Risk and Destination Perceptions of Wuhan, China since the COVID-19 Pandemic

Abstract: The COVID-19 outbreak has the world gripped by fear and panic with its high velocity of infection. Based on the first three months of the global pandemic centred in Asia, this study investigates the relationship between the perception of COVID-19 on consumers' destination image toward Wuhan and China, and how risk perceptions and changes in destination image affect consequent travel intention to the destinations. Findings illuminated that perceptions of COVID-19 do not have a direct effect on destination image. Instead, risk perception of travelling during the pandemic mediated its effects on the destination image of Wuhan and China. Additionally, findings have also highlighted that affective destination images are more influential on travel behavioural intentions in times of infectious disease outbreak. Theoretical and practical implications concerning the management of destination image for the recovery of tourism are discussed with future possibilities of this research.

Keywords: Destination Image, Risk Perception, COVID-19, Travel Intention, Affective Destination Image, Cognitive Destination Image.

Introduction

At the beginning of 2020, the world has been gripped by fear and panic by the outbreak of a new type of coronavirus that reminded the world of SARS (Severe Acute Respiratory Syndrome. Ever since, the world has seen an unprecedented spread of the disease, resulting in a global pandemic which caused a standstill to the global tourism industry, with over 70% decline in international tourist number and about USD730 billion loss in tourism exports (UNWTO, 2020), and also changed the way of life (Gössling et al., 2020; Sigala, 2020). As of 20 November 2021, there have been a total of 255,324,936 confirmed cases, including 5,127,696 million deaths reported (WHO, 2021). Despite vaccine inoculations happening rapidly all over the globe, the ever-changing virus has evolved with more deadly and transmissible variants, causing constant panic and worry toward the pandemic.

In the context of an ongoing pandemic, media takes the role of a double-edged sword during a public health crisis. Both mass media and social media have been significant in providing timely updates of the pandemic, heightening public awareness, and informing the public with evaluations on risk without causing public panic and anxiety (Chemli et al., 2020). Yet media could also play a role in inducing panic, heightening risk perceptions, and influence potential tourists' evaluation of destinations related to public health crises (Fennell, 2017; McKercher, 2003; Novelli et al., 2018; Yu et al., 2020). Only named as COVID-19 by the World Health Organization on 11 February 2020, this new highly infectious disease was previously known and publicized in various media channels as the Wuhan Coronavirus, linking the virus to its epicentre of Wuhan, Hubei Province in China ("WHO names novel coronavirus as 'COVID-19'", 2020). The media spotlight of a place as the origin of a global pandemic would bring about negative effects to place imagery and destination image management (Novelli et al., 2018;

Schroeder & Pennington-Gray, 2014). Additionally, it would also cause spill over effects, not only to the place itself but to a regional level (Novelli et al., 2018).

Within the stream of research related to the COVID-19 pandemic, existing studies have looked into the influence of media on perceptions of COVID-19, risk and travel (Chemli et al., 2020; Wen et al., 2020; Yang et al., 2021; Yu et al., 2020). These studies that examined the impacts of media on destinations related to public health crises have suggested that misleading media coverage on COVID-19 could enhance risk perceptions (Chemli et al., 2020), negatively affect one's destination image and travel intention to a country, such as China (Yang et al., 2021). However, existing studies have yet to probe how has the epicentre—Wuhan city, probably one of the most associated place to the COVID-19 pandemic due to worldwide media coverage, have been perceived by tourists outside China, and in turn how these perceptions would influence tourists' post-COVID visit intention to Wuhan. Moreover, recent tourism studies on spill over effect explored how country image, a destination product image, or major events would affect the destination image of the country as a whole (Avraham, 2015; Lee & Lockshin, 2012; Nadeau et al., 2008). Yet, little has been known about spill over effect on how the destination image of a city would affect that of the country. Thus, how would tourists outside China perceive Wuhan affect their destination image and future travel intention to China as a whole? These questions are imperative to be answered in related research streams as the COVID-19-induced negative destination image may significantly impede tourists' travel intention to relevant regions (Zenker & Kock, 2021).

To bridge the aforementioned research gap, this study would like to focus on consumers' perception of Wuhan as a destination, a city that has been highly associated by media all over the world as the origin of the pandemic during the first three months of the pandemic.

With the above background, this study has the following objective:

To examine the relationship between perceptions of COVID-19 coronavirus and travel risk on destination image of Wuhan, and consequently future travel intention to the destination.

Additionally, the study would like to investigate any spill over effects of the destination image of Wuhan to that of China. Findings from this research aim to provide insights on the perception of COVID-19, travel risk, its impacts on destination images of Wuhan and China, and possible implications to post-COVID-19 recovery efforts. Results hope to bring practical contributions to destination marketers and managers with suggestions via destination image recovery of Wuhan and China for future inbound tourism recovery.

Literature Review

Effects of the COVID-19 Pandemic on Tourism

The COVID-19 pandemic has brought upon a wave of research in the tourism and hospitality industry. Research since the start of the COVID-19 pandemic has focused on several areas: the impact of COVID-19 on destinations (Gössling et al., 2020; Sigala, 2020), possible recovery strategies for the tourism and hospitality industry during and post-COVID-19 (Joo et al., 2021), changing consumer behaviours (Li et al., 2020; Zheng et al., 2021), and the influence of media on perceptions of COVID-19, risk and travel (Chemli et al., 2020; Wen et al., 2020; Yang et al., 2021; Yu et al., 2020). As the media is influential in framing country and destination image, existing studies have proven that media coverage on COVID-19 has brought upon adverse effects to consumers' destination image of China, as well as their future travel intention to the country (Rasoolimanesh et al., 2021; Yang et al., 2021). The media spotlight on Wuhan as the origin of this ongoing pandemic can cause a spill over effect to China's destination image, affecting future travel intention to the fourth most visited country in the world.

