Progress in Tourism Management

Crisis management research (1985–2020) in the hospitality and tourism industry: A review and research agenda

Tai Ming Wut [*,1], Jing (Bill) Xu, Shun-mun Wong

School of Professional Education and Executive Development, The Hong Kong Polytechnic University, HKSAR, Hong Kong, China

A B S T R A C T

The global tourism industry has already suffered an enormous loss due to COVID-19 (Coronavirus Disease 2019) in 2020. Crisis management, including disaster management and risk management, has been becoming a hot topic for organisations in the hospitality and tourism industry. This study aims to investigate relevant research domains in the hospitality and tourism industry context. To understand how crisis management practices have been adopted in the industry, the authors reviewed 512 articles including 79 papers on COVID-19, spanning 36 years, between 1985 and 2020. The findings showed that the research focus of crisis management, crisis impact and recovery, as well as risk management, risk perception and disaster management dominated mainstream crisis management research. Look back the past decade (2010 to present), health-related crisis (including COVID-19), social media, political disturbances and terrorism themes are the biggest trends. This paper proposed a new conceptual framework for future research agenda of crisis management in the hospitality and tourism industry. Besides, ten possible further research areas were also suggested in a TCM (theory-context-method) model: the theories of crisis prevention and preparedness, risk communication, crisis management education and training, risk assessment, and crisis events in the contexts of COVID-19, data privacy in hospitality and tourism, political-related crisis events, digital media, and alternative analytical methods and approaches. In addition, specific research questions in these future research areas were also presented in this paper.

1. Introduction

A crisis is defined as 'an unpredictable event that threatens important expectancies of stakeholders related to health, safety, environmental, and economic issues, which can seriously impact an organisation's performance and generate negative comments' (Coombs, 2019, p. 3). Today's hospitality and tourism industry is sensitive to various external and internal challenges and crises (Fink, 1986; Henderson, 2003; Laws et al., 2005; McKercher & Hui, 2004). According to McKercher and Hui (2004, p.101), crises 'disrupt the tourism and hospitality industry on a regular basis'. The reduction of tourist arrivals and expenditures due to the crises hits the industry and its related stakeholders; and creates vulnerability. Different service providers (consisting of those pertaining to accommodation, transportation, inbound and outbound tourism, and others) may have to suffer for a short or longer period of time before full

recovery. Moreover, pressures from competitors also worsened the situations for certain organisations due to the change in comparative and competitive advantages (Wut, 2019). Only a few studies in crisis management were conducted in the early years, and most of them related to crisis impacts on tourism industry (Blake & Sinclair, 2003). Fortunately, a growing body of crisis management studies in the hospitality and tourism industry has emerged over the past decade.

The scope of crisis management includes crisis prevention, crisis preparedness, crisis response and crisis revision (Hoise & Smith, 2004). Detecting any warning signs is an important task in crisis prevention. Crisis preparedness usually involves forming crisis management teams, formulating crisis preparedness plans and training spokespersons. Organisation response is usually under the spotlight. The mechanism by which we learn from a crisis is a central topic under crisis revision (Crandall et al., 2014). Unfortunately, crisis management received insufficient attention in the hospitality and tourism research for decades (Pforr & Hosie, 2008). This research stream started with natural disaster

management, terrorism and disease management (Laws et al., 2005). Recently, information technology has been heavily used in the business and tourism sectors (Buhalis & Law, 2008; Navio-Marco et al., 2018). Social media is becoming an emerging research focus that triggers new thoughts on crisis management in the contemporary world (Zeng & Gerritsen, 2014). Data security and privacy over confidential company information and customer personal information are the main concerns. Nowadays, given the global outbreak of the COVID-19 pandemic and the economic downturn faced by many countries, crisis management has again attracted organisational and research attention (Qiu et al., 2020a, b; Gössling et al., 2020).

Crisis management also involves risk management, as crisis happens when risk is not managed properly and effectively. For instance, if tourism providers do not pay attention to risk management may put the lives of the tourists at risk. According to Dorfman and Cather (2013), risk is the possibility of harm or possible loss. Risk refers to the fluctuation in neutral or negative outcomes that result from an uncertain event on the basis of probability. Risk management is a process in which an organisation identifies and manages its exposures to risk to match its strategic goals. The scope includes goals setting, risk identification, risk measurement, handling of risk and implementation techniques, and effectiveness of monitoring (Dorfman & Cather, 2013).

Crises in extreme scales with catastrophic consequences can be disasters. Disasters normally refer to events that an organisation cannot control, like natural disasters. Possible disaster events include terrorism, floods, hurricanes and earthquakes. The term 'crisis' has a broad meaning that includes events involving technical or human mistakes as well as disasters (Coombs, 2019; Faulkner, 2001). Thus, crisis management in this study covers both risk management and disaster management.

Several review papers on crisis management and recovery are available. Mair et al. (2016) conducted a review on post-crisis recovery with 64 articles published between 2000 and 2012. A short summary on tourism crisis and disaster was also published (Aliperti et al., 2019). Ritchie and Jiang (2019) reviewed 142 papers on tourism crisis and disaster management; and identified three areas including crisis preparedness and planning; crisis response and recovery; and crisis resolution and reflection. It was found that the papers, including the framework testing, lack conceptual and theoretical foundation, which exhibited unbalanced research themes (Ritchie & Jiang, 2019). A bibliometric study of citation networks was conducted by other researchers but only on the crisis and disaster management topic (Jiang, Ritchie, & Verreynne, 2019). The most recent one was focused on diseases (Chen, Law, & Zhang, 2020). The afore-said review articles followed the traditional classification of the three-stage crisis management model (pre-crisis, crisis event and post-crisis) (Richardson, 1994). A clear research gap exists in the review literature in terms of the kind of crisis management, risk management and disaster management research that has been conducted in the hospitality and tourism fields, especially in the digital era; and such research need becomes significant due to the spread of COVID-19. This current review paper considers risk management and disaster management as part of crisis management. This review scope is much wider than those of past review papers. Furthermore, past literature review emphasised only the research published in top academic journals. Zanfardini et al. (2016) concluded that analyses of literature should not be confined to the highest impact journals because crisis management is an interdisciplinary subject; and the related articles might not necessarily appear only in the top journals. Thus, surveying also the lower impact journals would be useful, and this study would also shed light on those works.

This study aims to systematically examine and evaluate the literature of crisis management in the hospitality and tourism industry. As the research areas emerge, more papers were recorded in the last decade. It is expected that many research papers on topics relating to the COVID-19 crises will be produced shortly in the near future. The major themes and future research opportunities and agenda will be identified after a thematic content analysis of related peer-reviewed journal articles.

This study seeks to address the following questions:

1) What are the main themes of the crisis management literature in the hospitality and tourism industry?
2) What is the future research agenda regarding the hospitality and tourism industry and crisis management?

2. Methodology

This systematic literature review adopted steps suggested by Liberati et al. (2009) for the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA): 1) related articles were identified through databases and other sources, 2) records were obtained after the duplicates were removed, 3) the records were screened, 4) full-text papers were assessed for eligibility and 5) the studies were included in the qualitative synthesis (Liberati et al., 2009).

We targeted our literature search on electronic databases for peer-reviewed journal articles that focused on crisis management in the hospitality and tourism industry and from journals published since 1980. The search included numerous academic platforms consisting of the ABI/Inform, Academic Research Premier (via EBSCO host), Business Source Complete (via EBSCO host), Web of Science and Scopus databases to capture academic journal papers with the captioned topic. This approach was considered suitable for a literature review analysis centred on a subject that has undoubtedly been researched from a multidisciplinary perspective (Wut et al., 2021). Literature search was organised around eight keywords consisting of 'tourism', 'hospitality', 'crisis', 'crisis management', 'risk', 'risk management', 'disaster' and 'disaster management'. Papers retained for subsequent analyses met the following criteria:

(i) Published in peer-reviewed journals since 1980;
(ii) Published in the English language;
(iii) Involves the field of business, management and accounting;
(iv) Seeks to study crisis management, including risk management and disaster management, in the tourism and hospitality industry;
(v) Comprise studies presenting primary or secondary research data published as full length papers or short reports;
(vi) Removal of duplicate papers from database findings (Same paper generated from different platforms).

