

1                   **Are neighbour tourists more sensitive to crowding?**  
2                   **The impact of distance on the crowding-out effect in tourism**

3  
4 **ABSTRACT**

5 The concept of the crowding-out effect has been employed in the tourism literature to analyse  
6 complex phenomena. However, there is limited insight into the crowding-out effect on tourists  
7 by tourists, and even less into the impact of distance on the crowding-out of tourists. This paper  
8 examines the relationship between crowding perceptions, tourists' attitudes toward crowding  
9 and the consequences of being crowded out. Results from a sample of 729 international tourists  
10 in Hong Kong suggest that there is a crowding-out effect on tourists by tourists, but this has  
11 only a marginal influence on the majority. The limited crowding-out effect is induced by  
12 tourists in general rather than by a single segment. The study also investigates the effect of  
13 distance on tourist crowding. The findings reveal a decaying effect of distance on tourists'  
14 crowding perceptions, as neighbour tourists are more susceptible to tourist crowding than  
15 tourists from long-haul markets.

16  
17 *Keywords:* crowding-out effect; overcrowding; distance decay; short-haul tourist; long-haul  
18 tourist; tourism destination

19 **1. Introduction**

20 Crowding is regarded as a negative phenomenon relating to social density (Stokols, 1972). In  
21 the context of tourism, crowding commonly relates to tourist disappointment (Brown, Kappes,  
22 & Marks, 2013) and other negative impacts on tourism and local communities (Andereck &  
23 Nyaupane, 2011; Jin & Pearce, 2011). As a famous international tourist destination, Hong Kong  
24 attracts millions of tourists annually, and is also the most representative high-density  
25 destination worldwide. According to the Hong Kong Tourism Board (HKTB, 2017), more than  
26 56.6 million tourists visited the city in 2016, with total expenditure by inbound tourism close  
27 to US \$37.9 billion. Although large numbers of tourist arrivals may appear to benefit the local  
28 economy, there is concern about the negative impacts of crowding on Hong Kong's tourism.

1 In particular, overcrowding from excessive numbers of tourists may lead to tourist  
2 dissatisfaction, and may even result in tourists being crowded out in the long run.

3 The tourism literature has investigated the crowding-out effect in relation to how the  
4 tourism industry crowds out other industries (Dwyer, Forsyth, Madden, & Spurr, 2000; Wang,  
5 Wan, & Dong, 2014) and how new tourist products crowd out established ones (Bresson &  
6 Logossah, 2011; Song, Dwyer, Li, & Cao, 2012). In a growing research stream focusing on the  
7 crowding-out effect on local residents, relationships between tourists and locals have received  
8 extensive attention (e.g. Andereck & Nyaupane, 2011; Fourie & Spronk, 2011; Quinn, 2007;  
9 Yang & Lo, 2018). Such studies reveal that tourists crowd local residents out of tourist districts  
10 and famous attractions, directly or indirectly. However, the issue of whether tourists crowd out  
11 other tourists does not yet appear to have been clearly addressed. Although emerging studies  
12 argue that some tourist segments may crowd out others (Su, Lin, & Liu, 2012; Chou, Hsieh, &  
13 Tseng, 2014; Yang & Lo, 2018), research on the crowding-out effect on tourists by tourists  
14 remains limited and requires generalisation across contexts. Furthermore, most existing studies  
15 use secondary data (e.g. tourist arrivals) to analyse the crowding-out effect of tourists (Chou et  
16 al., 2014; Yang & Lo, 2018), and empirical evidence derived from primary data is lacking. The  
17 research presented here is based on primary data, thereby making a further contribution to the  
18 literature on tourist crowding out.

19 Substantial studies have discussed the relationship between cultural differences and  
20 perceptions of tourist crowding (Jin & Pearce, 2011; Jin, Hu, & Kavan, 2016; Neuts & Nijkamp,  
21 2012). However, extant research reaches contradictory conclusions, particularly on cultural  
22 differences between Western and Eastern nationalities (Neuts & Nijkamp, 2012). Some studies  
23 assert that Eastern visitors have greater tolerance for tourist crowding (Neuts & Nijkamp, 2012;  
24 Sun & Budruk, 2017), whereas others argue that they are actually more sensitive to crowding  
25 (Jin & Pearce, 2011; Jin, Hu, & Kavan, 2016). Such discrepant conclusions suggest a need for  
26 further investigation.

27 Several previous studies have documented the effect of physical distance on the profiles  
28 and behaviours of tourists (Ho & McKercher, 2014; McKercher, Chan, & Lam, 2008; Park,

1 Kim, Kim, & Park, 2019). Distance has been found to play an important role in tourist  
2 destination selection and market share. Distance decay, as the first law of geography (Tobler,  
3 1970), affects tourist demand globally (McKercher et al., 2008). As distance from the focal  
4 destination increases, tourist demand decreases exponentially (Ho & McKercher, 2014).  
5 Tourism research on distance decay suggests a dichotomy between short-haul and long-haul  
6 tourists in their travel patterns, motivations, behaviour and preferences (McKercher, 2008). As  
7 such, distance decay theory may also provide a theoretical explanation for differences in  
8 crowding perceptions between international tourists.

9 Drawing on previous literature on the crowding-out effect and the impact of distance on  
10 tourists' behaviour, this study seeks to address the following objectives: (1) to determine  
11 whether there is a crowding-out effect on tourists by tourists, and particularly whether  
12 international tourists in Hong Kong are being crowded out by excessive numbers of other  
13 tourists, or by one specific segment such as mainland Chinese; and (2) to investigate whether  
14 distance has an effect on tourists' crowding perceptions. Particular attention is given to  
15 comparing and contrasting short-haul and long-haul tourists' attitudes toward tourist  
16 overcrowding. The findings of this study are beneficial to tourism scholars interested in  
17 "crowding issues", and to industry practitioners and policy makers concerned with the  
18 sustainable development of destinations.

## 19 **2. Literature review**

### 20 *2.1 The crowding-out effect in tourism studies*

21 The term "crowding-out effect" originally appeared in the field of economics to explain how  
22 increased government expenditure negatively influences private investment by other actors  
23 (Abrams & Schitz, 1978). With a general economic background, the crowding-out effect has  
24 been widely observed and discussed in various studies relating to monetary policy (Abrams &  
25 Schitz, 1978; Rode, Gómez-Baggethun, & Krause, 2015), public spending (Sloboda & Yao,  
26 2008), investment (Afonso & St. Aubyn, 2009), and pro-social behaviour (Vilnai-Yavetz &  
27 Levina, 2018). In the tourism domain, the concept of the crowding-out effect has been adopted

1 in the literature to analyse complex phenomena (e.g. Brännäs & Nordström, 2006; Bresson &  
2 Logossah, 2011; Chou, Hsieh, & Tseng, 2014; Russo, 2002; Van der Borg, Costa, & Gotti,  
3 1996), and four main effects are identified: (1) the industry crowds out other industry/sector  
4 functions; (2) new tourism products crowd out established products; (3) tourists crowd out local  
5 residents; and (4) tourists crowd out other tourists. Table 1 summarises relevant studies of the  
6 crowding-out effect in the tourism industry.

7 **[Insert Table 1 here]**

8 Early studies of the crowding-out effect were generally concerned with the negative impact  
9 of the development of the tourism industry (Van der Borg et al., 1996), and particularly with  
10 how its expansion crowds out other sectors of economic activity (Dwyer et al., 2000). By  
11 attracting urban resources, such as financial or human capital, away from other sectors, rapid  
12 expansion of tourism may threaten the vitality of local economies and the long-term  
13 sustainability of destinations (Dwyer et al., 2000; Van der Borg et al., 1996; Wang et al., 2014).  
14 Such concerns have been widely raised and discussed in relation to several popular Western  
15 destinations, including Venice, Bruges and Amsterdam (Neuts & Nijkamp, 2012; Van der Borg  
16 et al., 1996).

