a. However, human crowding did not have a significant influence on revisit intention ( $\beta = -0.03$ ,  $P > 0.1$ ), indicating that H2b is not supported. H3 is supported, as destination attractiveness had a positive effect on revisit intention ( $\beta = 0.49$ ,  $P < 0.001$ ).

Referring to the measurement of indirect effects (Hayes & Preacher, 2014; Montoya & Hayes, 2017), physical crowding had a significantly negative indirect effect ( $\beta = -0.06$ ,  $P < 0.05$ ) on revisit intention via destination, supporting H4a. Because the P value of testing the interaction between human crowding and destination attractiveness was higher than 0.05, destination attractiveness does not seem to play the mediator role between human crowding and revisit intention, indicating that H4b is not supported.

### 4.4. Moderated mediation effect

In order to examine moderated mediation, Process macro Model 9 (Hayes, 2013) was used, with three steps shown in Table 6.

Table 6 presents the moderating effect testing between physical crowding and destination attractiveness. Physical crowding had a

**Table 5**  
Standardized parameter estimates for the structural model and hypothesis testing.

Paths	Direct effect	Indirect effect	Total effect	Hypotheses
Effect of PC on DA	-0.12*			H1a: Supported
Effect of HC on DA	-0.13*			H1b: Supported
Effect of PC on RI	-0.10*			H2a: Supported
Effect of HC on RI	-0.03			H2b: Not supported
Effect of DA on RI	0.49***			H3: Supported
Effect of PC on RI (via DA)		-0.06*	-0.16**	H4a: Supported
Effect of HC on RI (via DA)		-0.06	-0.09	H4b: Not supported

Note: Physical Crowding (PC), Human Crowding (HC), Perceived Risk (PR), Experience Quality (EQ), Destination Attractiveness (DA), and Revisit Intention (RI). \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$ .

**Table 6**  
Moderated effects of tourists' perceived crowding on destination attractiveness.

Moderating effect testing between physical crowding and destination attractiveness									
Variables	Model 1 (dependent variable is RI)			Model 2 (dependent variable is DA)			Model 3 (dependent variable is RI)		
	$\beta$	S.E	P	$\beta$	S.E	P	$\beta$	S.E	P
Constant				-0.0345	0.034	0.3113			
PC	-0.119	0.052	0.023	-0.1128	0.0340	0.0024	-0.0956	0.0455	0.0364
DA							0.4862	0.0455	0.0000
PR				-0.0450	0.0362	0.2145			
EQ				0.7678	0.0327	0.0000			
PC*PR				0.0845	0.0249	0.0008			
PC*EQ				0.1043	0.0306	0.0007			
R <sup>2</sup>	0.014			0.6243			0.2566		
F	5.249 (P = 0.023)			1119.9535 (P = 0.0000)			62.8293 (P = 0.0000)		
Moderating effect testing between human crowding and destination attractiveness									
Variables	Model 4 (dependent variable is RI)			Model 5 (dependent variable is DA)			Model 6 (dependent variable is RI)		
	$\beta$	S.E	P	$\beta$	S.E	P	$\beta$	S.E	P
Constant				-0.0351	0.0350	0.3177			
HC	-0.126	0.052	0.016	-0.0116	0.0375	0.7576	-0.0287	0.0458	0.5316
DA							0.4940	0.0458	0.0000
PR				-0.0722	0.0372	0.0532			
EQ				0.7601	0.0337	0.0000			
HC*PR				0.0787	0.0258	0.0024			
HC*EQ				0.0038	0.0298	0.8981			
R <sup>2</sup>	0.016			0.6081			0.2484		
F	5.913 (P = 0.016)			112.0304 (P = 0.0000)			60.1594 (P = 0.0000)		

Note: Physical Crowding (PC), Human Crowding (HC), Destination Attractiveness (DA), Perceived Risk (PR), and Experience Quality (EQ).

significant negative effect on revisit intention ( $\beta = -0.119, P < 0.05$ ) in Model 1. Model 2 shows that the effect of physical crowding on destination attractiveness was significant ( $\beta = -0.1128, P < 0.001$ ) with perceived risk ( $\beta = 0.0845, P < 0.001$ ) and experience quality ( $\beta = 0.1043, P < 0.001$ ), supporting H5a and H6a.