Destination Image

Defined by Crompton (1979) as "the sum of beliefs, ideas, and impressions that a person has of a destination" (p.18), destination image consists of three aspects: cognitive, affective, and conative (Becken et al., 2017; Chew & Jahari, 2014; Echtner & Ritchie, 1993; Gartner, 1994; Pike & Ryan, 2004). The cognitive dimensions of destination image comprise a set of knowledge or understanding consumers have about the destination, evaluated based on a set of attributes that correspond to tourism products the destination provides (Beerli & Martin, 2004). The affective dimension of destination image refers to one's personal feelings or emotions toward the destination (Baloglu & McCleary, 1999; Beerli & Martin, 2004; Russell et al., 1981). Conation refers to the interactions of cognitive and affective aspects that are then later translated into behaviour (Becken et al., 2017).

Tourists form their destination image through a series of processes, starting from shaping an initial organic image of the place, to refining it into an induced image based on the processing of related information (Becken et al., 2017). So to speak, both personal knowledge and stereotypes, as well as media are influential in destination image formation. Chen, Lai, Petrick, and Lin (2016) illuminated the importance of word-of-mouth and the use of social media as influential in forming organic images and reinforcing stereotypes of destination images. Becken et al. (2017) have highlighted in their study that perceived negative stimulations play with the emotions of potential tourists affected their affective destination image, which is influential in deterring them from visit China. Thus, with both mass media and social media portraying an image that strongly associates Wuhan and China with COVID-19 (Ren et al., 2020: Wen et al., 2020; Yu et al., 2020), media portrayal is likely to bring about negative stimulations that play with the emotions of potential tourists, affecting their destination evaluations toward Wuhan, and possibly that of China as a whole (Chemli et al., 2020).

Risk Perceptions

Defined here as the way a consumer perceives an action that may expose them to danger, risk perceptions can influence one's travel decisions if the perceived danger is deemed to be beyond an acceptable level, which by its turn can impact one's travel decision-making to a destination choice (Becken et al., 2017; Perpiña et al., 2020; Roehl & Fesenmaier, 1992; Sönmez & Graefe, 1998). Prior research has examined that negative attributes of risk embedded in a destination, such as urban air pollution in China (Becken et al., 2017) and effects of the earthquake and nuclear disaster in Japan (Chew & Jahari, 2014), have affected the destination image of potential tourists. These negative attributes of destination are valid concerns for tourists as going to such destination raises issues of lacking personal health and safety (Reisinger & Mavondo, 2005). Such risks possibly influence tourists to evaluate perceptions of destination more undesirably. Destination image is especially vulnerable to those risk attributes since its measurements, explore how the destination offers personal safety (cognitive) and induce relaxing/distressing emotions (affective) toward the destination (Baloglu & McCleary, 1999; Beerli & Martin, 2004). These cognitive and affective attributes, which are affected by the tourists' perception of how the place could expose them to danger, are likely to influence negative evaluations of the destination. Thus, it can be understood that the perceived risks can influence destination image. In the case of this study, with the ongoing COVID-19 pandemic, travelling to any part of the world can be deemed as a risk, as it is a concern of personal health and safety, which would affect the tourists' evaluation of the destination.

Health-Related Crises, Risk, and Tourism

In the stream of risk literature in tourism, several studies focused on the impacts of risk perceptions of health-related crises on tourism (Law, 2006; Leppin & Aro, 2009; McKercher, 2003; Rittichainuwat & Chakraborty, 2009). Prior literature has highlighted that risk perceptions of an epidemic disease such as SARS can be affected by the media, whose reports lead to fear and panic, heightens one's perceived risk of the disease and destination(s) related

to the epidemic (McKercher, 2003; Rittichainuwat & Chakraborty, 2009; Wen et al., 2020; Yu et al., 2020). With the discovery of more transmissible and deadly variants, and the slow process of achieving herd immunity through vaccination, it is still unknown as to when will we see the light at the end of the tunnel. Thus, such uncertainties would add to how consumers perceive the coronavirus, consequently heightening their perception of the risk of travelling in an outbreak. These concerns would inevitably raise issues on personal health and safety, affecting how an individual would evaluate its travel decision-making (Law, 2006; Leppin & Aro, 2009; McKercher, 2003; Rittichainuwat & Chakraborty, 2009; Wen et al., 2020; Yu et al., 2020).

Furthermore, with media coverage shining spotlight on certain places related to the coronavirus (Ren et al., 2020; Wen et al., 2020; Yu et al., 2020), negative perceptions of COVID-19 would heighten the perceived risk of those places, which consequently affects tourists' image of the places and travel intention, whether or not it is an "infected" destination (Rittichainuwat & Chakraborty, 2009). Therefore, this study would like to build on the burgeoning stream of research to advance the knowledge of consumers' perception about COVID-19 and travel risks in shaping destination images, and consequently, the intention to visit "infected" places.