17 A considerable body of work has investigated how new tourism products crowd out  
18 established products. Russo (2002) asserts that, at the initial stage of tourism development, the  
19 crowding-out effect manifests itself mainly in tourism replacing other sectors, while at a later  
20 stage, it normally occurs within the tourism industry itself. For instance, when the number of  
21 day-trippers increases, low-cost and standardised tourism products tend to crowd out high-  
22 quality products. Mega-events (e.g. sporting events and festivals) are found to have a temporary  
23 crowding-out effect on traditional tourists who do not participate in them (Fourie & Santana-  
24 Gallego, 2011; Li & Song, 2013). During major events, traditional tourists tend to cancel their  
25 visit plans or switch to other destinations (Brännäs & Nordström, 2006; Kwiatkowski, 2016).  
26 In the long term, an emerging tourism product may even permanently crowd out established  
27 tourism activities. For example, Bresson and Logossah (2011) suggest that in the Caribbean,  
28 cruise tourism has become dominant and has crowded out traditional stay-over tourists.

1 Another main stream of the crowding-out effect in tourism relates to how tourists crowd  
2 out “locals”. Many concerns have been raised regarding the relationship between tourists and  
3 local residents (Brida, Osti, & Barquet 2010; Quinn, 2007; Russo, 2002; Yang & Lo, 2018).  
4 Owing to the rising cost of accommodation and transportation, as well as overcrowding in  
5 public areas, tourists have crowded local residents out of historic city districts (Neuts &  
6 Nijkamp, 2012; Quinn, 2007; Russo, 2002). Residents’ quality of life has also suffered as a  
7 result of increased congestion and the decreasing quality of products and services (Andereck  
8 & Nyaupane, 2011; Russo, 2002). Nevertheless, residents’ attitudes to tourism are not always  
9 negative (Brida et al., 2010). Individuals’ tolerance for tourist crowding may be influenced by  
10 personal benefits gained from tourism, as well as residents’ trust and economic power in  
11 tourism (Nunkoo & So, 2016).

12 Substantial evidence supports the crowding-out effect of tourists on locals. However, less  
13 is known about the effect of tourists replacing other tourists. Emerging tourism studies argue  
14 that one segment of tourists may crowd out another (Chou, Hsieh, & Tseng, 2014; Su, Lin, &  
15 Liu, 2012). In Taiwan, Chou et al. (2014) suggest that mainland Chinese tourists have crowded  
16 out international tourists from the US and Japan, whereas Su et al. (2012) indicate that inbound  
17 tourists from Korea and the US have been most affected by the increase in mainland Chinese  
18 tourists. Extant literature on the crowding-out effect on tourists by tourists is based mainly on  
19 analyses of secondary data, such as tourist arrivals (see Table 1). Although these analyses  
20 identify significant changes in international tourist flows, changes in tourist arrivals are a  
21 complex issue influenced by various internal and external factors (Song & Witt, 2003). Neuts  
22 and Nijkamp’s (2012) research on tourism crowding suggests that perceptions of tourist  
23 crowding are contingent on personal preferences, suggesting a need for further research at the  
24 individual level and analysis of primary data. As such, this study is based on primary data to  
25 supplement and enrich understanding of the crowding-out effect on tourists by tourists. This  
26 also responds to Brännäs and Nordström’s (2006) call to use individual survey data to  
27 investigate tourists’ destination-switching behaviours owing to overcrowding. Moreover,  
28 previous research on the crowding-out effect on tourists by tourists has focused primarily on

1 limited settings (e.g. Taiwan) and segments (e.g. mainland Chinese tourists crowding out other  
2 international tourists). Therefore, the cross-context generalisability of the tourism crowding-  
3 out effect requires further validation.

#### 4 *2.2 The impact of distance on tourist movements*

5 Although crowding is generally regarded as negative (Jin & Pearce, 2011; Shi, Zhao, & Chen,  
6 2017; Su et al., 2012; Yang & Lo, 2018; Zehrer & Raich, 2016), perceptions of crowding do  
7 not always elicit negative responses from tourists (Neuts & Nijkamp, 2012). Its impact varies  
8 among tourists from different source markets (Jin & Pearce, 2011; Su et al., 2012). Some  
9 research concludes that European and American visitors are more sensitive to crowding than  
10 visitors from Asian countries (Gillis, Richard, & Hagan, 1986; Neuts & Nijkamp, 2012; Sun &  
11 Budruk, 2017), while others argue that Asian tourists (e.g. Chinese) are actually less tolerant  
12 to crowding than those from Western countries (Jin & Pearce, 2011; Jin, Hu, & Kavan, 2016).  
13 Such discrepant findings on crowding perceptions by tourists from different source markets  
14 suggest a need for further studies.

##### 15 *2.2.1 Cultural distance*

16 Culture has long been recognised as an important social variable explaining why people from  
17 different countries and regions behave heterogeneously (Hofstede, 1980; Kacen & Lee, 2002;  
18 Soutar, Grainger, & Hedges, 1999). Previous studies indicate that culture is a significant  
19 predictor of people's destination choices, and that differences in tourist behaviours are  
20 attributable to cultural differences (Ng, Lee, & Soutar, 2007; Pizam & Jeong, 1996). In the  
21 tourism literature, cultural difference generally relates to a tourist's national culture or cultural  
22 distance (Ng et al., 2007). Crofts (2004) contends that cultural distance is a more exhaustive  
23 descriptor than tourists' national culture. The former refers to the extent to which a destination's  
24 culture differs from a tourist's home culture (McIntosh & Goeldner, 1990).

25 Although the impact of cultural differences on tourist behaviour has been extensively  
26 discussed in extant literature (Ahn & McKercher, 2015; Li et al., 2011; McKercher & Du Cros,  
27 2003; Ng et al., 2007; Su et al., 2017), whether cultural distance or similarity is a stronger

1 predictor of decision-making behaviours remains controversial (Bi & Lehto, 2018). Based on  
2 Byrne and Nelson's (1965) similarity-attraction theory, Kastenholz (2010) asserts that tourists  
3 prefer to choose destinations with similar cultures to their home culture. Cultural distance may  
4 be a hindering factor in attracting tourists owing to the increase in strangeness and uncertainty  
5 (Reisinger & Mavondo, 2006), whereas some scholars argue that cultural distance rather than  
6 cultural similarity attracts tourists from various source markets (Ahn & McKercher, 2015;  
7 McKercher & Du Cros, 2003).

8         Several studies have also documented the impact of cultural differences on perceptions of  
9 tourist crowding (Pearce, 1995; Neuts & Nijkamp, 2012). Previous research has determined  
10 significant differences between Eastern and Western tourists' perceptions of crowding (Neuts  
11 & Nijkamp, 2012). Some researchers claim that tourists from Asian countries, whose places of  
12 residence are commonly characterised by congestion, are more tolerant of crowding than those  
13 from Western countries (Pearce, 1995), yet contradictory findings are suggested by emerging  
14 studies. For example, Chinese tourists show unexpectedly sensitive attitudes and low tolerance  
15 of tourist crowding in China compared with Westerners (Jin & Pearce, 2011). In addition, in  
16 Taiwan, tourists from Japan, Korea, Singapore and the US have been found to be negatively  
17 affected by the large numbers of mainland Chinese tourists, while no significant impact has  
18 been found among tourists from Hong Kong, the UK and Australia (Chou et al., 2014; Su et  
19 al., 2012). These contradictions imply that the influence of cultural distance is more  
20 complicated than previously noted (Bi & Lehto, 2018). Therefore, there is a need to advance  
21 understanding of the impact of cultural distance on perceptions of tourist crowding, as well as  
22 the crowding-out effect on tourists by tourists.