In total, 1168 papers were generated from the literature search which involves different combinations of the aforementioned keywords. The earliest article was published in 1985. Overall, the selected articles were published between 1985 and 2020. Figures for 2020 are incomplete and given here for reference only. Authors assessed the full-text papers retrieved for inclusion in this review.

The titles, abstracts and full texts of the papers were reviewed and examined (Wut et al., 2021). Two coders were involved in the process to avoid subjective bias judgement from a single coder (Neuendorf, 2002). Discussions between coders were arranged to resolve the discrepancy (Krippendorff, 2013). After initial screening, 534 papers meeting the above criteria were selected. A subsequent step involved checking if the research questions of this study can be answered through analysing the papers in the database. A total of 22 papers were dropped as they could not answer one of the research questions. The final analysis involved 512 papers for subsequent descriptive analyses in various aspects like the number of authors, the first author's nationality and study locations. Papers involving more than one study location were classified under Global. Attention was paid to the themes of journals under the category of tourism, hospitality and others as business-related journals. Publications that covered both tourism and hospitality were classified under hospitality. We also identified the key topics of each article. These items were used for statistical analysis to identify longitudinal trends of

research themes. The papers were categorised under various hospitality and tourism industry sectors, including tour operators/travel agencies, hotels, airlines, restaurants and ocean cruising industry. They were then assigned to one of the six crisis types: political events, terrorism, health issues, financial crisis, natural disasters and human errors. The research foci of the articles were subsequently ascertained and summarised. The identification process was completed by content analysis for which an inductive approach was adopted. If any doubt regarding classification emerged for a particular paper, a new category was devised for that paper to minimise ambiguity (Eisenhardt, 1989). When more than one topic was discussed in a paper (for example, crisis prevention and crisis preparedness), the paper was classified under the category of crisis management (multiple topics). Thus, 10 specific research topics were obtained for a general crisis management area: crisis management (multiple topics), crisis impact, crisis recovery, crisis resilience, crisis communication, crisis response, crisis event (description), crisis preparedness, crisis prevention and crisis management (organisational) learning. Four research topics were identified for a general risk management area: risk management (multiple topics), risk perception, risk assessment and risk communication. Finally, three research topics were found for a general disaster management area: disaster management (multiple topics), disaster event (description) and disaster recovery. COVID-19 was categorised as a separate topic, as the related articles covered the areas in both crisis and risk management.

3. Findings

3.1. Journals, authors and study locations

The results indicated that 308 (60.2%) of the papers came from 10 journals; and 204 papers were come from other journals. Among these 10 journals, Tourism Management published 85 papers; Journal of Travel and Tourism Marketing published 44 papers, International Journal of Hospitality Management had 34 papers and Current Issues in Tourism had 33 papers. Annuals of Tourism Research published 26 papers, and Journal of Travel Research secured 25 papers. The publications were highly ranked according to the Scimago Journal and Country Ranking (SRJ). In the last decade, all these journals except for the Journal of Travel and Tourism Marketing published more papers than before (Table 1). Furthermore, other high ranking journals were included in the 'Others' category, including the Journal of Vacation Marketing with two papers. One paper appeared in the Public Relation Review, a top Journal in the field of public relations. Another paper was from the Journal of World Business, a first quarter journal according to the SRJ. Three other papers appeared in Asia Pacific Business Review, a

second quarter journal according to the SRJ. Thus, crisis management has been considered a hot research topic by the scholars and high ranking academic journals in the hospitality and tourism field.

As a whole, tourism-focused journals were comparatively favoured (286 papers) to hospitality (74 papers) or other (152 papers) journals on the crisis management topic and related research objectives. Among the tourism-focused journals, Tourism Management has been the dominant outlet. The number of papers increased by three times over the last decade. Among the hospitality journals, International Journal of Hospitality Management (34 papers) has been the most popular.

Regarding authorship, two authors collaboration (157 papers, 30.7%) has been found to be the most common occurrence in these papers. Three-person authorship was also highly adopted (143 papers, 27.9%), followed by single authorship for 129 papers (25.2%). Note that a total of 60 papers had four authors (11.7%), five authors (14 papers, 2.7%), six authors (7 papers, 1.4%), seven authors (1 paper, 0.2%), and eight authors (2 papers, 0.4%). Collaborations among authors are common. The most productive first authors in this field were Joan C. Henderson (9 papers), Bingjie Liu (9 papers), Bruce Prideaux (7 papers) and Brent W. Ritchie (6 papers). The most productive second authors were Lori Pennington-Gray (13 papers), Brent W. Ritchie (9 papers), Mehmet Altinay, Susanne Becken and Hany Kim (4 papers). Henderson comes from Nanyang Technological University and had publications in the early years (from 1999 to 2004). Liu is from the University of Florida. Most of her publications were related to bed bugs and were rather recent (from 2015 to 2016).

Location was studied for the first authors of the papers. The first authors tend to be most interested in the study topics relating to crisis management and may have secured fair level of research experience in this area. Europe (157 papers, 30.7%) had the greatest number of interested scholars who appeared as the first authors. This figure was followed by Asia (132 papers, 25.8%) and Oceania (110 papers, 21.5%). In Europe, the United Kingdom (59 papers) had the most interested scholars in this area. The first authors from Asia were mainly from Mainland China (29 papers), Israel, Singapore, Japan and Taiwan. The other first authors were from Australia (101 papers) and United States (88 papers) (Table 2 is a short version of this list. An extended version is in the Appendix).

In terms of the research context, Asia was the most studied region (152 papers, 29.7%), followed by Global (109 papers, 21.3%), and then Europe (101 papers, 19.7%). Several disasters occurred in Asia, including the Japan earthquakes in 2011, the Severe Acute Respiratory Syndrome (SARS) outbreak in 2003 and the Indian Ocean earthquake and tsunami in 2004. Many papers took a global or multiple countries approach (109 papers, 21.3%). First authors also tend to conduct research in his or her place-of-residence or nearby locations (Table 3).

An increasing trend emerged throughout the 36 years study period, as shown in Fig. 1. The number of articles in 2020 is listed for reference and some articles could not be presented due to availability issues. All papers, whether from tourism-focused journals, hospitality journals or journals in the other fields, generally displayed an upward trend (Fig. 2). Almost all top ten English-language academic journals in the tourism and hospitality field witnessed an increasing trend, except for the Journal of Travel and Tourism Marketing which experienced a

Table 1
List of tourism and hospitality journals (N = 512).

	1985–1996	1997–2008	2009–2020	Total
1. Tourism Management	3	19	63	85
2. Journal of Travel and Tourism Marketing	1	33	10	44
3. International Journal of Hospitality Management	2	4	28	34
4. Current Issues in Tourism	0	10	23	33
5. Annals of Tourism Research	0	4	22	26
6. Journal of Travel Research	0	9	16	25
7. Journal of Hospitality and Tourism Management	0	1	16	17
8. Journal of Sustainable Tourism	0	1	15	16
9. International Journal of Tourism Research	0	4	11	15
10. Tourism Geographies	0	0	13	13
11. Others	2	30	172	204
Total	**8**	**115**	**389**	**512**

Source: authors

Table 2
Location of first author (N = 512).