Framework and Hypotheses Development

Destination image and perception of risk have been noted to be influential to tourists' decision-making, yet these two concepts have been studied under two different streams of research in tourism (Becken et al., 2017; Chew & Jahari, 2014). Recently, there has been a rise in studies that integrated risk literature with destination image (Avraham, 2015; Becken et al., 2017; Chew & Jahari, 2014; Li et al., 2018; Perpiña et al., 2020; Qi et al., 2009; Rittichainuwat & Chakraborty, 2009).

Perceptions are defined as "an individual's knowledge, information, and experience which are responsive to their cognition of objects, behaviours, and events" (Anderson, 2004 in Lee et al., 2012, p.92). As such, mass media and social media, which are responsible for providing real-time (mis)information of COVID-19, can influence people's perceptions of the COVID-19. Extant literature has illustrated that risk perceptions of an epidemic disease, such as SARS and COVID-19, can be affected by the media, causing fear and panic, and consequently heightening one's perceived risk of the disease and destination(s) related to the epidemic (Chemli et al., 2021; McKercher, 2003; Novelli et al., 2018; Rittichainuwat & Chakraborty, 2009; Williams et al., 2020). With COVID-19 constantly being on the headlines of every media platform, and media coverage shining spotlight on certain places related to the coronavirus (Wen et al., 2020; Yu et al., 2020), negative perceptions of COVID-19, like any other existing pandemic disease, heighten the perceived risk of those places. This results in affecting tourists' image of the destinations and travel intention, whether or not it is an "infected" destination (Novelli et al., 2018; Rittichainuwat & Chakraborty, 2009). Thus, we would like to suggest that:

H1: Perception of COVID-19 directly and heightens travel risk.

H2a – H2d: Perception of COVID-19 negatively impacts destination images (cognitive and affective) of Wuhan and China.

H3a – H3d: Travel risk negatively impacts destination images (cognitive and affective) of Wuhan and China.

Based on the Theory of Planned Behavior (TPB) by Azjen (1991), intentions indicate how one is likely to engage in certain behavior. Intentions are likely to be affected by an individual's subjective knowledge, previous travel experiences (Lam & Hsu, 2006). In the context of a pandemic that has led to strict lockdowns and stay-home notices, the lack of travel experiences has led individuals to look to their perceptions of risk and safety when making travel decisions

(Li & Ito, 2021; Sönmez & Graefe, 1998). Previous studies on SARS, Ebola, and COVID-19 have identified that the media is influential in inducing fear or exaggerating risk perceptions of traveling to the related destination (Chemli et al., 2020; Mansfeld, 2006; Novelli et al., 2018; Rittichainuwat & Chakraborty, 2009). Moreover, previous studies have proven that perceptions of the disease are influential to perceived risks and travel decision making (Brug et al., 2004; Lee et al., 2012; Reisinger & Mavondo, 2008; Sonmez & Graefe, 1998). As perceptions can shape attitudes, opinions, and behaviours, a traveller's perception of the coronavirus would heighten tourists' perception of risk, and travelling in an outbreak would raise issues on personal health and safety and subsequent travel behaviour (Kozak et al., 2007; Law, 2006; McKercher, 2003; Rittichainuwat & Chakraborty, 2009). Under the context in the first three months of the pandemic, where various media platforms have placed the spotlight on Wuhan as the ground-zero of COVID-19, the media have likely to enhance risk perceptions of travel, allowing us to hypothesize that:

> H4a – H4d: Perceptions of COVID-19 and travel risks directly and negatively affects travel intention to Wuhan and China.

Prior works have highlighted both the interrelationship between cognitive and affective destination images, highlighting the importance of affective destination image (Gartner, 1994; Perpiña et al., 2020). According to these works' premises, the ongoing COVID-19 pandemic would have caused potential tourists to be in a continual state of worry and panic, especially when media outlets worldwide focused on the coverage of pandemic reports which heightened risk perceptions (Ren et al., 2020; Wen et al., 2020; Yu et al., 2020). These negative valence of media reporting on Wuhan as ground-zero of COVID-19 may have affective dimensions playing a more dominating effect on travel intention than cognitive dimensions (Becken et al., 2017; Li et al., 2018; Perpiña et al., 2020). Thus, we hypothesize:

H5a, H5b: Respective affective destination images of Wuhan and China negatively impact the corresponding cognitive destination images.

Novelli and colleagues' (2018) research on the spill over effect of Ebola on the Gambia region due to negative media portrayal has illustrated that destinations that are not directly impacted by the epidemic, can also be affected by the adverse impacts. In the context of the COVID-19 pandemic being previously coined as the "Wuhan Coronavirus" on various media outlets, the travel intention to Wuhan may be more negatively affected as compared to travel intention to other parts of China. However, it can be assumed that tourists' travel intention to China can be affected by the travel intention to Wuhan due to the spread of the virus, as well as the image of China painted in the media coverage when dealing with the pandemic. Becken et al. (2017) have highlighted in their study that perceived negative stimulations via media portrayal play with the emotions of potential tourists affected their affective destination image, which is influential in deterring them from visiting not just the city affected, but also China. Thus, the study would like to suggest:

H6a, H6b: Affective destination image of Wuhan negatively impacts affective destination image of China and cognitive destination image of China.

H7a, H7b, H8a, H8b: Affective and cognitive destination images of Wuhan and China negatively impact travel intention of Wuhan and China respectively.

H9: Travel intention to Wuhan negatively impacts travel intention to China.