### 23 2.2.2 Physical distance

24 Another paradox is identified in comparing behavioural differences between tourists from  
25 short- and long-haul markets, where the role of distance cannot be neglected (Ahn &  
26 McKercher, 2015). Based on distance decay theory, tourism studies pinpoint that physical  
27 distance has a crucial influence on tourist movements (Ho & McKercher, 2014; McKercher,  
28 Chan, & Lam, 2008). Distance decay theory originated in Geography in the late 1960s (Beaman,

1 1974). According to distance decay theory, as distance from a source market increases, tourist  
2 demand decreases (Bull, 1991); as Tobler (1970) noted, “Everything is related to everything  
3 else, but near things are more related than distant things”. Although physical distance is not a  
4 determinant factor in tourists’ destination choices, it does play an important role in  
5 understanding tourist behaviour (McKercher et al., 2008). Besides the influence of physical  
6 distance on tourist movements, distance also acts a filtering effect on travel motivation and  
7 tourism decision making (McKercher, 2018). Conceptualised by distance decay theory,  
8 McKercher (2008) indicated that short- and long-haul tourists differ significantly in their travel  
9 motivations, behaviours and preferences. Short-haul tourists generally travel for relaxation,  
10 whereas long-haul tourists tend to travel with more developmental motivations, such as  
11 learning about a culture and gaining knowledge (McKercher & Du Cros, 2003).

12 Nevertheless, the effect of physical distance is not uniform across all tourism source  
13 markets (McKercher et al., 2008; Yan, 2011). For example, empirical evidence reveals that  
14 Japanese outbound tourists exhibit different short- and long-haul distance decay patterns from  
15 other source markets (McKercher et al., 2008). Yan (2011) suggests that short-haul markets  
16 differ substantially from long-haul markets in several respects; and even within short-haul  
17 markets, apparent inconsistencies are often identified. Yet some studies find that short-haul  
18 market behaviours are largely internally consistent (Ho & Mckercher, 2014; Lee, Guillet, Law  
19 & Leung, 2012). This suggests a need for further studies of the effect of distance on tourism,  
20 particularly from the perspective of short- and long-haul markets.

21 While there has been substantial research on the effect of physical distance on demand for  
22 tourism (McKercher et al., 2008; McKercher, 2018), little research has examined whether  
23 distance exerts any influence on tourism crowding-out. To address this research gap, this study  
24 empirically examines the impact of distance on crowding perceptions, as well as the crowding-  
25 out effect of tourists. It also compares and contrasts crowding perceptions in short- and long-  
26 haul markets to determine whether differences in crowding perceptions are observable.



### 1 **3. Methodology**

#### 2 *3.1 Study area*

3 Hong Kong was selected as the study area for this research. With its unique feature of  
4 combining a Western lifestyle with traditional Chinese culture, Hong Kong continues to be  
5 ranked among the top ten destinations by the World Tourism Organization (UNWTO, 2017).  
6 Known as the “City of Life”, Hong Kong has built a favourable image overseas, with a wide  
7 range of attractions and tourism activities, attracting millions of international tourists annually.  
8 It is one of the most densely populated cities in the world, with a population of 7,448,900 and  
9 a population density of 6,830 people per square kilometre (Hong Kong Census and Statistics  
10 Department, 2017). Adding to the high density of the local population, Hong Kong attracted  
11 more than 58 million tourists in 2017, with approximately 44 million mainland Chinese and 14  
12 million visitors from other parts of the world, generating total expenditure by inbound tourism  
13 of almost US\$38 billion (HKTB, 2018). Despite large numbers of tourist arrivals bringing  
14 apparent benefits to Hong Kong’s economy, there is growing concern about the negative  
15 impacts of tourist crowding, particularly in relation to “overtourism”. Overcrowding from  
16 excess tourists may diminish the travel experience, and may even cause tourists to shun the  
17 destination.

18 Hong Kong was chosen as the study area for three major reasons. First, it is one of the  
19 most famous international tourism destinations in the world, attracting tourists from diverse  
20 source markets. This enabled investigation of the effect of physical and cultural distance on  
21 tourism crowding-out. Second, the large number of inbound tourists makes Hong Kong one of  
22 the most representative destinations for tourist crowding research. Third, existing research on  
23 tourist crowding has been conducted mainly in rural settings (Jurado, Damian, & Fernández-  
24 Morales, 2013; Zehrer & Raich, 2016), while less has been carried out in high-density urban  
25 settings (Neuts & Nijkamp, 2012), particularly in Asia. To this end, Hong Kong is an excellent  
26 area for understanding tourism crowding, the effect of distance, and the possible crowding-out  
27 effect on tourists by tourists.

1 3.2 Questionnaire design and sampling

2 A quantitative approach was employed using a questionnaire-based survey. The questionnaire  
 3 approach was chosen as it has the advantages of relevance and reliability over secondary data  
 4 approach (Hox & Boeije, 2005), and it allows for reaching a large number of people to gather  
 5 specific information, thereby achieving more generalizable findings than qualitative method  
 6 (Fowler, 2013). Also, the questionnaire approach was deemed as most appropriate to this study  
 7 due to its ability of comparing amongst different individuals/groups/segments. Development  
 8 of the survey instrument was based on a comprehensive literature review, and the survey  
 9 questionnaire was then confirmed by a focus group discussion with experts in the tourism  
 10 domain, thus content validity was ensured. Tourists' crowding perceptions (because of all types  
 11 of tourists and because of mainland Chinese tourists) were measured with a five-point Likert-  
 12 type question adapted from Neuts and Nijkamp's (2012) and Jurado et al.'s (2013) measures.  
 13 The crowding-out effect of tourists was measured by a question measuring "tourist attitudes  
 14 toward overcrowding" in Jurado et al.'s (2013) study, with five levels of predispositions  
 15 relating to tourists' readiness to leave the destination (see Table 2).

16 **Table 2.** The measurement adopted and the literature source

Variable	Definition	Item	Literature source
Crowding perception (in general)	Subjective judgement about the crowding level of tourists	I feel Hong Kong is too crowded because of all types of tourists.	Neuts & Nijkamp (2012);
Crowding perception (because of one specific segment)		I feel Hong Kong is too crowded because of mainland Chinese tourists.	Jurado et al. (2013)
Crowding-out effect (Tourists' attitudes toward overcrowding)	Emotional consequences or attitudes towards overcrowding, with five predispositions represent different degrees of tourists being crowded out.  (Choice 4 and 5 are deemed as being crowded out)	1. It wouldn't influence me in any way 2. I would avoid areas with numerous tourists 3. I would visit Hong Kong in another season 4. I would go to another site in China 5. I would go to another site elsewhere in Asia	Jurado et al. (2013)

17 *Note:* Crowding perception in general refers to crowding perception because of all types of tourists in Hong Kong.

1           Regarding crowding perception, respondents were asked to indicate the extent to which  
2 they agreed with the statement “I feel Hong Kong is too crowded because of...”, ranging from  
3 1 (strongly disagree) to 5 (strongly agree). To test the tourist crowding-out effect, respondents  
4 were asked “If Hong Kong were overcrowded by all types of tourists”, which of five  
5 predispositions would they display: (1) “wouldn’t influence me in any way”, (2) “would avoid  
6 areas with numerous tourists”, (3) “would visit Hong Kong in another season”, (4) “would go  
7 to another site in China”, and (5) “would go to another site elsewhere in Asia”. As studied by  
8 Jurado et al. (2013), those who selected predisposition 1 should be considered as not being  
9 affected by tourist crowding, whereas the rest tend to shun the destination to varying extents.  
10 In this research, these five predispositions toward crowding represent different degrees of  
11 tourists being crowded out, with predispositions 4 and 5 meaning that tourists would be  
12 crowded out of the focal destination. The questionnaire also included questions relating to  
13 tourists’ travel, and demographic information such as nationality, age and education. The  
14 original questionnaire was developed in English and then administered in English, Cantonese,  
15 and other languages. A translation-retranslation approach was employed to ensure the accuracy  
16 of each version.

17           The final survey was conducted in 2016. A non-probability proportional quota-sampling  
18 method was employed to obtain reliable and valid analysis results. The quotas were set based  
19 on the published information regarding tourism source markets from the Hong Kong Tourism  
20 Board (HKTB). Notably, as determining whether international tourists in Hong Kong are  
21 crowded out by mainland Chinese tourists is one of the key research questions, mainland China  
22 market was not included in data collection. Following data reported by the HKTB, six key  
23 source markets were selected (see Table 3). The sample size of each source market was chosen  
24 to approximate to the overall share of tourist arrivals from that market, thus ensuring a  
25 representative sample of inbound tourists to Hong Kong.