To illustrate the moderating effects, the predicted destination attractiveness was plotted against higher or lower physical crowding (Fig. 3) as moderator variables: one standard deviation below the mean as the lower level and one above the mean as the higher level. For high perceived risk tourists, Fig. 3 shows that higher physical crowding resulted in lower destination attractiveness ( $\beta = -0.1937, P < 0.001$ ), indicating that under a high level of perceived risk, the negative effect of physical crowding on destination attractiveness was significantly enhanced.

Regarding perceived risk situations, the negative effect of physical crowding on destination attractiveness still existed. However, the effect of lower perceived risk on the effect of physical crowding on destination attractiveness was insignificant ( $\beta = -0.0282, P > 0.05$ ). In addition, it was found that the effect of a higher experience quality on the effect of physical crowding on destination attraction might be mitigated, as the coefficient was insignificant ( $\beta = -0.0084, P > 0.05$ ). However, the effect of lower experience quality might enhance the negative effect of physical crowding on destination attractiveness ( $\beta = -0.2171, P < 0.001$ ).

Regarding the moderating effect between human crowding and destination attractiveness, Model 4 also shows that the effect of human crowding on destination attractiveness was significant ( $\beta = -0.126, P < 0.05$ ). Other variables were incorporated into Model 5 and Model 6. It was found that human crowding did not affect destination attractiveness ( $\beta = -0.0116, P > 0.05$ ). Consistent with previous research (Hayes, 2015; Hayes & Preacher, 2014), it was also found that perceived risk or experience quality did not moderate the effect of human crowding on destination attractiveness without supporting H5b and H6b. Fig. 4 presents the overall results regarding whether or not the proposed hypotheses are supported.

## 5. Conclusions

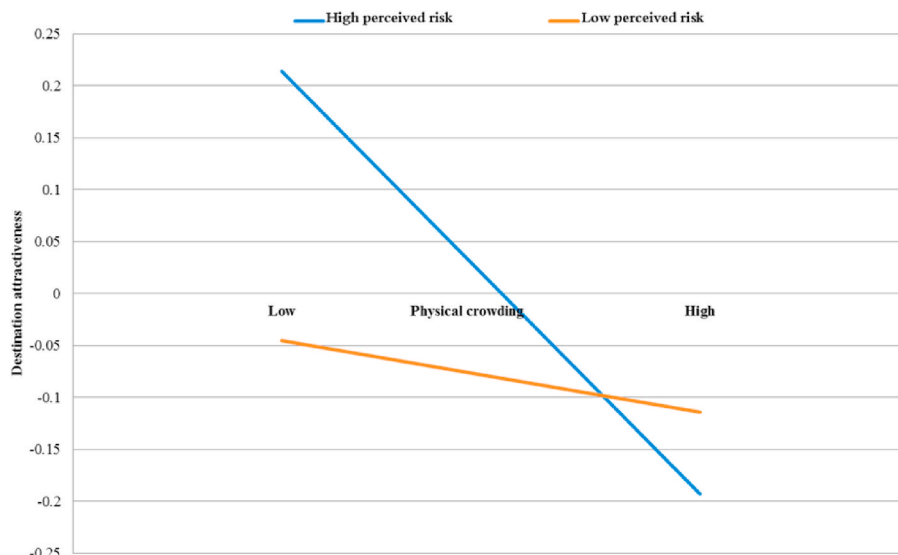
### 5.1. Conclusion and discussion

Tourist crowding is a vital concern for tourists who examine tourism attractiveness. This has become an important topic in tourism research (Yin et al., 2019, 2019b). Since tourism crowding usually occurs in famous tourism destinations (Popp, 2012), the present paper focused on the consequences of tourists' perceived crowding on destination attractiveness and how to manage the consequences. A survey was conducted in the Mount Wuyi area, one of the famous tourism attractions in China. This study not only identified the effects of tourists' perceived crowding, including physical crowding and human crowding, on destination attractiveness and revisit intention, but also investigated whether perceived risk and experience quality would have a moderating effect between tourists' perceived crowding and destination attractiveness, which are rarely explored comprehensively in the existing studies. Several important conclusions can be made, which follow.