Building upon the aforementioned theoretical background, the current study posits the first three months of the COVID-19 pandemic that centred in Wuhan, China, proposing an integrated framework to examine how the perception of COVID-19 affects one's perception of travel risk. Subsequently, how such perceptions of COVID-19 and travel risk influence

destination images that are highly associated to the pandemic, and one's travel intention to the said destination(s).

[Figure 1 Here]

Methodology

Data Collection

A web-based questionnaire is distributed among consumers from Singapore via random sampling through Dynata, a local market research firm in March 2020. The use of a local market research firm ensures a relatively large and good-quality database to be sampled, allowing the authors to achieve a relatively demographically balanced and diversified sample (Baker et al., 2010; Becken et al., 2017). Since the study is a public health issue that does not discriminate age and race, samples are stratified equally according to age, racial, and gender quotas to be representative of the population of Singapore. After two weeks of data collection, a total of 332 valid responses was collected.

Singapore was chosen as it was the other country outside of China with the highest number of COVID-19 cases as of February 2019. In terms of human mobility between the two countries, Singapore is also one of the top outbound countries for Chinese Nationals due to the high number of expatriates and foreign labour in the country (Lee, 2020). Additionally, Chinese inbound tourists contributed S$900 million tourism receipts in Q4 2019, making China one of the most important inbound tourism markets for Singapore's tourism (Singapore Tourism Board, 2020). On the other hand, unlike South Korea, Japan, and the US, Singapore is the ninth most important inbound market source for China's inbound tourism in 2018 (Ma, 2020). Yet, Singapore inbound tourists to China constitute the second greatest market share in Southeast Asia, after Malaysia, with a huge proportion of travels accounting for business travels and familial visits to ancestral homes (Chiang, 2015). Since the outbreak of COVID-19, Singapore

has dealt well with swift responses to contain the spread of the coronavirus, becoming one of the earliest countries which barred travellers from China as compared to Japan, Korea, and the US, which has a lag in the spread and response of the coronavirus. Hence, Singapore was selected as the target country of study.

Instruments

Instruments are developed from established measurement items of existing literature. Perception of coronavirus is measured by items adapted from Lee, Song, Bendle, Kim, and Han (2012). Risk perception of travel is derived from works by Brug, Aro, Oenema, de Zwart, Richardus, and Bishop (2004), and Leung, Lam, Ho, Chan, Wong, and Hedley (2003). Destination image of Wuhan and China will be measured based on affective destination image and cognitive destination image items established by Baloglu and McCleary (1999), Beerli and Martín (2004), and Russell, Ward, and Pratt (1981). Travel intentions are measured based on items from Law (2006) and Lee et al., (2012). Respondents were asked to value all measurement items based on a 7-point semantic differential scale based on established measurement items from prior literature, ranging from *strongly disagree* (1) to *strongly agree* (7). Additionally, a 7-point semantic differential scale was used as it provides a better reflection of respondents' true evaluation, providing greater reliability to the responses for data analysis (Joshi et al., 2015). The last segment of the survey focused on the demographic profile of the respondents as well as questions on their preferred media of information related to the COVID-19 outbreak.

Findings

Demographic Statistics

[Table 1 Here]

Table 1 illustrates the demographic profile of Singaporean respondents. A relatively demographically representative sample is collected, with equal numbers of male and female respondents. The racial distribution of the sample is almost representative of Singapore's ethnic makeup. Most respondents were well-educated, with 40.7% completed a bachelor's degree and 8.1% completed a post-graduate degree. While 65.7% of the respondents have been to China, only 13.2% of the respondents have been to Wuhan.

Confirmatory Factor Analysis

[Table 2 Here]

This study undertook Anderson and Gerbing's (1988) two-step approach of confirmatory factor analysis (CFA) and structural equation modelling (SEM) to test the relationships between the perception of COVID-19, travel risk, destination image, and travel intention. IBM AMOS 24.0 was utilized to analyse the data. The overall measurement model, which allowed correlations among all six latent variables, presented a baseline fit for a structural model to have meaning. The model fit indices are indicated acceptable fit of the model (χ^2 (75) = 157.393, $\chi 2/df = 2.099$, $p < .001$, GFI = .942, AGFI = .908, NNFI = .966, CFI = .976, RMSEA = .058). The reliability and validity of the measurement model were achieved, with values of CR being greater than 0.7, and values for AVE greater than 0.5, indicating sound construct reliability and convergent validity (Bagozzi & Yi, 1988). Each AVE values greater than the corresponding squared inter-construct correlation estimates, meeting the thresholds for discriminant validity. Based on the above statistics, the results (shown in Table 2) suggested that a theoretically meaningful and statistically acceptable model was achieved.

Structural Model and Hypothesis Testing

Results from CFA were imposed with the structure of the model to look at the goodness-of-fit of the hypothesized model for this study. Goodness-to-fit model indices of the hypothesized

model reported a χ^2 (98, N=322) = 199.838, p <.001, CFI = .974, NNFI = .964, GFI = .934, AGFI = .896, SRMR = .030, RMSEA = .056 which reports an adequately well-fitted model shown in Figure 1 (Hooper et al., 2008).