26           The questionnaires were distributed to respondents at popular tourism spots in Hong Kong,  
27 including Star Ferry Pier, Victoria Harbour and the Peak. Before administering the  
28 questionnaire, a pre-screening question was asked by the survey administrators to identify

1 whether respondents had just begun their visit to Hong Kong. Those who had just arrived were  
 2 excluded from the main survey. A total of 729 valid responses was obtained for further analysis.  
 3 Of these 729 respondents, 16.6 per cent were from Japan, 23.7 per cent from Korea, 11.4 per  
 4 cent from Macau, 22.8 per cent from Europe, 10.8 per cent from North America, and 14.7 per  
 5 cent from Australia and Oceania. Table 3 records the demographic information of the sample.  
 6 Among the 729 international tourists, 46.7 per cent were between 30 and 49 years old; and  
 7 more than half (66.9%) held a bachelor degree or higher.

8 **Table 3.** Description of respondents

	Japan	Korea	Macau	Short- haul	Europe	North America	Australia & Oceania	Long- haul	Total
Age									
18-29	63	92	40	195	80	27	16	123	318
30-39	38	38	23	99	42	31	45	118	217
40-49	13	33	14	60	22	12	29	63	123
50 or above	7	10	6	23	22	9	17	48	71

Among six tourism markets:  $\chi^2 = 64.25$ ,  $df=15$ ,  $p < 0.001$

Between short-and long-haul markets:  $\chi^2 = 26.02$ ,  $df=3$ ,  $p < 0.001$

Education									
Secondary/high school or below	27	58	37	122	47	28	44	119	241
Bachelor	83	96	43	222	84	39	49	172	394
Postgraduate or above	11	19	3	33	35	12	14	61	94

Among six tourism markets:  $\chi^2 = 34.21$ ,  $df=10$ ,  $p < 0.001$

Between short-and long-haul markets:  $\chi^2 = 13.88$ ,  $df=2$ ,  $p = 0.001$

Total	121	173	83	377	166	79	107	352	
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9 Chi-square tests were conducted to assess the differences between tourism source markets  
 10 in terms of demographic information. The results show that there are significant differences for  
 11 age ( $\chi^2 = 64.25$ ,  $df=15$ ,  $p < 0.001$ ) and education ( $\chi^2 = 34.21$ ,  $df=10$ ,  $p < 0.001$ ) between the  
 12 six international markets, and between short-and long-haul markets (age:  $\chi^2 = 26.02$ ,  $df=3$ ,  $p$   
 13  $< 0.001$ ; education:  $\chi^2 = 13.88$ ,  $df=2$ ,  $p = 0.001$ ). Such demographic differences might have  
 14 confounding influence when comparing among the target groups (Lee, Packer, & Scott, 2015).

1 As such, these differences in age and education between the tourism markets are taken into  
 2 account in the subsequent data interpretation.

3 **4. Findings and discussion**

4 4.1 The crowding-out effect of tourists: Do tourists crowd out tourists?

5 As previously stated, regarding the crowding-out effect of tourists by tourists, attention has  
 6 focused on the impact of mainland Chinese tourists on other tourist segments (Chou et al., 2014;  
 7 Su et al., 2012; Yang & Lo, 2018), yet less is known about the crowding-out effect of tourists  
 8 in general on other tourists. As such, this section focuses on addressing the first research  
 9 question of this study: *whether there is a crowding-out effect of tourists by tourists*. Specifically,  
 10 whether international tourists in Hong Kong are being crowded out by *all types of tourists* in  
 11 Hong Kong and/or by one particular segment-*mainland Chinese tourists*.

12 *4.1.1 Tourists' attitudes toward overcrowding*

13 Evidence of the crowding-out effect of tourists can be inferred from tourists' attitudes toward  
 14 overcrowding (Jurado et al., 2013). As explained before, inbound tourists in Hong Kong were  
 15 asked to indicate which of the five predisposition they would choose if Hong Kong were  
 16 overcrowded owing to all types of tourists/mainland Chinese tourists (see Table 4).

17 **Table 4.** Tourists' attitudes toward overcrowding

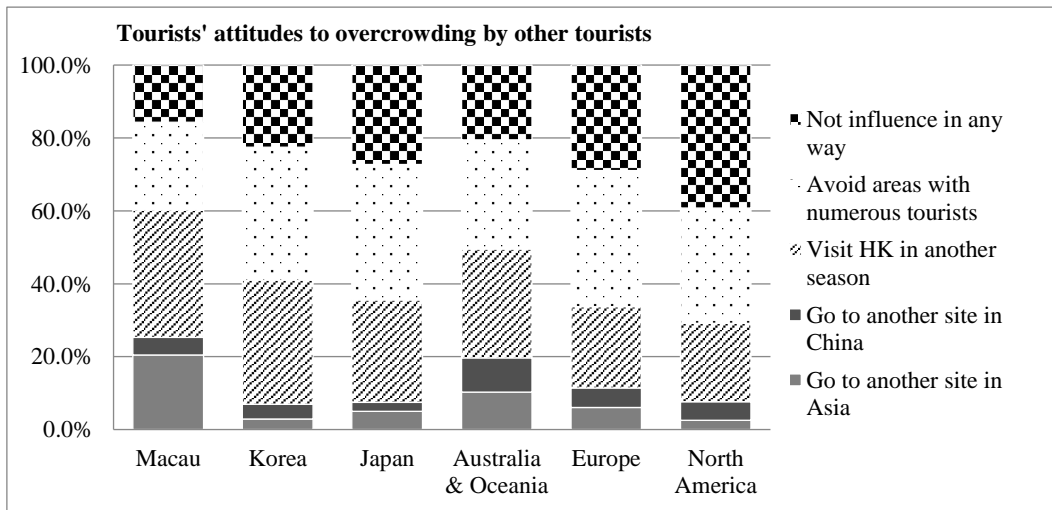
<b>Attitude toward Overcrowding</b>	<b>Owing to all types of tourists (frequency)</b>	<b>Owing to mainland Chinese tourists (frequency)</b>
It wouldn't influence me in any way	25.5%	21.5%
I would avoid areas with numerous tourists	33.9%	40.2%
I would visit Hong Kong in another season	28.5%	20.0%
I would go to another site in China	5.1%	7.0%
I would go to another site elsewhere in Asia	7.0%	11.2%
<i>Median</i>	<i>2</i>	<i>2</i>

18 Tourists who expressed a predisposition to leave Hong Kong and switch to another  
 19 destination are deemed to have been affected by crowding-out. The results show that only 12.1  
 20 per cent of tourists intended to avoid Hong Kong owing to all types of tourists, whereas 19.2  
 21 per cent felt crowded out by excess mainland Chinese tourists. The median value in the total

1 sample for tourists' attitudes toward overcrowding is predisposition 2 ("I would avoid areas  
 2 with numerous tourists"), with 33.9 per cent owing to all types of tourists in Hong Kong and  
 3 40.2 per cent owing to mainland Chinese tourists. These findings challenge earlier studies (Su  
 4 et al., 2012; Chou et al., 2014), which generally attribute decreasing tourist numbers to an  
 5 influx of mainland Chinese tourists. The current research confirms that the crowding-out effect  
 6 of tourists does exist, but only for a minority of tourists, with a marginal influence on the  
 7 majority. The crowding-out effect is not induced by only one segment (e.g. mainland Chinese);  
 8 rather, tourists feel the crowding-out effect when a destination is overcrowded with any types  
 9 of tourists.

10 Figures 1 and 2 provide a graphical summary of the crowding-out effect arising from all  
 11 tourists and mainland Chinese tourists, respectively. The results show that Macau tourists had  
 12 the highest proportion choosing to "go to another site elsewhere in Asia" if they perceived  
 13 Hong Kong to be overcrowded. That is, Macau is the source market most affected by the  
 14 crowding-out effect. In contrast, tourists from other source markets were less susceptible to  
 15 crowding than tourists from Macau. The majority of tourists from Japan, South Korea, Europe,  
 16 Australia and Oceania indicated that perceptions of crowding by all types of tourists would  
 17 prompt them to avoid areas with numerous tourists, while most North American tourists  
 18 asserted that perceptions of crowding would not influence them in any way.