Continent	Frequency	Percentage
Europe	157	30.7
Asia	132	25.8
Oceania	110	21.5
North America	99	19.3
Africa	10	2
Latin America	4	0.8
Total	**512**	**100**

(Source: authors)

Table 3
Study location (N = 512).

| Continent	Frequency	Percentage
Asia	152	29.7
Global	109	21.3
Europe	101	19.7
North America	71	13.9
Oceania	55	10.7
Latin America	13	2.5
Africa	11	2.1
Total	422	100

(Source: authors)

downward trend (Fig. 3). The three periods were identified in the X-axis and spans 36 years. The first period from 1985 to 1996 reflects the start of the discussion about crisis management. Only six papers were published for 12 years. The second period of 1997–2008 involved 115 papers. During this period, most of the papers were published in the Journal of Travel and Tourism Marketing and in Tourism Management. The last period of 2009 to present involved 389 papers. Most of the papers were published in Tourism Management. At this period, as many as 63 papers were published in Tourism Management. The number of papers published in Tourism Management is almost the sum of the numbers of the first runner up, and second runner up. (Table 1).
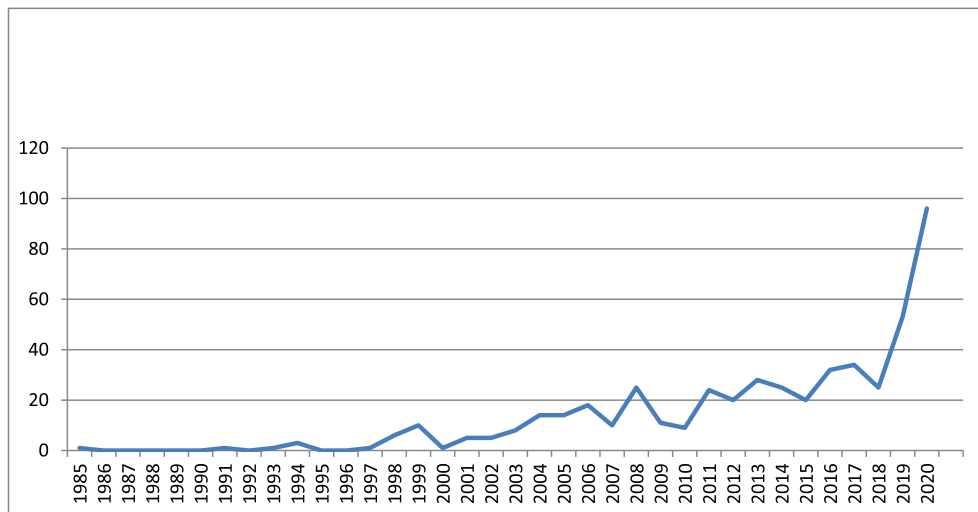
(Source: authors)

Fig. 1. Studies related to crisis management in the tourism and hospitality literature (1985–2020).
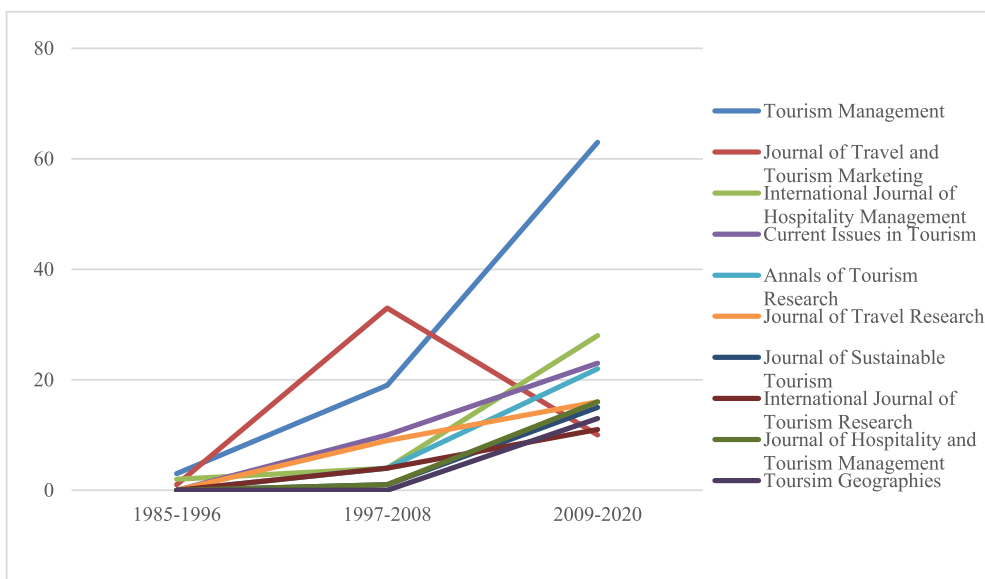(Source: authors)
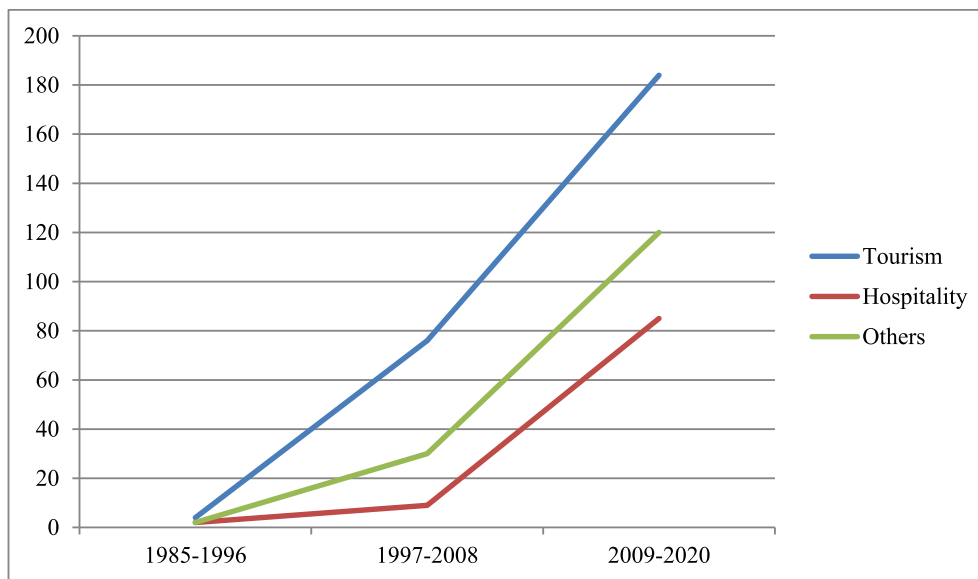
(Source: authors)

Fig. 2. Numbers of tourism and hospitality publications in English on crisis management.
(Source: authors)

(Source: authors)

Fig. 3. Top Ten Journals on crisis management.
(Source: authors)

3.2. Types of crises in the hospitality and tourism industry

The 512 papers revealed that five business sectors within the hospitality and tourism industry, an outcome which mirrored the findings of Wut et al. (2021) who performed a systematic review on corporate social responsibility research in the hospitality and tourism industry. The most commonly investigated industry sectors comprised tour operators/travel agencies, hotel operators, airlines, restaurants and ocean cruising sectors. Their crises types are summarised below for illustration purposes (Table 4):

Table 4
Typology of crisis types in hospitality and tourism industry (Source: authors).

Business type	Crisis Types	Context	Sources
Tour operator/ travel agencies	Political events	Occupy Central	Luo and Zhai (2017)
	Terrorism	9/11	Gut and Jarrell (2007)
	Health issues	Ebola	Novelli et al. (2018)
		SARS	Kuo et al. (2008)
		Food-and-mouth disease	Yeoman et al. (2005b)
	Financial crisis	Turkey	Okumus and Karamustafa (2005)
	Natural disasters	Tsunami	Rittichainuwat (2013)
Hotel operators	Natural disasters	Typhoons	Möller et al. (2018)
	Political events	Refugee	Ivanov and Stavrinoudis (2018)
	Human error-services	Bed bugs	Liu, Kim, and Pennington-Gray (2015)
		Complaints on social media	Salem (2015)
		Data security	Chen and Jai (2019)
Airline industry	Natural disasters	Typhoons	Möller et al. (2018)
	Human error-Air plane crash	Singapore Airlines	Henderson (2003a)
Restaurant industry	Health issues	SARS	Chuo (2014)
		Food safety	Seo et al. (2013); Seo et al. (2014)
Ocean cruising Industry	Human error -services	Complaints on social media	Ryschka et al. (2016)

Crisis types were previously organised under the three categories of natural disasters, technical error accidents and human error accidents, depending on the level of organisational responsibility. Limited organisational responsibility is clearly involved for natural disasters because those events are usually beyond operational control (Coombs, 2019). Only reactive strategies can be developed to minimise loss. A low level of organisational responsibility occurs on technical error accidents as the organisation can hardly do much about technical errors. However, organisations should bear the main responsibility for preventable crises as they involve human errors (Coombs, 2019). Natural disasters are the most common type, and the other two are mainly related to complaints on social media.