The results indicated that respondents' perception of COVID-19 has a strong significant and positive impact on travel risks (β = .71, ps <.001), supporting H1. H2 is not supported, with no statistically significant relationship between perceptions of COVID-19 and destination images. On the other hand, travel risk negatively affects the affective destination image of Wuhan (H3a) (β = -.21, ps <.05). Yet no statistically significant relationship between the cognitive destination image of Wuhan and China, and affective destination image of China. Only H4d is statistically significant (β = .11, p <.05), indicating that travel risks have a direct significant effect on travel intention to China. Both affective destination image of Wuhan and that of China significantly affect their corresponding cognitive counterparts (β = .87, ps <.001; β = .58, ps <.001), supporting H5a and 5b. H6a and H6b are supported with affective destination image of Wuhan having a statistically significant impact on both affective and cognitive destination images of China (β = .86, ps <.001; β = .28, ps <.01), indicating the spill over effect. H7a and H8a are supported whereby affective destination image of Wuhan and China have a strong significant impact on the respective travel intention (β = .28, ps <.05; β = .17, ps <.01). Lastly, H9 also shows a strong causal relationship between travel intention to Wuhan and travel intention to China (β = .74, ps <.001).

[Figure 2 Here]

Mediation Analysis

The rejection of H2 has provided an interesting perspective of Singaporean consumers, especially when the perception of COVID-19 is assumed to be influential on the destination image of Wuhan, due to misleading headlines and associations of the coronavirus with the

place (Ren et al., 2020; Wen et al., 2020; Yu et al., 2020). To uncover other possible potential paths, the study underwent post-hoc analysis to investigate the indirect effects of consumers' perception of COVID-19. Results obtained by using SPSS PROCESS macro (model 4) (Hayes, 2013) indicated that perception of COVID-19 has a significant indirect effect on the affective destination image of Wuhan (β = -.14, ps <.05) mediated by travel risk, partially supporting H2a. Additionally, the construct of affective destination image of Wuhan has an indirect effect on travel intention to China (β = .47, ps <.001), mediated by affective destination image of China.

Discussion

Unlike the SARS epidemic in 2003, the COVID-19 pandemic is still an ongoing health crisis. While China has been a case study on empirical research related to destination image and crisis research (Becken et al., 2017; Tang, 2013), the first three months of the pandemic has brought about cutting-edge studies on how media coverage on the pandemic affected risk perceptions and destination image (Ren et al., 2020; Wen et al., 2020; Yu et al., 2020). The results of the study have brought us a few points of discussion in this section.

Despite the negative perception of COVID-19 illustrated in the descriptive statistics, findings have been highlighted in the hypotheses testing. Firstly, the perception of COVID-19 does heighten the risk perception of travel among Singapore consumers. However, it does not have any direct effect on the travel intention to Wuhan, nor any of the destination image constructs. This finding corroborated with the study on 2009 H1N1, where the perception of health-related crises is not a significant predictor of behavioural intention (Lee et al., 2012). Supported by previous research, perception of COVID-19 influences attitudes and other perceptions (Reisinger & Mavondo, 2005). While consumers have a negative perception of the coronavirus (indicating concerns and worry based on a mean score of 5.40 on a 7-point scale), it does not

directly affect destination image, nor travel intention to the "infected" destination. Instead, perceptions of COVID-19 only have indirect effects on the affective image of Wuhan when mediated by travel risks (β = -.14, ps <.05). This finding is noteworthy, since the affective destination image of Wuhan is the only image construct that is negatively affected by the perception of COVID-19 when respondents think of the risk travelling in the pandemic, and there were no statistically significant relationships between perceptions of COVID-19 and travel risk with other image constructs.

Similar to prior works, the negative perceptions of COVID-19 heightens the risk perceptions of travel, which results in evaluating the destination as less favourable (Chew & Jahari, 2014; Law, 2006; Rittichainuwat & Chakraborty, 2009). This is especially so during the first three months of the pandemic where the coronavirus is still an unknown entity. The world faced an unprecedented spread of a virus and lockdowns of cities, which inevitably results in heightened perceptions of travel risk among Singapore consumers. The role of media facilitates how people outside of China see Wuhan. Unlike Beijing and Shanghai, or other more touristy destinations like Hangzhou, Wuhan is not as well-known to Singaporeans as compared to Chinese locals. With only 13.2% of the Singapore sample been to Wuhan, the media coverage on Wuhan as the epicentre of COVID-19 would result in the Singapore sample associating the city's image with what was portrayed in the media they interact with (Becken et al., 2017). Thus, Singapore's affective destination image of Wuhan is the only image construct that is negatively affected by the perception of COVID-19 through perception of travel risk. This result is supported by previous studies where affective dimensions have been proven to be more influential as worry and panic accumulate, which is evident to influence destination image through risk in the context of a prolonged crisis (Becken et al., 2017; Chen et al., 2016; Li et al., 2018; Perpiña et al., 2020). Hence, media coverage and association of the pandemic with a

place is likely to skew a negative light on the destination, resulting in a more strongly negative affective evaluation to Wuhan (Wen et al., 2020; Yu et al., 2020).

Secondly, this research builds on previous research on the importance of affective evaluations of destinations, typically on its mediating effect between risk perceptions and travel intentions. Results showed that affective destination images of Wuhan and China are significantly influential to their cognitive counterparts, supporting the results of Becken et al.'s study (2017) on the "dominating effect of affective destination image" (Chen et al., 2016, cited in Becken et al., 2017, p.143). The key role of destination image as a mediator between the perception of travel risk and travel intention is supported by Chew and Jahari (2014), proving that perceptions of travel risk leads to negative (re)evaluations of destination images, and decreases the likelihood of repeat visits. Findings are congruent with expectations based on previous studies where affective evaluations have stronger influences than cognitive evaluations on the consumers' intention to travel to Wuhan and China soon (Becken et al., 2017; Perpiña et al., 2020).