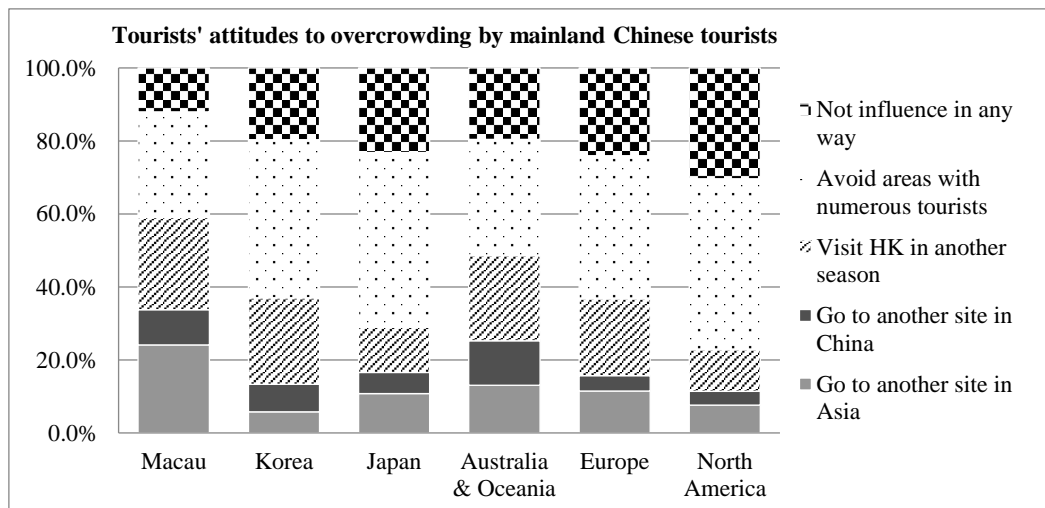
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21

**Figure 1.** Crowding-out effect from all types of tourists



**Figure 2.** Crowding-out effect from mainland Chinese tourists

Similar results were observed with regard to tourists' attitudes toward overcrowding arising from mainland Chinese tourists: for all six source markets, predisposition 2 ("I would avoid areas with numerous tourists") accounted for the largest proportion, followed by predisposition 1 ("would not influence me in any way"). These findings contradict Chou et al.'s (2014) conclusion that the Korean and US markets are most affected by the crowding-out effect of mainland Chinese. In this study, Macau is the market most affected by overcrowding.

#### 4.1.2 Differences in crowding perceptions by countries/regions

As tourists' attitude toward crowding (crowding out effect) was measured based on respondent's perception of crowding (i.e. "If Hong Kong were overcrowded by all types of tourists, I would..."), it is imperative to have a closer look at crowding perception in order to gain a richer understanding of the crowding-out effect of tourists by tourists. To examine whether tourists from different markets differ in crowding perception, ANOVA analysis was carried out to determine if there is any statistically difference among the six tourism markets. Considering age and education may have confounding influence, the effect of age and education on the level of crowding perception were analysed using a three-way factorial ANOVA. The least significant differences (LSD) is used as the post hoc test to identify which tourism markets significantly differ from each other regarding crowding perception.

1 The results of factorial ANOVA (see Table 5) shows that there are neither significant  
 2 age/education main effects nor significant interaction effects on the dependent variables:  
 3 *crowding perception because of all types of tourists (CRD)* and *crowding perception because*  
 4 *of mainland Chinese tourists (CRDBC)*, suggesting that the unequally distributed age and  
 5 education is not a serious threat to the results. The main effect of country/region is significant  
 6 both on CRD and CRDBC, even when age and education were accounted for:  $F=4.36, p=0.001$ ;  
 7  $F=3.67, p=0.003$ , which affirms that crowding perceptions of inbound tourists in Hong Kong  
 8 significantly differ across the six tourism source markets.

9 **Table 5.** Factorial ANOVA results of crowding perception by country/region, age and education

Effect	Crowding perception owing to all types of tourists (CRD)					Crowding perception owing to mainland Chinese tourists (CRDBC)				
	SS	df	MS	F	<i>p</i>	SS	df	MS	F	<i>p</i>
Country/region	16.46	5	3.29	4.36	0.001	15.20	5	3.04	3.67	0.003
Age	2.41	3	0.80	1.06	0.36	3.86	3	1.29	1.55	0.20
Education	1.42	2	0.71	0.94	0.39	1.81	2	0.90	1.09	0.34
Country/region* Age	12.00	15	0.80	1.06	0.39	10.74	15	0.72	0.86	0.61
Country/region * Education	5.37	10	0.54	0.71	0.71	5.37	10	0.54	0.65	0.77
Age * Education	5.54	6	0.92	1.22	0.29	6.04	6	1.01	1.22	0.30
Country/region * Age* Education	22.49	28	0.80	1.06	0.39	25.50	28	0.91	1.10	0.33
<i>Differences in crowding perception among countries/regions</i>										
	<b>Japan</b>	<b>Korea</b>	<b>Macau</b>	<b>Europe</b>	<b>North America</b>	<b>Australia &amp; Oceania</b>				
<b>CRD</b>	2.95	3.20	3.72	3.01	2.80	3.19				
<b>CRDBC</b>	2.84	3.16	3.75	3.23	2.98	3.30				

10 *Note:* CRD = Hong Kong is too crowded because of all types of tourists; CRDBC = Hong Kong is too crowded  
 11 because of mainland Chinese tourists.

12 To further analyse the difference between tourism markets, a post hoc test was conducted  
 13 which allows for pairwise comparisons. The results of post hoc test suggests that, in terms of  
 14 crowding perceptions owing to all types of tourists, Macau tourists ( $M = 3.72$ ) were



1 significantly more susceptible to crowding than tourists from all the other source markets (see  
2 Table 5), and that Korean tourists ( $M = 3.20$ ) perceived a significantly higher level of crowding  
3 than those from Europe and North America. With regard to crowding perception arising from  
4 mainland Chinese tourists, the significance was also highest amongst Macau tourists. The  
5 results suggest that Macau tourists ( $M = 3.75$ ) had a significantly higher crowding perception  
6 than tourists from the other international tourism markets of this study. These findings  
7 contradict the conclusion of previous studies that Asian tourists are less sensitive to tourist  
8 crowding than Western tourists (Neuts & Nijkamp, 2012). The discrepant findings imply that  
9 the impact of nationality on tourist crowding perceptions may be less strong than expected, and  
10 there is a need to explore intervening factors other than the East-West difference regarding  
11 crowding perceptions.

12 The results in this section respond the first research question by revealing that there are  
13 crowding-out effects but with a marginal influence on the majority. Such effect significantly  
14 differs across countries/regions. Notably, substantial differences are observed within Asian  
15 source markets. Japanese tourists were less susceptible to crowding than tourists from Macau  
16 and Korea, while tourists from Macau, the nearest neighbour to Hong Kong, tended to be more  
17 sensitive to crowding than other international tourists. Furthermore, the results of this study  
18 show that tourists from the US and Japan were least affected by overcrowding arising from  
19 mainland Chinese, contradicting Su et al.'s (2012) conclusion that these markets are most  
20 affected by mainland Chinese tourists. These results further confirm the necessity to examine  
21 the effect of other variables, such as distance, on perceptions of tourist crowding.