3.3. Methodological design of previous research

Almost half of the studies adopted quantitative research methods (215 studies, 42%). Approximately 34% of the papers relied on qualitative research methods (174 studies). Only 24 studies (4.7%) integrated both qualitative and quantitative research methods. And there also appeared 99 conceptual papers. In terms of research design, exploratory design (qualitative) dominated (159 studies, 31.1%). Most researchers used in-depth interview and focus group in exploratory design. This research design is followed by adopting primary data from surveys (139 studies, 27.1%) and using secondary data and databases (74 studies, 14.5%). For the statistical and analytical methods of research, the main method was identified for each paper. Most qualitative studies relied on case studies (85 studies, 16.6%) and content analysis (81 studies, 15.8%). Descriptive analysis (54 studies, 10.5%) and regression analysis (40 studies, 7.8%) were primarily used in the quantitative studies. When appeared more than one method of analysis was utilised (for example, both descriptive and regression analysis), only the most complex method was counted (in this case, regression analysis) (Table 5).

3.4. Traditional Research focus

The research themes in the literature were organised in such manner: Papers with a specific topic of crisis management, risk management or disaster management were grouped under the category carrying the name of the focal topic, such as crisis impact, crisis recovery and risk

Table 5
Analysis by research methodology (N = 512).

Type/design	Frequency	Percentage (%)
Research type		
Quantitative	215	42
Qualitative	174	34
Conceptual	99	19.3
Mixed method (Quantitative + Qualitative)	24	4.7
Research design		
Exploratory design (qualitative)	159	31.1
Survey	139	27.1
Conceptual/Others	116	22.7
Secondary data	74	14.5
Mixed method	24	4.7
Statistical/analysis method		
Case study	85	16.6
Content analysis	81	15.8
Descriptive analysis	54	10.5
Regression analysis	40	7.8
Structural equation modelling	30	5.9
Mixed	22	4.3
Factor analysis	16	3.1
Analysis of Variance	13	2.5
Time Series	13	2.5
Correlation analysis	8	1.6
Chi-square test	6	1.2
Cluster analysis	6	1.2
T-test/Mann-Whitney test	5	1.0
Qualitative comparative analysis	3	0.6
Conjoint analysis	1	0.2
Not applicable/Other	129	25.2
Total	512	100

(Source: authors)

perception. Papers on crisis management in general (Beirman, 2001) or focusing on crisis management in relation to other topics, for example, brand management (Balakrishnan, 2011), or those on more than one topic of crisis management such as crisis preparedness and organisational learning (Anderson, 2006) were all included under a category named "Crisis management/with multiple topics". Similar logic was applied to the "Risk management/with multiple topics" category, which included papers embracing risk management in general (Angel et al., 2018) or multiple topics regarding risk identification, the influential factors and related risk management practices (Chen, 2013). This logic was further applied to the "Disaster management/with multiple topics" category. Another category refers to COVID-19, which has been a hot topic since last year. All the COVID-19 papers that concerned about crisis and/or crisis management were put under this separate category. Such arrangement could help summarise the focuses and trends of COVID-19 research and facilitate the researchers who may have continuing interests to explore further in future years. Lastly, the remaining papers hardly put into previous categories were put under the category of others. As a result of adopting the above rationale in papers classification, among the reviewed studies, 16% (82 papers) were related to crisis management/with multiple topics and 15.4% (79 papers) related to COVID-19. These two primary categories were found in terms of the number of papers collected (Table 6). Risk management/-with multiple topics is the second runner-up with 13.7% (70 papers). Risk perception was found with 44 papers (8.6%). Crisis impacts involved 32 studies (6.3%), and crisis recovery was examined in 31 studies (6.1%). Further, fairly sufficient, 21 papers focused on crisis resilience (4.1%), 18 papers investigated crisis communication (3.5%) and 15 papers examined crisis response (2.9%). Disaster management/with multiple topics was studied by 20 papers (3.9%), and disaster recovery was investigated in 16 papers (3.1%). The areas worthy of significant note have collected even less than 10 papers in the study period, inclusive of crisis preparedness and prevention, learning, risk assessment and communication (Table 6).

The most explored research foci in the study period included crisis management/with multiple topics, risk management/with multiple

Table 6
Crisis management research focus (N = 512).

Key topics	Frequency	Percentage	Sources
Crisis management/ with multiple topics	82	16	Alonso-Almeida and Bremser (2013); Anderson (2006); Aslam et al. (2014); Aureli et al. (2017); Balakrishnan (2011); Beirman (2001); Bilić et al. (2017); Blackman et al. (2011); Bonn & Rundle-Thiele (2007); Boukas and Ziakas (2014); Çakar (2018); Campiranon and Arcodia (2008); Cavlek (2006); Cheung and Law (2006); Chien and Law (2003); Carlsen and Liburd (2008); Chuo (2014); Clements (1998); Cohen and Neal (2010); Cohen (2010); Constanta and Constantin (2009); Cushnahan (2004); de Sausmarez (2007b); Donohoe et al. (2015); Evans and Elphick (2005); Farmaki (2021); Ferguson et al. (2017); Fung et al. (2020); Gruman et al. (2011); Henderson (1999a); Henderson (1999b); Huang et al. (2008); Iaquinto et al. (2017); Israeli (2007); Israeli et al. (2011); Israeli and Reichel (2003); Jallat and Shultz (2011); Jauhari (2009); Jauhari et al. (2009); Jawabreh (2019); Jones (2016); Kovaltchuk et al. (2016); Laws and Prideaux (2006); Liu (2014); Machado (2012); Milán et al. (2016); Miller and Ritchie (2003); Monterrubio (2017); Novelli et al. (2018); O'Brien (2012); O'Connor et al. (2008); Okumus and Karamustafa (2005); Page et al. (2006); Paraskevas et al. (2013); Pennington-Gray (2014); Pennington-Gray, Schroeder, and Gale (2014); Peters and Pikkemaat (2006); Pforr and Hosie (2008); Pike (2008); Pottorff and Neal (1994); Prideaux (1999); Prideaux et al. (2003); R-Toubes, Araújo-Vila, and Fraiz-Brea (2020); Racherla and Hu (2009); Ritchie (2004); Rittichainuwat (2013); Santana (1999); Santana (2004); Scott and Laws (2006); Schmude et al. (2018); Sharma et al. (2012); Sönmez (1998); Sönmez et al. (1999); Speakman and Sharpley (2012); Taylor (2006); Tew et al. (2008); Valencia and Crouch (2008); Vargas (2018); Williams and Ferguson (2005); Xu and Grunewald (2009); Yeoman, Lennon, and Black (2005); Yu et al. (2005)
COVID-19	79	15.4	Aburumman (2020); Alonso et al. (2020); Awan et al. (2020); Bajrami et al. (2020);

(continued on next page)

Table 6 (*continued*)