Lastly, the results of this study do show the spill over effect of affective evaluations of Wuhan on the image perception of China (supported H6a and H6b). Existing studies showcased that major events have a spill over effect on the image of a place which then affects the destination image of the country due to media portrayal and stereotypes (Avraham, 2015). Novelli et al.'s (2018) study also illuminated the spill over effects of Ebola on destinations within physical proximity despite being not directly affected by the virus. A similar could be inferred for the case of Wuhan and China. With a negative perception of COVID-19 that causes worry and anxiety to one's personal safety, one is more likely to have concerns about travelling during the outbreak. This perceived risk of travelling then results in one having negative evaluations of the destination (Wuhan) as the destination induces affective images of distress. The spread of the virus across China, as well as the sudden announcement of lockdown of the city of

Wuhan and eventually the Hubei province, have no doubt led to fear and panic in the uncertainty. These emotions cause the spill over when the affective image of Wuhan affects how tourists perceive China cognitively (e.g. lack of high standards of hygiene, fears of personal safety) and affectively. These negative destination images of China, therefore, affect potential tourists' travel intention to the country.

Also, the portrayal of the destination on media as the epicentre of the pandemic further amplifies the risk of travel, and strengthens negative affective evaluations which are influential in lowering one's intention to travel to Wuhan (Wen et al., 2020; Yu et al., 2020). While the coronavirus does not discriminate age, race, religion and goes beyond geography, such media coverage does bring unnecessary discrimination not just to the destination, but also to people (locals and tourists) from China, or even Asia by large (Ren et al., 2020; Wen et al., 2020; Yu et al., 2020). This spill over effect is a concern that would make recovery post-COVID-19 harder for the global tourism industry.

Implications

Theoretically, this research built upon studies on risk perception and destination image in times of crises such as an outbreak of infectious disease, extending current studies beyond SARS and Avian Influenza, highlighting the possible impacts of incessant media coverage on risk perceptions, destination image, and travel intention (Law, 2006; Leppin & Aro, 2009; McKercher, 2003; Rittichainuwat & Chakraborty, 2009). This study has illustrated how potential tourists perceive the coronavirus due to media portrayals have an effect on their perceptions of travel risk, which influence their affective destination image of a destination highly associated with the pandemic. This study has extended destination image theory to a wider landscape, specifically elucidating the spill over effect of a destination image of a city (Wuhan) on the destination image of a country (China), as proven when the affective

destination image of the "infected" city of Wuhan is influential not only in the affective destination image of the country, but also the cognitive destination image of the country. This is a meaningful approach given it provided subtle insights into how tourists' destination images are correlated, and shaped based on perceptions of the country and its specific destination city, calling for more research attention to approaching destination image by considering tourists' pre-travel perceptions of both the country and that of a specific city.

Moreover, this study is also one of the few studies that examines how people outside of China perceive the Wuhan and China as a destination after the outbreak of COVID-19 (Wen et al., 2020; Yang et al., 2021), furthering the stream of research, integrating risk perception with destination image in the context of an ongoing crisis. Specifically, this study highlights to theory the significance of affective evaluations through the influences of affective destination image and risk perceptions on travel intention, and spill over effect to a greater region during an ongoing public health crisis (Li et al., 2018; Novelli et al., 2018). This finding corroborates previous studies, on recognizing the importance of affective destination evaluations (Perpiña et al., 2020), and furthers prior literature by illustrating the dominating effect of affective evaluations in times of an ongoing pandemic for the Singapore sample who relies on media coverage to evaluate Wuhan as a destination.

For practical implications, the study hopes to provide informative insights for destination marketers and practitioners on post-crisis image recovery through understanding the image of affected destinations. The findings from the study highlighted the importance of affective evaluation of destination perception, suggesting future destination marketing strategies to take an affective stance, stimulating positive emotions, or debunking previous negative images and associations (Chen et al., 2016; Perpiña et al., 2020) such as "counter-branding" (Becken et al., 2017, p.144). For example, as COVID-19 started in Huanan Seafood Wholesale Market, which sells live animals and exotic games, future image recovery of Wuhan could portray the

destination as a “destination with high standards of hygiene and cleanliness” or take an environmentally friendly stance of banning exotic game consumption. The segmentation targeting overseas Chinese, is imperative as immigrants who have roots in China are very likely to show charitable attitudes to the post-COVID-19 tourism recovery for international travel, as well as providing emotional and economic supports. The use of social media influencers to reimagine destinations through viral, creative, and authentic advertising can also be considered (Becken et al., 2017; Ong & Ito, 2019).

Conclusion

Linking concepts of risk perception and destination image, this study aims to provide insights on consumers’ evaluation of destinations in times of crisis and effects on their travel behaviours. This study is an initial investigation on the relationships between risk perceptions of COVID-19, travel risk during the outbreak, destination image of an affected city, and its consequent behavioural intentions based on the first three months of the global pandemic, centred in Asia. While the COVID-19 situation has spread even further globally, countries find themselves in different stages of dealing with the pandemic, implementing various countermeasures and recovery policies for the economy, as well as the slow revival of domestic and international tourism.