#### 22 4.2 The impact of distance: Who are being crowded out?

23 The preceding analysis reveals that differences in tourist crowding perceptions cannot be  
24 simply attributed to the East–West difference or to nationality. Significant differences were  
25 identified in crowding perceptions within both Western and Eastern markets (see Table 5). We  
26 found that tourists from some Asian regions/countries had a significantly higher perception of  
27 crowding than tourists from some Western areas, which is inconsistent with Neuts and  
28 Nijkamp's (2012) argument that Asian tourists are less susceptible to crowding than their

1 Western counterparts. This study was carried out in the East Asian area of Hong Kong, while  
 2 Neuts and Nijkamp's (2012) research focused on the European city of Bruges. Therefore, it is  
 3 reasonable to assume that differences in crowding perceptions are attributable to the impact of  
 4 distance rather than to the East–West difference. In order to gain a deeper understanding of the  
 5 influence of distance on the crowding-out effect, it is necessary to look more closely at the  
 6 association between distance and crowding perception. Thus, research objective 2 “*whether*  
 7 *distance has an effect on tourists' crowding perceptions*” is examined in this section.

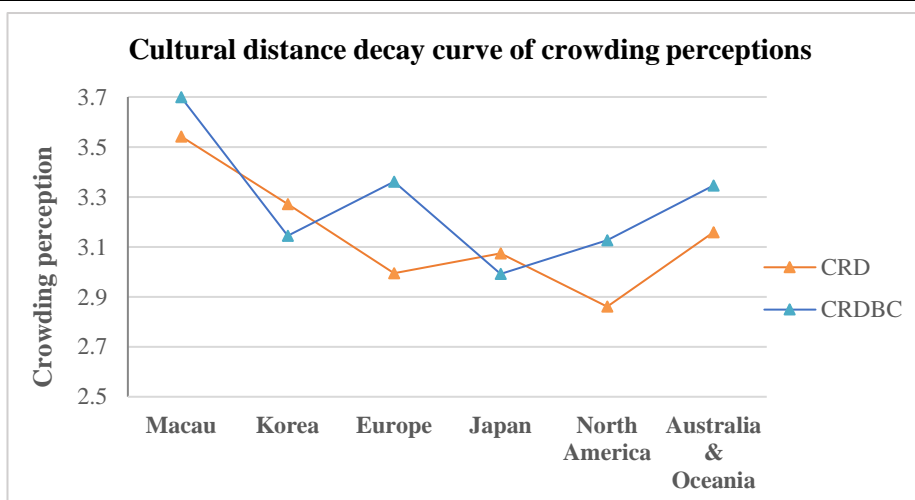
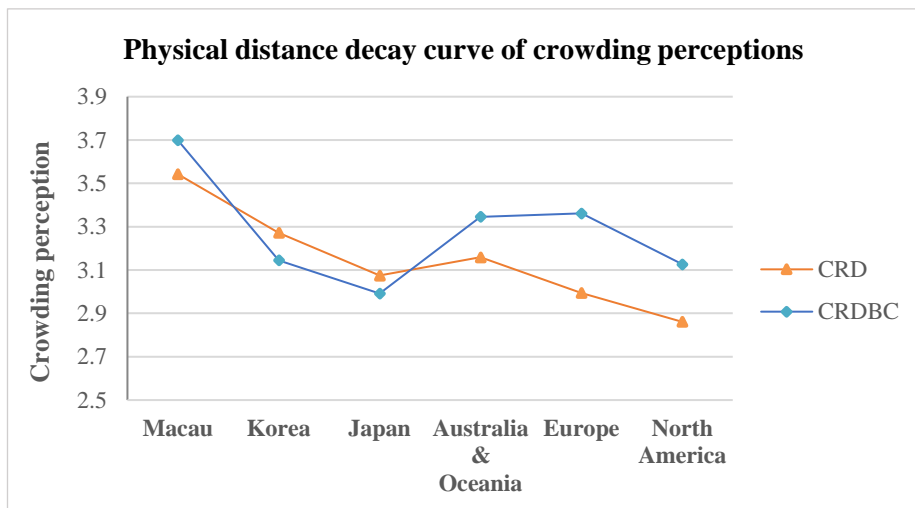
#### 8 4.2.1 Physical distance and cultural distance

9 The question of whether physical or cultural distance plays a more critical role in affecting  
 10 tourist behaviour remains controversial (Ahn & McKercher, 2015; Bi & Lehto, 2018). In this  
 11 research, physical distance was measured by flight time between Hong Kong and the capital  
 12 cities of sample countries/regions (with distance calculator), while the measurement of cultural  
 13 distance was adapted from Ahn and McKercher's (2015) index. Table 6 displays the rankings  
 14 of physical distance and cultural distance among Hong Kong's six source markets, and Figure  
 15 3 shows physical/cultural distance decay curves of crowding perception across the markets.  
 16 Whether distance decay effect exists is observed by whether perception of crowding decreases  
 17 as distance from the focal tourism destination (Hong Kong) increases.

18 **Table 6.** Rankings of physical distance and cultural distance

Ranking	Physical Distance <sup>a</sup>	Cultural Distance <sup>b</sup>
1	Macau	Macau
2	Korea	Korea
3	Japan	Europe
4	Australia &Oceania	Japan
5	Europe	North America
6	North America	Australia &Oceania

19 *Notes:* a. physical distance is ranked by flight time and distance calculator ([www.airplanemanager.com](http://www.airplanemanager.com)); b.  
 20 cultural distance ranking is adapted from Ahn and McKercher's (2015) cultural distance index.



1 Note: CRD = Hong Kong is too crowded because of all types of tourists; CRDBC = Hong Kong is too crowded  
 2 because of mainland Chinese tourists.

3 **Figure 3.** Curve of crowding perceptions across all source markets

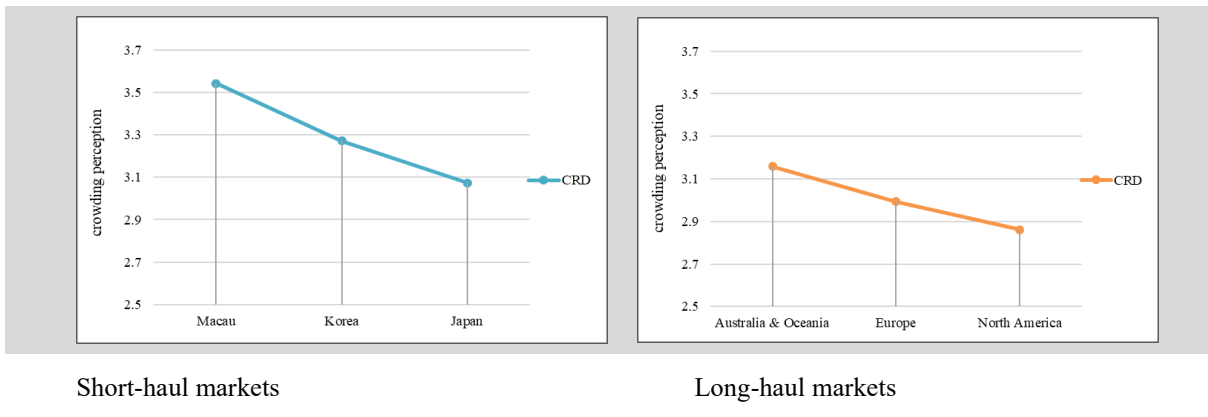
4 Although the rates for physical distance are not uniform across all source markets (see  
 5 Figure 3), a trend for distance decay can be observed with respect to crowding perceptions in  
 6 general. That is, tourists' crowding perceptions decreased as physical distance from Hong Kong  
 7 increased. An anomaly is identified among tourists from Australia and Oceania, which may be  
 8 attributable to their unique geographical location. Although Hong Kong is nine-hour flight  
 9 away from Oceania, it is commonly regarded as a short-break destination for tourists from  
 10 Australia and Oceania (Harrison-Hill, 2001; Ho & Mckercher, 2014). With regard to the effect  
 11 of cultural distance on crowding perceptions, no trend is evident. Specifically, tourist crowding  
 12 perception neither increased nor decreased with increasing cultural distance. These results

1 corroborate Bi and Lehto’s (2018) argument that the influence of cultural distance is far more  
 2 elusive than has been acknowledged.