Key topics	Frequency	Percentage	Sources
			Baum and Hai (2020); Baum et al. (2020); Bausch et al. (2020); Benjamin et al. (2020); Bera et al. (2020); Breier et al. (2021); Brouder (2020); Butler (2020); Cardoso (2020); Carr (2020); Chadee et al. (2021); Chatzitheodoridis and Kontogeorgos (2020); Chen, Huang & Li (2020); Chen, Law & Zhang (2020); Couret (2020); Crossley (2020); Farmaki et al. (2020); Filimonau et al. (2020); Foroudi et al. (2021); González -Torres et al. (2021); Hall et al. (2020); Hang et al. (2020); Hao et al. (2020); Haywood (2020); Higgins-Desbiolles (2020); Hu et al. (2021); Ianioglo and Rissanen (2020); Im et al. (2021); Ioannides and Gyimóthy (2020); Ivanov et al. (2020); Jaipuria et al. (2020); Jiang and Wen (2020); Jones and Comfort (2020); Karl et al. (2020); Kaushal and Srivastava (2021); Kim and Lee (2020); Knight et al. (2020); Koh (2020); Kukanja et al. (2020); Lai and Wong (2020); Lee et al. (2020); Li et al. (2020); Loi et al. (2020); Manoharan et al. (2021); Matiza (2020); Miles and Shipway (2020); Mostafanezhad (2020); Neuburger and Egger (2020); Newsome (2020); Ocheni et al. (2020); Pappas and Glyptou (2021); Pardo and Ladeiras (2020); Park et al. (2020); Polyzos et al. (2020); Prideaux et al. (2020); Qiu et al. (2020a,b); Qiu et al. (2021); Renaud (2020); Rowen (2020); Rutynskyi and Kushniruk (2020); Seraphin (2020); Škare et al. (2020); Tomassini and Cavagnaro (2020); Turnšek et al. (2020); Uğur and Akbıyık (2020); Vargas (2020); Vo-Thanh et al. (2020); Wen et al. (2020); Wong et al. (2020); Yang et al. (2020); Yeh (2020); Zenker and Kock (2020); Zhang, Xie, et al. (2020); Zhang, Hou, and Li (2020); Zheng et al. (2021)
Crisis impact	32	6.3	Alonso-Almeida et al. (2016); Babaita et al. (2006); Baxter and Bowen (2004); Blake and Sinclair (2003); ; Bronner and de Hoog (2014); Casado (1998); Chandler (2004)Chen and Jai (2019); Chen (2011); Gut and Jarrell (2007); Henderson (1999c); Ivanov and Stavrinoudis (2018); Jin et al. (2019); Jones et al. (2011); Khalid et al. (2020); Kubickova et al. (2019); Kuo et al. (2008); Okumus et al.

Key topics	Frequency	Percentage	Sources
			(2005); Pappas and Papatheodorou (2017); Ritchie et al. (2014); Seo et al. (2013); Seo et al., 2014; Smorfitt et al. (2005); Tsai et al. (2016); U & So (2020); Walters et al. (2019); (Wang, 2009c); Woosnam and Kim (2014); Yeoman, Lennon, and Black (2005); Yu et al. (2020); Zenker et al. (2019)
Crisis recovery	31	6.1	Alan et al. (2006); Armstrong and Ritchie (2008); Avraham and Ketter (2017); Avraham (2015); Beirman (2018); Campiranon and Scott (2014); Carlsen and Hughes (2008); Chacko and Marcell (2008); Cohen (2008); de Sausmarez (2007a); de Sausmarez (2013); Gu and Wall (2006); Gurtner (2016); Henderson (2003b); Huang and Min (2002); Ioannides and Apostolopoulos (1999); Kim et al. (2019); Ladkin et al. (2008); Mansfeld (1999); Martín-Consuegra et al. (2008); Ostrowski (1985); Pizam (1999); Prideaux and McNamara (2013); Prideaux et al. (2008); Richter (1999); Ryu et al. (2013); Scott et al. (2008); Southon and van der Merwe (2018); Stafford et al. (2002); Volo and Pardew (2013); Walters and Mair (2012)
Crisis resilience	21	4.1	Bec et al. (2016); Burnett and Johnston (2020); Buultjens et al. (2016); Cartier and Taylor (2020); Chowdhury et al. (2019); Dahles and Susilowati (2015); Espiner et al. (2017); Hajibaba et al. (2015); Jiang, Ritchie, and Benckendorff (2019); Rittichainuwat et al. (2020); Knowles (2019); Lew (2014); Liu et al. (2020); Liu and Pratt (2017); Orchiston (2013); Orchiston et al. (2016); Pappas (2018); Paraskevas and Quek (2019); Prayag et al. (2018); Tsao and Ni (2016); Zeng et al. (2005)
Crisis communication	18	3.5	Avraham (2013); Daye (2014); Fall and Massey (2006); Farajat et al. (2017); Henderson (2003a); Herrero and Pratt (1998); Huertas and Oliveira (2019); Koc (2013); Liu, Kim & Pennington-Gray (2015a); Liu, Pennington-Gray, and Krieger (2015c); Liu et al. (2019); Pappas (2019); Ritchie et al. (2004); Volo (2008); Waller and Iluzada (2020); Walters et al. (2016); Zhai et al. (2020); Zhai et al. (2019)
Crisis response	15	2.9	Cooper (2005); Davidson (1993); de Sausmarez (2004); Green et al. (2004); Hajibaba et al. (2017); Henderson and Ng (2004); Hitchcock and

Table 6 (*continued*)

Key topics	Frequency	Percentage	Sources
			Darma Putra (2005); Hollier (1991); Leslie and Black (2006); Liu, Pennington-Gray, and Krieger (2016); Liu-Lastres et al. (2020); Mansour et al. (2019); Morakabati et al. (2017); Poria et al. (2014); Taylor and Enz (2002)
Crisis event (description)	10	2.0	Biggs et al. (2012); Christou (2017); Hall (2010); Hitchcock (2001); Johnson et al. (2019); Mar-Molinero et al. (2017); Marvel and Johnson (1997); Oshins and Sonnabend (1998); Prideaux (2013); Sano and Sano (2019)
Crisis preparedness	9	1.8	Aliperti et al. (2019); Barton (1994); Niininen and Gatsou (2008); Pennington-Gray et al. (2011); Pennington-Gray, Schroeder, Wu, et al. (2014); Ritchie et al. (2011); Rousaki and Alcott (2006); Smith and Kline (2010); Wang and Ritchie (2012)
Crisis prevention	7	1.4	Beeton (2001); Hajibaba et al. (2016); Matheson and Finkel (2013); Paraskevas and Altinay (2013); Paraskevas and Arendell (2007); Sharpley and Craven (2001); Yoon and Shanklin (2007)
Crisis management (Organisational) learning	2	0.4	Blackman and Ritchie (2008); Ghaderi et al. (2014)
Risk management/ with multiple topics	70	13.7	Aliperti and Cruz (2019); Angel et al. (2018); Armenski et al. (2018); Ballotta et al. (2020); Becken and Hughey (2013); Bentley and Page (2008); Berdychevsky and Gibson (2015); Bharwani and Mathews (2012); Biao et al. (2014); Blackman and Haworth (2013); Cahyanto et al. (2016); Cerviño and Cubillo (2005); Chang et al. (2019); Chen (2013); Chen et al. (2009); Chen et al. (2018); Chetty and Ndlovu (2018); Clinch and Filimonau (2017); Clua (2018); Coghlan et al. (2017); Córdoba Azcárate (2019); Cunliffe (2004); Cunliffe (2002); Dalbor et al. (2014); Daniels et al. (2013); Dayour et al. (2020); Demir et al. (2020); Díaz et al. (2015); Donohoe (2011); Dwyer et al. (2014); Franzoni and Pelizzari (2019a); Franzoni and Pelizzari (2019b); Furunes and Mykletun (2012); George (2017); Gstaettner et al. (2019); Gstaettner et al. (2017); Hillman (2019); Jeon et al. (2006); Jeuring and Becken (2013); Jones and Yamamoto (2016); Jung et al. (2019); Kim and Kim (2008); Kubo et al. (2019); Loehr (2020); Mertzanis and Papastathopoulos (2021);

Table 6 (*continued*)