One limitation that the current research has is that, unlike previous studies which separate cognitive and affective risk perception (Becken et al., 2017; Chew & Jahari, 2014; Perpiña et al., 2020), this study utilized items that holistically evaluated risk perceptions and perceptions of COVID-19 (Brug et al., 2004; Lee et al., 2012; Leung et al., 2003). Separating the affective and cognitive dimensions may further accentuate the dual image-risk concept suggested by Perpiña et al. (2020). Another limitation to be taken note of was that the research was based on the first three months of the pandemic, which mostly happened in Asia. Then, it was unexpected

that COVID-19 would have swept through the globe, intrinsically changing lifestyles and impacting the tourism industry drastically. Future research could compare how other countries in Asia, such as South Korea or Japan, which are the top inbound tourist markets for China, perceive Wuhan and China due to the pandemic. Additionally, destination managers could benefit from the research comparing various stages of the ongoing pandemic, focusing on risk perception and destination image recovery through emotional or viral campaigns.

Declaration of Interest Statement

No potential conflict of interest was reported by the authors.

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Appendix

Table 1. Demographic profile of respondents (N=322)

	Frequency	%		Frequency	%
Gender			Travelled to China		
Male	167	50.3	No	115	34.6
Female	165	49.7	Yes, Once	72	21.7
			Yes, twice or more	145	43.7
Race					
Chinese	276	83.1	Travelled to Wuhan		
Malay	27	8.1	No	288	86.7
Indian	16	4.8	Yes, Once	36	10.8
Eurasian/Others	13	4.0	Yes, twice or more	8	2.4
Age			Education		
18-29	67	20.2	Primary school and below	4	1.2
30-39	66	19.9	Secondary School	45	13.6
40-49	66	19.9	Junior College/Polytechnic	89	26.8
50-59	67	20.2	Vocational/technical school	32	9.6
60-69	66	19.9	Bachelor's degree	135	40.7
			Master's degree/MBA/PhD	27	8.1

Table 2. Descriptive statistics and confirmatory factor analysis (N=322)

Constructs/Items	References	Mean	SD
Affective Destination Image of China (CR = .871, AVE = .774)			
AD_C1 Pleasant/Unpleasant	Baloglu & McCleary (1999); Beerli & Martin (2004)	3.26	1.574
AD_C2 Arousing/Sleepy*		3.61	1.546
AD_C3 Relaxing/Distressing*		2.80	1.524
AD_C4 Favourable/Unfavourable		3.10	1.678
Cognitive Destination Image of China (CR = .865, AVE = .764)			
CD_C1 High standards of hygiene and cleanliness	Baloglu & McCleary (1999); Beerli & Martin (2004)	3.11	1.685
CD_C2 High quality of infrastructure*		3.84	1.572
CD_C3 High levels of personal safety		3.48	1.561
CD_C4 A lot of interesting cultural and historical attractions*		4.51	1.577
CD_C5 A lot of food choices*		4.55	1.525
Affective Destination Image of Wuhan (CR = .912, AVE = .840)			
AD_W1 Pleasant/Unpleasant	Baloglu & McCleary (1999); Beerli & Martin (2004)	2.89	1.581
AD_W2 Arousing/Sleepy*		3.14	1.596
AD_W3 Relaxing/Distressing*		2.64	1.478
AD_W4 Favourable/Unfavourable		2.79	1.548
Cognitive Destination Image of Wuhan (CR = .895, AVE = .810)			
CD_W1 High standards of hygiene and cleanliness	Baloglu & McCleary (1999); Beerli & Martin (2004)	2.99	1.578
CD_W2 High quality of infrastructure*		3.67	1.608
CD_W3 High levels of personal safety		3.23	1.562
CD_W4 A lot of interesting cultural and historical attractions*		3.91	1.616
CD_W5 A lot of food choices*		4.04	1.604
Travel Risk (CR = .83, AVE = .555)			
TR_1 It is dangerous to travel with the current coronavirus situation	Brug et al (2004); Leung et al., (2003)	5.90	1.385
TR_2 People around me refrained from travelling during the current coronavirus situation.		5.80	1.251
TR_3 There is a risk of my family/friends disapprove of my choice to travel during the current coronavirus situation.		5.85	1.213

TR_4 There is a risk that I may contract the coronavirus if I travel.		5.97	1.117
Perception of COVID-19 (CR = .769, AVE = .544)			
COVID_1 The coronavirus is a frightening disease.		5.60	1.312
COVID_2 I am afraid of contracting the coronavirus.		5.54	1.313
COVID_3 Compared to SARS and Avian Influenza, the coronavirus is more dangerous.	Lee et al (2012)	5.06	1.486
COVID_4 I have confidence to survive the coronavirus if I get infected.*		4.91	1.284
Travel Intention			
Intention to visit Wuhan in the following 12 months after the end of the Coronavirus outbreak	Law (2006); Lee et al., (2012)	2.07	1.524
Intention to visit China in the following 12 months after the end of the Coronavirus outbreak		2.36	1.651