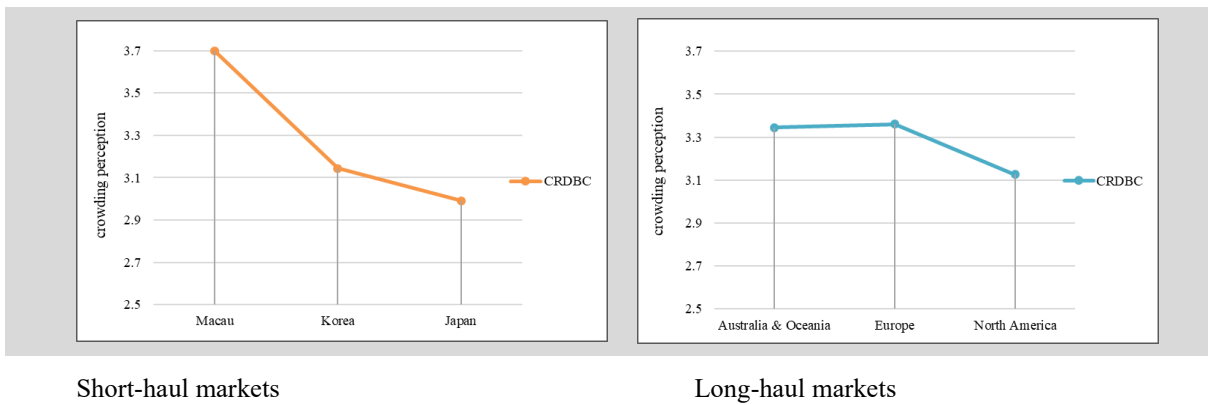
3 *4.2.2 Short-haul and long-haul tourists*

4 Although no clear trend in physical distance decay is observed in crowding perceptions arising  
 5 from mainland Chinese tourists, after dividing the source markets into short- and long-haul  
 6 markets, more apparent physical decay curves can be found (see Figure 4). In both short- and  
 7 long-haul markets, and for all types of tourists and mainland Chinese tourists, crowding  
 8 perceptions decrease as distance from Hong Kong (the focal tourism destination) increases. As  
 9 the closest neighbour to Hong Kong, Macau is the most sensitive market to tourism crowding,  
 10 both from all types of tourists and from mainland Chinese tourists.

Crowding perception arising from all types of tourists in HK



Crowding perception arising from mainland Chinese tourists in HK



11 **Figure 4.** Impact of physical distance on tourists’ crowding perceptions

12 To further determine whether short- and long-haul markets differ significantly in crowding  
 13 perceptions, we conducted an independent sample T-test to compare the means of crowding

1 perceptions between short- and long-haul markets, and a factorial ANOVA to take the effects  
 2 of age and education into account. As previously indicated by the results of Chi-square tests,  
 3 there are significant differences for age and education between short-and long-haul markets.  
 4 As such, the effects of age and education were investigated using three-way ANOVA. The main  
 5 effect of short-and long-haul markets is only significant for crowding perception owing to all  
 6 types of tourists, and there is no significant effect for age or education, and no significant  
 7 interaction effects (See Table 7).

8 **Table 7.** T-test and Factorial ANOVA results of crowding perception by short-and long-haul markets

Effect	Crowding perception owing to all types of tourists (CRD)					Crowding perception owing to mainland Chinese tourists (CRDBC)				
	SS	df	MS	F	<i>p</i>	SS	df	MS	F	<i>p</i>
Short-& Long-haul	4.56	1	4.56	5.84	0.02	0.00	1	0.00	0.00	0.98
Age	0.50	3	0.17	0.21	0.89	2.72	3	0.91	1.03	0.38
Education	0.05	2	0.02	0.03	0.97	2.45	2	1.22	1.40	0.25
Short-&Long-haul* Age	0.20	3	0.07	0.08	0.97	1.03	3	0.34	0.39	0.76
Short-&Long-haul * Education	1.31	2	0.65	0.84	0.43	0.93	2	0.47	0.53	0.59
Age * Education	4.03	6	0.67	0.86	0.52	8.35	6	1.39	1.59	0.15
Short-&Long-haul* Age* Education	3.73	6	0.62	0.79	0.57	2.93	6	0.49	0.56	0.77

<i>Differences in crowding perception between short-and long-haul markets</i>						
	Short-haul	Long-haul	<i>t</i>	<i>p</i>	Comparison	
Hong Kong is too crowded	Mean (N=377)	Mean (N=352)				
Because of all types of tourists	3.27	3.01	3.88	0.00	Short-haul>Long-haul	
Because of mainland Chinese tourists	3.21	3.30	-1.25	0.21	No significant difference	

9 *Note:* a. CRD = Hong Kong is too crowded because of all types of tourists; CRDBC = Hong Kong is too crowded  
 10 because of mainland Chinese tourists. b. Significance at the 0.05 level.

11 The results of T-test reveal that there are significant differences between short- and long-  
 12 haul markets in crowding perceptions arising from all types of tourists, whereas no difference  
 13 is found in perceived crowding arising from mainland Chinese tourists. Short-haul tourists (*M*  
 14 = 3.27) are significantly more susceptible to crowding in general than long-haul tourists (*M* =

1 3.01). This finding further confirms the effect of physical distance on tourists' crowding  
2 perceptions. That is, as distance from the destination increases, the crowding perception of a  
3 source market decreases.

## 4 **5. Discussion and conclusion**

5 The main objective of this study was to determine the possible crowding-out effects on tourists  
6 by tourists, and the impact of distance on tourists' crowding perceptions. Whether international  
7 tourists are being crowded out by all types of other tourists or by one specific segment of  
8 tourists (mainland Chinese tourists) was empirically examined based on primary data on  
9 inbound tourists to Hong Kong. The results for 729 inbound tourists reveal that the crowding-  
10 out effect on tourists by tourists does exist but has a modest impact, which differs from the  
11 conclusions of previous studies (Chou et al., 2014; Yang & Lo, 2018).

### 12 5.1 Theoretical implications

13 The few existing studies on the crowding-out effect on tourists by tourists used secondary data  
14 for analysis (Su et al., 2012; Chou et al., 2014; Yang & Lo, 2018) and there is a lack of evidence  
15 deriving from primary data. The current research is among the first to delve into tourist  
16 crowding-out effect using primary data, which affords researchers an alternative approach to  
17 quantifying the crowding-out effect on tourists by tourists and suggests future studies to  
18 replicate and extend the findings of this study. The results suggest affirm that for the majority  
19 of inbound tourists, whether arising from all other tourists or from mainland Chinese tourists,  
20 crowding would not influence their decision to visit Hong Kong. Rather, most people would  
21 tend to adjust their travel behaviour and expectations to accommodate to the tourism crowding  
22 situation, such as avoiding areas with numerous tourists or visiting the destination in another  
23 season. Such adjustment behaviours toward tourist crowding are most obvious in long-haul  
24 markets to Hong Kong (e.g. Europe and North America), which may be attributable to features  
25 of the destination and the characteristics of long-haul visitors. Hong Kong is one of the most  
26 densely populated metropolitan cities in the world. International tourists, especially those from  
27 distant areas, fly all the way to Hong Kong to experience an exotic combination of culture,  
28 people and landscapes, including the crowded streets. Furthermore, as asserted by McKercher

1 (2008), long-haul tourists tend to be more experienced visitors, with travel motivations such as  
2 learning about different cultures. As such, for long-haul visitors to Hong Kong, crowding may  
3 be within their expectations, and will thus have no serious crowding-out effect.

4 Another important contribution of this study is to accumulate the body of knowledge on  
5 tourists crowding-out effect, by revealing the effect of distance decay on crowding perception,  
6 which provides a more refined view of the crowding-out effect on tourists by tourists. The  
7 findings affirm that distance plays a crucial role in determining who are more sensitive to  
8 tourism crowding and who are more likely to be crowded out. Specifically, physical distance  
9 appears to be a more robust indicator of crowding perceptions than cultural distance. This  
10 finding aligns with Ahn and McKercher's (2015) suggestion that the impact of cultural distance  
11 may be lower than, and should be considered as a complement to, physical distance. The  
12 empirical results of this study verify that as distance from the focal destination increases,  
13 tourists' perceptions of crowding decrease. In other words, neighbour tourists are more  
14 sensitive to tourism crowding, whereas tourists from long-haul markets are more tolerant of  
15 crowding. Notably, the decaying effect of physical distance becomes more visible when short-  
16 and long-haul markets are disaggregated. Thus, the current research provides external validity  
17 of distance decay theory in the context of tourism crowding. Future studies might benefit from  
18 extending and verifying the application of distance decay theory to other tourism contexts.