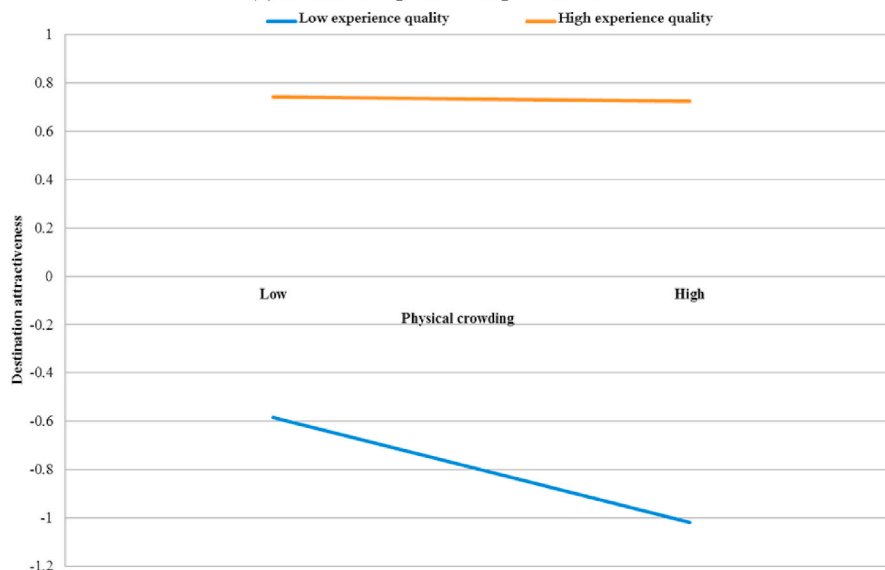
First, physical crowding had a significantly negative impact on destination attractiveness and revisit intention, indicating that when tourists perceived physical crowding, they would have an aversion to the destination. Thus, they might not prefer traveling to this destination again, and high tourist crowding would decrease the reputation of such tourist destinations, as has been noted in previous studies (Jacobsen et al., 2019; Li et al., 2017).

Second, human crowding had a significantly negative effect on destination attractiveness instead of revisit intention, indicating that human crowding has an important role to play in predicting destination attractiveness. Crowding perceptions, such as neutral crowding, personal crowding, and social crowding, decrease the attractiveness of destinations (Li et al., 2017). It is pointed out in this paper that human crowding should be regarded as an important factor that negatively affects destination attractiveness. Tourism crowding is regarded as an important predictor of revisit intention (Assaker & Hallak, 2013; Jung et al., 2015; Seetanah et al., 2018; Wu et al., 2018). It would decrease tourists' satisfaction (Bentz et al., 2015; Eroglu et al., 2005; Luque-Gil et al., 2018; Machleit et al., 1994; Moyle & Croy, 2007; Rathnayake, 2015; Sanz-Blas et al., 2019; Tseng et al., 2009; Zehrer & Raich, 2016). However, the present paper found that human crowding had an





(a) Moderating effect of perceived risk.



(b) Moderating effect of experience quality.

Fig. 3. Moderating effects.

insignificant impact on revisit intention, which seems inconsistent with the finding that crowding has a significantly negative effect on revisit intention in a previous study (Avila-Foucat et al., 2013). It can be argued that even though tourists feel human crowding, it might not weaken their revisit intent owing to the popularity of destinations. Because crowding might be considered an important indicator for the popularity of tourist destinations (Petr, 2009), it can be inferred that tourist crowding might affect revisit intention for regular destinations rather than famous destinations like Mount Wuyi, as tourist crowding might result from the popularity of the tourist destinations. As a result, human crowding might not have a negative effect on revisit intention, which might not have been interpreted comprehensively in the previous studies.

Third, destination attractiveness had a significantly positive impact on revisit intention. This suggests that if tourists feel the attractiveness of destinations, they would revisit the destination, which is consistent with the previous finding of a positive effect of predicting destination attractiveness based on travel intention and revisit intention (Chien, 2017; Ma et al., 2017). In addition, the present study also demonstrated

that destination attractiveness can play a mediator role between physical crowding and revisit intention because physical crowding not only directly affects revisit intention but also affects revisit intention through destination attractiveness. This finding expands the mediating role of destination attractiveness aside from the fact that destination attractiveness has been reported to have played a mediating role between facilities and visit intention (Vigolo, 2015).