**Items removed in CFA.*

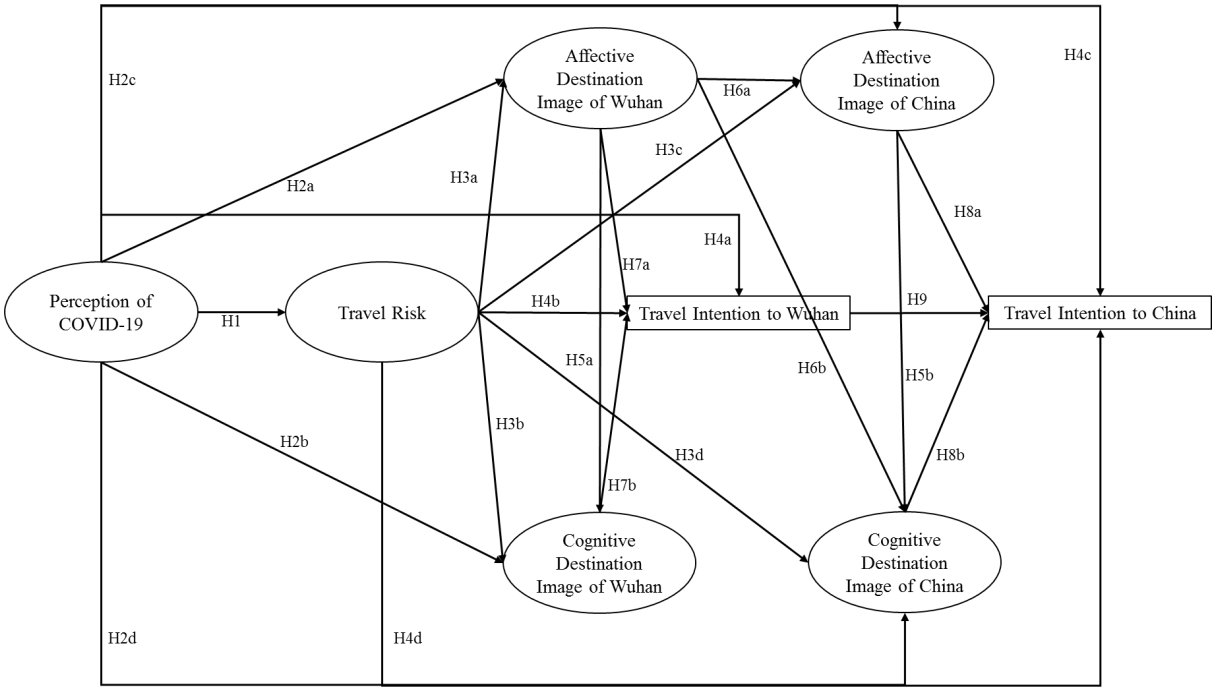

Fig. 1. Hypothesised model.

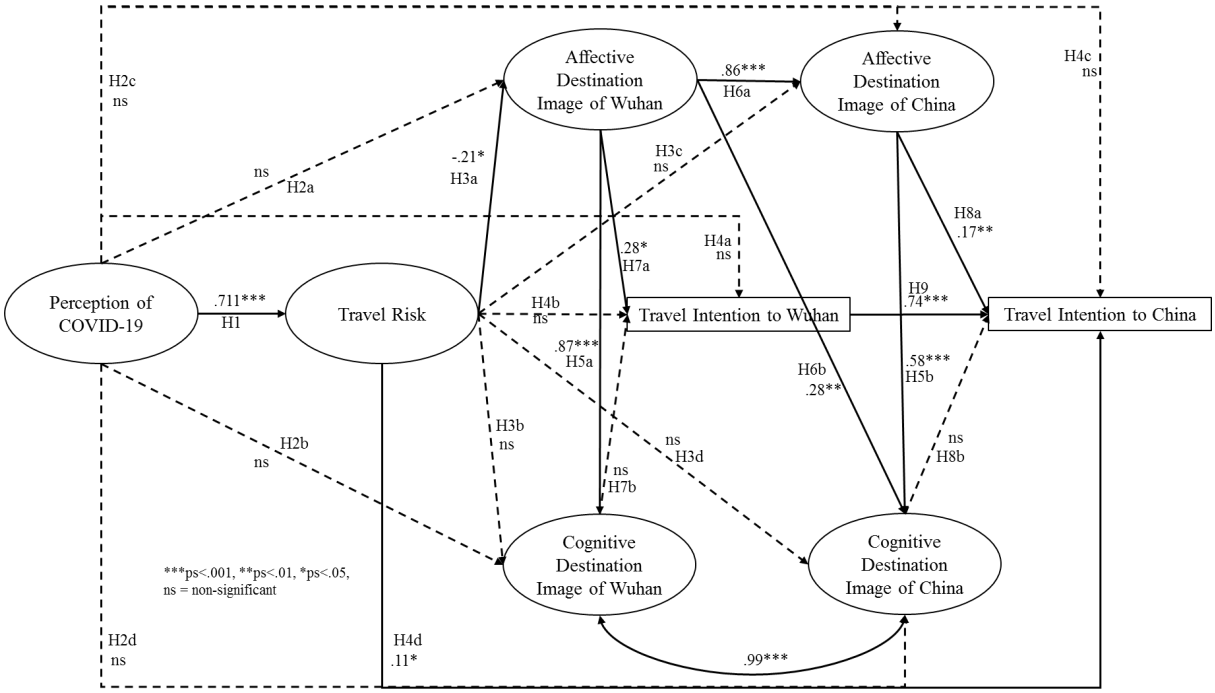

Fig. 2. Structural model with estimated path coefficients.

Figure Caption

Fig. 1. Hypothesised model.

Fig. 2. Structural model with estimated path coefficients.