19 Although tourism crowding is never a new topic, it is a long-standing issue with utmost  
20 importance. This study revisits this classic topic from the perspective of crowding-out effect,  
21 and contributes to the dialogue by highlighting the influence of distance. The findings of this  
22 study extend the existing knowledge of tourism crowding and tourist movement, in particular  
23 the understanding of the conditions under which crowding-out of tourists is likely to occur.  
24 While a few efforts have been made to study the crowding-out effect in the tourism domain,  
25 information supporting the specific crowding-out effects of tourists remains limited. Previous  
26 research on tourist crowding-out has found that one segment of tourists (e.g. mainland Chinese  
27 tourists) may crowd out other segments in Taiwan, such as tourists from Japan and the US  
28 (Chou et al., 2014; Su et al., 2012). Our study extends research from Taiwan to Hong Kong, a

1 higher-density tourism destination, and provides discrepant evidence on what types of tourists  
2 are more inclined to be crowded out. Unlike previous studies, this research sheds light on the  
3 impact of physical distance on tourism crowding-out. Tourists from long-haul markets, such as  
4 Europe and North America, are among the least susceptible to tourism crowding, while Hong  
5 Kong's nearest neighbour, Macau, shows the least tolerance of crowding. This study responds  
6 not only to Brännäs and Nordström's (2006) call to use individual survey data to capture  
7 tourists' switching behaviour, but also to Neuts and Nijkamp's (2012) suggestion that future  
8 research should provide empirical evidence from a larger sample of tourists in a high-density  
9 Asian destination.

## 10 5.2 Managerial implications

11 Understanding tourism crowding is very important to practitioners, enabling them to manage  
12 tourism destinations more effectively and achieve sustainability. From a practical perspective,  
13 this study reveals that, contrary to the conclusion that mainland Chinese tourists are crowding  
14 out other international tourists and that a "closed-door" policy should be introduced, the  
15 crowding-out effect, particularly of mainland Chinese tourists, is less severe than alleged in  
16 previous studies (Su et al., 2012; Chou et al., 2014). Academic research should not be biased  
17 by political issues, but should aim to provide objective evidence and analysis. From an  
18 economic perspective, no specific market should be treated unequally as no longer being  
19 welcome. Fair solutions, such as encouraging off-peak tourism to mitigate overcrowding  
20 pressures, should be seriously considered. For example, October-January has been commonly  
21 deemed as a peak season in Hong Kong for both domestic and international tourism, as the  
22 weather is dry and cool, along with attractive sales around the festive season. Tourism operators  
23 and policy makers may consider developing more marketing campaigns for April, May or  
24 August to Western tourists, as several traditional festivals happen in those months which can  
25 also be appealing attractions for Westerners with particular interests in East-Asian culture.

26 Moreover, the findings of this study reveal that most tourists are able to adapt to the  
27 crowding situation, for example by avoiding areas with numerous visitors. In addition, tourists  
28 from short-and long-haul markets have different preferences on what to do and where to stay



1 (McKercher, 2008; Vu, Li, Law, & Ye, 2015). It would make more sense to plan destination  
2 management based on tourism segmentation, in order to achieve a more effective management  
3 of tourism flow/movement. For example, different travel routes and marketing strategies can  
4 be developed for short-and long-haul markets. As suggested by McKercher and Du Cros (2003),  
5 long-haul tourists favour cultural attractions more than short-haul markets, whereas neighbour  
6 visitors normally seek relaxation and leisure. Marketing strategies should thus accommodate  
7 such differences by tourism practitioners, to better meet the needs of visitors and to attenuate  
8 the effect of tourism crowding-out. In the case of Hong Kong, cultural attractions including  
9 heritage sites (e.g. Tian Tan Buddha Statue) and festivals (e.g. Birthday of Tin Hau) can be  
10 promoted more to tourism markets with greater distance, while Hiking routes in Hong Kong  
11 country parks deserve more recommendations for “neighbour” tourists who might have strong  
12 needs for leisure. Meanwhile, transportation arrangements can be further considered by policy  
13 makers to accommodate the preferences of different tourism markets and to reduce the traffic  
14 congestion caused by tourism activities. Direct transport services can be provided and  
15 promoted for short-haul and long-haul visitors with considerations of the differences in  
16 preferred travel routes.

### 17 5.3 Limitations and directions for future research

18 While responses from 729 participants from six countries/regions were used for analysis in this  
19 study, future research using longitudinal data would provide valuable information about the  
20 crowding-out effect on tourists by tourists. Although this study only involved tourists in Hong  
21 Kong, the findings may be applicable to other high-density urban destinations with similar  
22 source markets and development directions, such as Macau, Korea and Singapore. However,  
23 owing to the contradictory findings of previous studies, the question of generalization remains  
24 open. Further research is thus expected to conduct in Western high-density destinations with  
25 long-haul markets coming from Asia. Additionally, as we investigated the question whether  
26 mainland Chinese tourists crowd out international tourists, mainland China was not included  
27 in this research as target sample market. Future studies can include China as source market in  
28 validating the effect of distance in tourism crowding-out with more categories for analysis.

**Table 1.** Studies on the crowding-out effect in the tourism industry

<b>Author and Year</b>	<b>Main Findings</b>	<b>Stream</b>	<b>Methods</b>
Van der Borg, Costa, & Gotti (1996)	The development of tourism leads to the crowding-out of other urban functions, which threatens the vitality of local economies.	1	Case study
Dwyer, Forsyth, Madden, & Spurr (2000)	By reducing demand for traditional exports, the tourism industry tends to “crowd out” other sectors of economic activity.	1	Computable general equilibrium (CGE) model
Wang, Wan, & Dong (2014)	The crowding-out effect of the tourism industry on other industries varies in different areas.	1	Modelling and regression; secondary data
Bresson & Logossah (2011)	Cruise tourism crowds out traditional stay-over tourism.	2	Non-parametric panel data, estimation method
Fourie & Santana- Gallego (2011)	Mega-sporting events during peak season show a decline in predicted tourism, while events in off-season attract significantly higher numbers than predicted.	2	Standard gravity model of bilateral tourism flows
Brännäs & Nordström (2006)	Crowding-out effects result in either a cancelled trip or a trip to another city during the event period.	2	Parameter estimation method
Kwiatkowski (2016)	In order to avoid crowding, regular tourists shift or cancel visits during an event.	2	Survey; descriptive analysis
Russo (2002)	As the share of day-trippers increases, low-cost and standardised tourism products crowd out high-quality products.	2	Case study
Quinn (2007)	Local residents of Venice are crowded out by tourists.	3	Case study
Brida, Osti, & Barquet (2010)	Local residents temporarily leave the community to avoid tourist crowding.	3	Cluster analysis; multinomial logistic model

Yang & Lo (2018)	Overcrowding by mainland Chinese tourists reduces the quality of tourism attractions	3	Modelling and regression; secondary data (tourist arrivals)
Su, Lin, & Liu (2012)	Mainland Chinese tourists crowd out international tourists from Japan and the US but not those from Hong Kong (study context is Taiwan).	4	Modelling and regression; secondary data (tourist arrivals)
Chou, Hsieh, & Tseng (2014)	Mainland Chinese tourists crowd out tourists from Korea, Singapore and the US, but not from Australia and the UK.	4	Modelling and regression; secondary data (tourist arrivals)

Note: Stream 1 = Tourism crowds out other industry/sector/urban functions; Stream 2 = New tourism products crowd out established products; Stream 3 = Tourists crowd out local residents; Stream 4 = Mainland Chinese tourists crowd out other international tourists.

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