Key topics	Frequency	Percentage	Sources
			Mikulić et al. (2018); Minato and Morimoto (2011); Orchiston (2012); Oroian and Gheres (2012); Pegg et al. (2011); Pérez-Rodríguez and Santana-Gallego (2020); Peter et al. (2014); Philander et al. (2016); Rantala and Valkonen (2011); Sun et al. (2017); Shaw et al. (2012); Song et al. (2019); Steiger et al. (2019); Stensland (2013); Tan et al. (2017); Tang et al. (2019); Tang and Jang (2011); Tiwari et al. (2019); Tsai and LinLiu (2017); Vij (2019); Waikar et al. (2016); Wilks (2017); Williams and Baláž (2013); Williams et al. (2020); Zhang, Paraskevas, and Altinay (2019);
Risk perception	44	8.6	Böhm and Pfister (2011); Bonn et al. (2020); Carballo et al. (2017); Cater (2006); Chang (2009); Chang (2011); Chew and Jahari (2014); Choi et al. (2020); de Urioste-Stone et al. (2016); George (2010); Gjerald and Lyngstad (2015); Hopkins and Maclean (2014); Hossain et al. (2015); Huebner (2012); Hunter-Jones et al. (2008); Jalilvand and Samiei (2012); Kapuściński and Richards (2016); Kaushik and Chakrabarti (2018); Kim et al. (2020); Lepp and Gibson (2011); Lepp et al. (2011); Liu, Schroeder, et al. (2016); Liu-Lastres et al. (2020); Mitchell (2006); Pröbstl-Haider et al. (2016); Quintal and Phau (2015); Rashid and Robinson (2010); Schroeder, Pennington-Gray, Kaplanidou, and Zhan (2013); Shakeela and Becken (2015); Sohn and Yoon (2016); Taher et al. (2015); Thapa et al. (2013); Toohey et al. (2003); Trawöger (2014); Vousdoukas et al. (2009); Wang, Liu, Ritchie, and Mills (2019); Wolff and Larsen (2013); Wong and Yeh (2009); Wu et al. (2019); Wu et al. (2017); Yang et al. (2018); Yin et al. (2020); Yüksel and Yüksel (2007); Zhang, Cho, and Wang (2019)
Risk assessment	9	1.8	Lovelock (2004); Morgan and Kazi (2002); Olya and Alipour (2015); Roe et al. (2014); Rutty et al. (2017); Sofiichuk (2018); Tsai and Chen (2010); Tsai and Chen (2011a); Tsai and Chen (2011b)
Risk communication	1	0.2	Heimtun and Lovelock (2017)
Disaster management/with multiple topics	20	3.9	Aguirre and Ahearn (2007); Bhaskara et al. (2020); Bhati et al. (2016); Chan et al. (2019); Cioccio and Michael (2007); Dawson et al. (2016); Faulkner and Vikulov (2001);

Table 6 (*continued*)

Key topics	Frequency	Percentage	Sources
Disaster recovery	16	3.1	Faulkner (2001); Filimonau and De Coteau (2020); Ghaderi et al. (2015); Granville et al. (2016); Hughey & Becken (2016); Hystad and Keller (2006); Hystad and Keller (2008); Jiang and Ritchie (2017); Jiang, Ritchie, and Benckendorff (2019); Ritchie and Jiang (2019); Ritchie (2008); Stahura et al. (2012); Tsai et al. (2020)
Disaster event (description)	11	2.1	Backer and Ritchie (2017); Basurto-Cedeño and Pennington-Gray (2016); Biran et al. (2014); Durocher (1994); Lamanna et al. (2012); Lee and Hyun (2016); Lin et al. (2018); Loperena (2017); Mair et al. (2016); Okuyama (2018); Orchiston and Higham (2016); Walters and Clulow (2010); Wearing et al. (2020); Yang et al. (2011); Zavar et al. (2020); Zhang and Yan (2012)
Others	35	6.8	Cohen (2009); Cohen (2011); Coles (2004); Craig (2019); Henderson (2005); Henderson (2007); Huan et al. (2004); Jitpraphai et al. (2017); Korstanje et al. (2012); Prideaux (2004); Rosselló et al. (2020) Bentley et al. (2010); Buckley (2012); Hansen, Hjalager, and Fyall (2019); Hansen, Rogers, et al. (2019); Jackson (2019); Kandir et al. (2015); Kennedy (1998); Miller et al. (2017); Morgan (2000); Stanbury et al. (2005); Wang, Liu, Ritchie, and Pan (2019); Wu and Cheng (2018); Yan et al. (2016); Antony and Jacob (2019); Barbe et al. (2018); Becken et al. (2017); Ćurlin et al. (2019); Liu, Kim, and Pennington-Gray (2015); Liu, Pennington-Gray, and Klemmer (2015); Luo and Zhai (2017); Möller et al. (2018); Park et al. (2019); Ryschka et al. (2016); Salem (2015); Schroeder and Pennington-Gray (2015); Schroeder et al. (2018); Schroeder, Pennington-Gray, Kaplanidou, and Zhan (2013); Schweinsberg et al. (2020); Sigala (2011); Sigala (2012); Su et al. (2019); Tolkach (2018); Vu et al. (2019); Zeng and Gerritsen (2014); Zhai and Luo (2018)
Total	**512**	**100**	

topics, and disaster management (event). Crisis impact and crisis recovery, as well as risk perception also involved more than 30 papers respectively, that can represent the traditional focus of crisis management research at the theoretical level. The COVID-19 theme has more than 70 papers published (N = 79) in 2020, which surprisingly made it as one of the top ranking research themes in the summary. Its discussion

will be presented in the next section involving the emerging research themes over the last decade (2010 to present).

3.4.1. Crisis management/with multiple topics

Crisis management has attracted academic attention for the entire study period. Anticipating crises and responding to them accordingly is crucial (Henderson, 1999a). A crisis or disaster management framework based on the model by Fink (1986) was proposed. Six elements of responses were suggested: precursors, mobilisation, action, recovery, reconstruction and re-assessment, and review. Risk assessment and disaster contingency plans were provided (Faulkner, 2001). The crisis management framework of Ritchie (2004) follows the prescriptive model Richardson (1994) applied on the tourism industry: pre-crisis; crisis event and post crisis. This 'one size fits all' approach might cater to all sudden events (Speakman & Sharpley, 2012).

By contrast, chaos theory assumes a random, complex and dynamic situation. That theory was used to explain the Mexican H1N1 crisis. Companies in the tourism industry operate in a relatively stable situation but are subject to unexpected attacks. The trigger case in Mexico is an outbreak of the H1N1 disease (Coles, 2004; Speakman & Sharpley, 2012).

Co-management's characteristics 'have been identified in the literature: (1) pluralism, (2) communication/negotiation, (3) transactive decision-making, (4) social learning, and (5) shared action/commitment' (Pennington-Gray et al., 2014a, 3). That management refers to combining resources from various stakeholders in the community for crisis management (Pennington-Gray et al., 2014a).

Researchers neglected crisis preparation and organisational learning in the tourism industry (Clements, 1998; Cheung & Law, 2006; Anderson, 2006). In practice, large companies do have crisis management plans, unlike small business and tourism operators (Cushnahan, 2004; Gruman et al., 2011).

3.4.2. Crisis impact

The Asian financial crisis and global economic crisis of 2008/09 affected the tourism industry (Boukas & Ziakas, 2013; Henderson, 1999c; Jones et al., 2011). In these events, people generally lost their spending power. If a host country suffers from a domestic crisis, then it usually attracts more visitors from other countries because of devaluation of the host country's currency (Khalid et al., 2020). The lower demand for local tourism is counter-balanced by the arrival of more international tourists.

Usually, crisis impact could be measured by the drop of the number of inbound or outbound tourists and the spending of visitors (Jin et al., 2019; Khalid et al., 2020; Wang, 2009). In turn, the impact would be reflected by economic indicators, such as the unemployment rate of the tourism industry (Blake & Sinclair, 2003). People must also be convinced that everything is back to normal before they travel again.

The studies concentrated on sales loss and the drop in customers (Jones et al., 2011; Liu, 2014). Financial ratio analysis is more objective but usually cannot capture instant impacts. Few investigations employed stock price to measure the effect of crises. Abnormal returns were a good indicator of the future earnings of a listed company (Seo et al., 2014). Another dimension is the emotional aspect. Anger and outrage are emotional responses from customers. These reactions produce intangible effect on corporations (Coombs & Holladay, 2010).

Aside from the economic impact, environmental and social cultural impacts must also be considered. For instance, the natural environment is vulnerable to disaster risks. Pollution problems could also affect the image of a city such as Beijing (Tsai et al., 2016). From a social cultural perspective, local culture should be protected and revived.

3.4.3. Crisis recovery

The process wherein tourism operators' attempt to return to normal business and achieves good economic performance after a crisis is called crisis recovery (Coombs, 2019). Various crisis recovery approaches were

proposed. Restoration of confidence, media role, other stakeholder support and speed of the response are critical success factors for crisis recovery (de Sausmarez, 2007a). Analysis of the crisis, audience and place must be conducted before formulating a media strategy. The message source, target audience and the message itself are essential features for designing the media strategy in attempt to repair the image of the place (Avraham & Ketter, 2017). In summary, image recovery is vital (Ryu et al., 2013).