Fourth, this paper confirms that perceived risk and experience quality may moderate the effect of physical crowding on destination attractiveness, indicating that perceived risk and experience quality can play moderator roles between physical crowding on destination attractiveness. In other words, the negative effect of physical crowding on destination attraction could be intensified for tourists with higher risk perception. Similarly, it is also shown that physical crowding would greatly decrease destination attractiveness if tourists feel a lower experience quality in a physically crowded environment, which seems to correspond to the previous finding that perceived risk moderated the effect of subjective norms on leisure intentions (Lu et al., 2016). As a result, it can be argued that this study not only enriches the

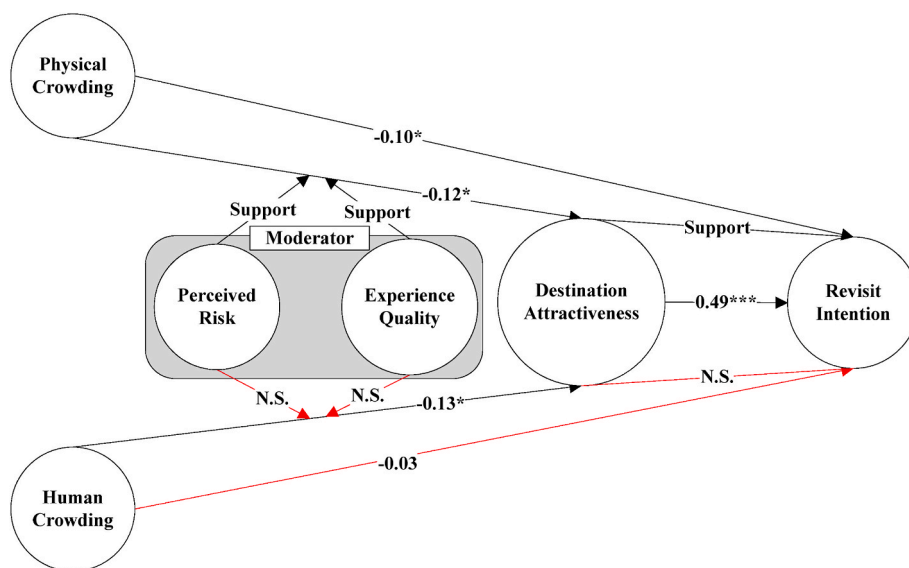


Fig. 4. Results of the model.

understanding of the moderating effects of perceived risk but also confirms that experience quality may play a moderating role in relevant tourism studies.

### 5.2. Research implications

This study contributes to the existing literature related to tourism management by further investigating the effects of tourists' perceived crowding, the consequence of tourists' perceived crowding on destination attractiveness, and how to moderate the consequence, all of which are seldom explored comprehensively in the existing studies. It was found that physical crowding and human crowding have significantly negative impacts on destination attractiveness as well as perceived risk, and experience quality could moderate the effect of physical crowding on destination attractiveness. These results add to the existing literature with the following important implications.

First, although there have been a number of studies investigating tourism crowding, the impact of tourists' perceived crowding on destination attractiveness is not only of vital concern for tourists, but it is also worthwhile for further investigation due to the insufficient studies related to tourism crowding issues in the relevant literature. Even though several studies have examined the effects of perception crowding on tourists' satisfaction (Li et al., 2017; Moyle & Croy, 2007; Rathnayake, 2015) and loyalty (Avila-Foucat et al., 2013; Rasoolimanesh et al., 2016) (i.e. focusing on the effects of tourists' perceived crowding on tourists themselves), there is a lack of studies focusing on the effect of tourist crowding on destination attractiveness. Crowding is deemed as an important indicator for the popularity of destinations (Petr, 2009), but crowding could be a negative perception of crowd density and the tourism environment (Pons et al., 2006). This study suggests that tourists' perceived crowding may have a negative effect on destination attractiveness, which might be based on the above link.

Second, several studies have paid attention to the effects of tourists' perceived crowding, but few studies have explored the factors connected to the negative effect of crowding, which might be helpful to know for managing and controlling the negative effects of crowding. This paper helps to fill this gap in the existing literature by showing that high perceived risk and low experience quality could both greatly worsen the negative effects of physical crowding on destination attractiveness. The study also confirms that perceived risk and experience quality could be regarded as essential moderating factors, which is also likely a novel insight that was missing in the existing literature.