Other than media strategy, turnaround strategies usually entail increasing income and decreasing cost (Campiranon & Scott, 2014). Price discount appears to be a common recovery strategy applied in the hospitality and tourism industry (Kim et al., 2019; Okuyama, 2018).

A marketing program is a usual tactic in crisis recovery (Carlsen & Hughes, 2008; Chacko & Marcell, 2008; Ladkin et al., 2008). Celebrity endorsement was also one of the best ways for implementing recovery marketing plans. Marketing campaigns should be continued after a crisis (Walters & Mair, 2012). Some researchers expressed reservations about marketing programs. They instead prefer a demarketing approach if the place was seriously damaged and remains unsafe for visitors (Orchiston & Higham, 2016).

3.4.4. Risk management/with multiple topics

Risk management is important for business operations (Bharwani & Mathews, 2012). However, different companies may present different levels of risk appetite in terms of their willingness to manage risks (Zhang, Paraskevas, & Altinay, 2019). The main types of business risks include operating risks, strategic risks and financial risks (Harland et al., 2003). Financial risks can be categorised as systematic (common to whole economy) and unsystematic risks (firm-specific) (Chen, 2013). According to Oroian and Gheres (2012), all internal risks (e.g. organisational risks) and external risks (e.g. nature, competitiveness, economic, political and infrastructure risks) should be considered. Chang et al. (2019) found that financial risks, competing risks and supply chain risks may be classified as high priority by the travel industry.

Given the nature of the industry, hospitality and tourism companies may possibly face more particular environmental risks (Böhm & Pfister, 2011; Cunliffe, 2004; Hillman, 2019), such as the weather conditions and climate change (Ballotta et al., 2020; Bentley et al., 2010; Córdoba Azcárate, 2019; de Urioste-Stone, 2016; Hopkins & Maclean, 2014; Steiger et al., 2019; Tang & Jang, 2011), which will result in financial risks (Franzoni & Pelizzari, 2019b) and other types of business risks for companies.

Regarding risk management and practices, various risk mitigation and reduction strategies have been studied. Loehr (2020) proposed a Tourism Adaptation System for this purpose. Portfolio analysis was adopted for risk reduction and management in the industry (Minato & Morimoto, 2011; Tan et al., 2017). The scenario planning approach was also employed by Orchiston (2012) for risk forecasting. Safety and security measures, through security checkpoints, security systems and procedures, are of vital importance in operational strategies (Daniels et al., 2013; Peter et al., 2014). However, Rantala and Valkonen (2011) argued that safety issues in the hospitality and tourism industry are complex because of the infrastructure and technology, lack of experiences for customers and employees, and the safety culture in the industry. Vij (2019) examined the views of senior managers in the hospitality industry and highlighted the urgent safety need regarding cyberspace and data privacy. Stakeholder collaboration might be also considered for sharing the responsibility in risk management (Gstaettner et al., 2019). As for the aspect of risk transfer, insurance contracts (Dayour et al., 2020; Franzoni & Pelizzari, 2019a) is a traditional focus for mitigating the negative impacts through transferring the risks to third parties. Nevertheless, that approach was not a common practice in the industry (Waikar et al., 2016).

3.4.5. Risk perception

This work found that many risk perception-focused studies were conducted in the tourism context. Mass tourists are generally risk adverse in unfamiliar surroundings. The risks related to health, crime, accident, environment and disasters greatly affect the tourists' decision-making (Carballo et al., 2017; George, 2010; Hunter-Jones, 2008). Some studies categorised those risks into physical, financial, psychological and health risks (Jalilvand & Samiei, 2012; Sohn & Yoon, 2016). According to Carballo et al. (2017), some risks for tourists can be controllable (e.g. illness and sunburn), whereas others are not.

The causes leading to the risk perceptions of tourists included demographic (e.g. age and nationality) and individual trip-related characteristics (e.g. visit purpose and frequency of travel) (George, 2010; Jalilvand & Samiei, 2012), past experiences (Schroeder, Pennington-Gray, Donohoe, & Kiousis, 2013), marketing communications (Lepp et al., 2011; Liu-Lastres et al., 2020), media effects (Kapuściński & Richards, 2016; Rashid & Robinson, 2010), mega-events, such as the FIFA World Cup) (Lepp & Gibson, 2011) or Olympic Games (Schroeder, Pennington-Gray, Donohoe, & Kiousis, 2013), as well as the destination risk management measures (Toohey et al., 2003). Different directions of research or research findings were noted. Rashid and Robinson (2010) believed that the media effects exaggerated the risk perceptions. Kapuściński and Richards (2016) found that the media could either amplify or attenuate risk perceptions. George (2010) and Jalilvand and Samiei (2012) tended to compare the tourists' gender, age and trip-related characteristics for risk perception, but the latter study found more obvious difference among the groups.

Risk perceptions were also found to negatively impact various constructs. However, the dependent variables were overwhelmingly concentrated on destination image (Chew & Jahari, 2014; Lepp et al., 2011; Liu-Lastres et al., 2020; Sohn & Yoon, 2016) and revisit intention (Chew & Jahari, 2014; George, 2010; Zhang, Xie, et al., 2020). Other outcomes of risk perception, such as tourist hesitation (Wong & Yeh, 2009), destination attitude (Zhang, Hou, & Li, 2020), satisfaction and trust (Wu et al., 2019), emotion (Yüksel & Yüksel, 2007), recommendation to others (George, 2010), decision-making process (Taher et al., 2015) and travel behaviour modification (Thapa et al., 2013), were also investigated.

Note that tourists may be motivated by risk-taking behaviours (Cater, 2006; Chang, 2009). These tourists possibly favour novelty and adventurous tourism activities. Examples of risk-taking contexts in the hospitality and tourism industry include gaming (Chang, 2009), mountain climbing (George, 2010; Probstl-Haider et al., 2016) and other adventurous activities (Cater, 2006). Pröbstl-Haider et al. (2016) indicated that the risk-taking behaviour may be attributed to the tourists' experience, participation frequency and commitment, their risk perceptions and the individual trade-off of risks.

3.4.6. Disaster management/disaster event (description)

This study consolidated disaster management and disaster event (description) into one generic category for subsequently summary and discussions. Following previous classical literature on disaster management (Faulkner, 2001; Prideaux et al., 2003), disasters can be considered as unpredictable or unprecedented crisis situations with great complexity and gravity. Ritchie (2008) summarised the many natural disasters frequently studied in tourism literature as comprising hurricanes, flooding and tsunami, earthquake, biosecurity and diseases (e.g. foot and mouth disease and SARS). Huan et al. (2004) dubbed these incidents as 'no-escape' disasters.

As a result of the disasters, tourist fatalities may occur while the destination and business facilities are severely devastated (Cohen, 2009). Different hospitality and tourism sectors may experience remarkably varied challenges (Henderson, 2007). Previous literature also recorded a comparison across disasters for certain destinations (Prideaux, 2003) or for the investigation of disasters across different destinations (Bhati et al., 2016). Many studies focused on business and destination resilience (Bhaskara et al., 2020; Bhati et al., 2016; Filimonau & De Coteau, 2020; Ghaderi et al., 2015; Lew, 2014). Hospitality

and tourism business normally react without warning, deal with existing staff, reduce salaries over the short-term and consider rebuilding tourist confidence over the long-term (Henderson, 2005). Filimonau and De Coteau (2020) emphasised that the destinations studied fail to react effectively. Ghaderi et al. (2015) found that the primate enterprises lacked knowledge and analysis of disasters to prepare for the future.

Faulkner (2001) presented a tourism disaster management framework that incorporated six stages: pre-event, prodromal, emergency, intermediate, long-term recovery and resolution. He suggested destination marketing and communications, risk assessment, disaster management teaming and disaster contingency plans as examples of management strategies. This seminal model was applied for different disaster case studies (Faulkner & Vikulov, 2001; Miller & Ritchie, 2003). Walters and Clulow (2010) examined previous literature and indicated that disaster-recovery marketing may be ineffective for areas affected by disasters. By contrast, Biran et al. (2014) argued that even disaster attributes can possibly motivate certain future tourists.