Third, certain implications arise for the management of crowding in destinations, especially for famous mountain destination attractions. Because of the significant negative effects of tourists' perceived crowding on destination attractiveness, two suggestions are provided here for destination management. One is to enhance the management of the physical and space environment, including roads, toilets, rest areas, and traffic, around the key nodes for the destination attractions. For example, the area should not only increase management staff for servicing tourists but also have clear guidelines for tourists to find these key nodes, which would be beneficial for mitigating congestion and physical crowding. The other is to avoid excessive concentration of tourists (i.e. human crowding) in some places, such as shops and tourist attractions, by controlling the total number of visitors during a period of time.

Fourth, because high perceived risk and low experience quality exacerbate the negative effects of physical crowding on destination attractiveness, managers of destinations should endeavor to provide a comfortable atmosphere and safe environment for tourists, which help tourists have a good experience during the tour. For example, service quality improvement, efficiency enhancement, public infrastructure upgrades, and comforts in the environment would be beneficial for tourists' relaxation. In addition, aside from facilitating an orderly visit by standardizing the order of tourists in the destination, a safe atmosphere should be generated by controlling the number of tourists after taking the capacity of the destination into account, which might also effectively mitigate the anxiety of tourists in a crowded environment.

### 5.3. Limitations and further research

Although several essential findings related to tourist crowding were derived in this study, the results should be applied with caution, as environmental and contextual factors of different sites may lead to different perceived crowding, thereby resulting in different consequences. Exploring and comparing the effect of tourists' perceived crowding for different destinations would therefore be worthy of further investigation.

Indeed, tourist crowding might be strongly perceived in the holiday season instead of the off-season. Crowding and satisfaction were surveyed during different time intervals, including during off-season, in a previous study (Moyle & Croy, 2007). Because this study was designed using a cross-sectional approach, the time factor that likely affects perceived crowding should ideally be taken into account for future

studies. Aside from setting revisit intention as the response of the conceptual framework in Fig. 1, an alternative response such as tourists recommending other tourists to visit the same tour area might be considered in further research.

#### Author statements

Jie Yin conceived and designed the research, collected and rechecked the data, performed the data analyses, and drafted and revised the manuscript. Yun Cheng collected data and perform the data analyses. Yahua Bi helped to recheck the data and revise the manuscript. Yensen Ni supervised this revised manuscript and provided feedback. All co-authors contributed to improve this revised manuscript.

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#### Availability of data and materials

The datasets used and/or analyzed during the current study are available from the first author on reasonable request at [15980301687@163.com](mailto:15980301687@163.com).

#### Declaration of competing interest

The authors declare that they have no competing interests.

#### Appendix A. Questionnaire

##### A. Physical Crowding (PC).

- A1. The roads are crowded in the tour area.
- A2. The toilets in the tour area are crowded.
- A3. The service is very slow in the tour area.
- A4. The rest areas are crowded in the tour area.
- A5. There was a heavy traffic going in and out of the tour area.

##### B. Human Crowding (HC).

- B1. I feel like I'm in a very open area.
- B2. I felt the whole tour is very limited.
- B3. I feel there are many consumers in the shops in the tour area.
- B4. I feel the shops in the tour site are very busy.
- B5. The flow of people in the tour area is slow.
- B6. For me, the whole tour area is crowded.

##### C. Perceived Risk (PR).

- C1. Travel experience expectations do not match reality.
- C2. Poor service in tour area.
- C3. The large number of tourists debased the reception.
- C4. The sights in the tour area are crowded.
- C5. I'm afraid there will be a lot of extra expenses in the tour area.
- C6. This place costs more than other places.
- C7. My unfamiliarity with the place makes me anxious.
- C8. There are poor infrastructures in the tour area.

##### D. Destination Attractiveness (DA).

- D1. The ecological environment of the tour area attracts me.
- D2. The natural beauty of the tour area attracts me.
- D3. The pleasant climate of the tour area makes me long for it.
- D4. The delicious and rich food of the tour area makes me long for it.
- D5. The special shopping products of the tour area attracts me.
- D6. The unique culture of the tour area attracts me.
- D7. The local customs of the tour area appeal to me.

##### E. Experience Quality (EQ).

- E1. I can enjoy the natural scenery in this place.
- E2. Visiting this place can broaden my vision.
- E3. Visiting this place can allow me to make new friends.

E4. Visiting this place can help me relax.

Revisit Intention (RI).

I'll come to the tour area again.

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