4. Discussion on emerging research themes from 2010 to present

In Fig. 1, the Y-axis showcases the number of publications that studied crisis management in the hospitality and tourism industry. The X-axis records the years. Obviously, an increasing trend occurred for the relevant publications over the past 36 years. Five distinct peaks were identified in these publication waves: the years 1999, 2008, 2013, 2017 and 2020. Publishing an academic paper usually takes two to three years from the start of an initial idea. In many cases, researchers can only observe impacts and report their findings several years after a crisis event, for example, during the Asian financial crisis in 1997 and the wars in 1990s (including the Gulf War, 1990–91; Croatian War, 1991–95; Bosnian War, 1992–95 and the Afghan War, 1990–2001). Studies published in 1999 mainly involved the financial crisis and the terrorism at that time. However, the papers recorded in 2008 included the impacts of the 9/11 terrorist attack in 2001. Papers in the year 2013 were mostly related to the financial crisis which dated back to 2007 and 2008. Papers with political topics were published in 2017/18. Many COVID-19 papers were published in 2020. Four major themes emerged in the last decade (year 2010-present), namely the health-related crisis, social media, political disturbance and terrorism crises (Table 7).

4.1. Health-related crisis (including COVID-19)

The 2006 Avian Flu, Year, and the 2003 SARS, the 2001 Foot and Mouth disease are notable health-related crisis events that impacted the hospitality and tourism industry (Baxter & Bowen, 2004; Chien & Law, 2003; Page et al., 2006; Tew et al., 2008). Further, 284,00 deaths were recorded in the 2009 Swine flu. Tourism loss was US$2.8 billion (Rassy & Smith, 2013). Recent case of health-related crisis event is the Ebola outbreak in 2014 and 2015. The outbreak affected the Africa tourism industry by 5% revenue reduction in year 2015 (Novelli et al., 2018). Lyme disease was studied from the perspective of tourism management (Donohoe et al., 2015). The impact of Zika outbreak for 2016 in Latin America and the Caribbean caused losses of US$3.5 billion in tourism

industry; and no vaccine is available (World Bank, 2016). In the same year, the global outbreak of Dengue fever led to even severe economic impact of US$8.9 billion (Shepard et al., 2016). The recent global outbreak of COVID-19 in 2020 is undeniably a vastly emerging research focus. An overview of health-related events has been presented by Hall et al. (2020).

Large number of papers in COVID-19 has been published within a short period of time. Most of the papers tended to study the impacts of COVID-19 in hospitality and tourism industry (Bulin & Tenie, 2020; Jaipuria et al., 2020; Knight et al., 2020; Qiu et al., 2020a,b; Seraphin, 2020; Uğur & Akbıyık, 2020), some of which focused on particularly the hotel industry (Bajrami et al., 2020; Vo-Thanh et al., 2020). Besides, some provided directions for recovery (Yeh, 2020). For instance, using a private dining room or table could be one of the solutions in restaurant industry (Kim & Lee, 2020). Resilience is another topic of discussion (Butler, 2020). Rittichainuwat et al. (2020) found that the Thai hospitality, bleisure (business and leisure) and international standard venues are key factors for resilience of the exhibition industry. For tourism industry, travel after pandemic is arguably associated with protection motivation and pandemic travel fear (Zheng et al., 2021).. Research topics could be about perceived risk and tourist decision making (Matiza, 2020). In terms of the research methodologies in this research theme, most of the papers appeared to be conceptual papers (Baum & Hai, 2020; Bausch et al., 2020; Haywood, 2020; Li et al., 2020; Zenker & Kock, 2020). A few qualitative studies used in-depth interview (Awan et al., 2020; Loi et al., 2020) while some others adopted case studies (Breier et al., 2021; Neuburger & Egger, 2020). Quantitatively, some relied on online survey (Karl et al., 2020) or telephone survey (Pappas & Glyptou, 2021) due to pandemic constraints.

Without effective crisis management in this regard, the entire hospitality and tourism industry could hardly recover by rebuilding tourists and guests' confidence who suffer from health-related crises, with no exception of COVID-19. According to Coombs (2019), there are four stages in crisis management: crisis prevention, crisis preparation, crisis response and crisis recovery. The purpose of crisis prevention is to detect warning signals and to stop any possible negative events. Certain disasters cannot be prevented even for early preparation. Crisis management plan needs to list out every step we need to follow when crisis happens. A team can be organised beforehand to carry out some rehearsals regularly. Immediate, transparent and consistency are the basics in preparing crisis response. In post crisis period, people need to learn from the past, including the mistakes made. Business continuity plan guides us to recover from crisis quickly (Coombs, 2019; Fung et al., 2020). These should be the basics of lessons for effective crisis management derived from the different health-related crisis events in history and the COVID-19 outbreak as well. All stakeholders should consolidate their knowledge and experiences to better prepare for the future.

4.2. Social media theme

Over the past decade, companies in the hospitality and tourism industry have greater attention to the use of social media in practice. Social media can distribute news over distances within a short period of

Table 7
Research areas for crisis management studies in last decade (Year 2010 to Present).

Theme	Focus Areas	Sectors	Sources
Health-related	Crisis impacts and tourist decisions	All sectors	Donohoe et al., 2015; Novelli et al., 2018; Hall et al., 2020 COVID-19 papers refer to Table 6
Social media	Use of social media in crisis management	All sectors and stakeholders	Zeng and Gerritsen (2014); Schroeder and Pennington-Gray (2015).
Political disturbance	Yellow vest movement (Paris)/Occupy central (Hong Kong)/ Occupy airports (Thailand)	All sectors	Monterrubio (2017); Luo and Zhai (2017); Cohen and Neal (2010); Cohen (2010)
Terrorism	Brand image	Hotel industry	Balakrishnan (2011); Stahura et al. (2012); Kubickova et al. (2019)

(Source: authors)

time. That media could co-ordinate with different stakeholders in crisis events (Antony & Jacob, 2019; Maia & Mariam, 2018). Meanwhile, a wide range of stakeholders (i.e. individual customers, governmental bodies, activist groups, rescue teams, consumers' bodies, mass media and others) can take part in management through social media (Sigala, 2012). Zeng and Gerritsen (2014) summarised the social media research in tourism and highlighted clearly (p.34) that 'giving its mobility and facility for instant interaction, social media can be expected to play a more important role in tourism destination management, particularly in crisis management … ' Sigala (2012) further revealed that social media can be utilised throughout the different stages of crisis management involving mitigation, preparedness, response and recovery. For example, Schroeder and Pennington-Gray (2015) studied the effect of social media in crisis communications. Travellers may possibly refer to feedback from social media in search of related information when a crisis occurs. Instead of discussing crisis impacts on tourism sectors in Hong Kong, researchers attempted to focus on the crisis communication through social media which affects social media users' subsequent attitude (Luo & Zhai, 2017). Social media can also be used in the revision stage to develop resilience and adaptability. Moreover, social media has employed in fundraising events and in creating emotional support after crisis (Coombs, 2019).

4.3. Political disturbances theme

The past decade witnessed a few examples of political disturbances or social movements (Monterrubio, 2017). In Thailand, Cohen (2010) examined the sources of airport occupation. The occupation was a social movement opposed to the Thailand government. The movement changed the safety destination perception of Thailand and affected the tourism industry in the long term (Cohen, 2010). In Hong Kong, the 'yellow vest' movement occurred on November 17, 2008. Protesters decided to continue to protest every Saturday. That situation might generate an unsafe image for incoming tourists (Derr, 2020). A political event called Occupy Central in 2014 and 2015 in Hong Kong also requested for the election of a Chief executive. 'Central' is a place in Hong Kong that encompasses many important business and government offices. Another social movement involved Hong Kong's anti-extradition law amendment bill in 2019. These occurrences strongly impact the peaceful image of Hong Kong.

4.4. Terrorism theme

Unquestionably, the hospitality and tourism industry is vulnerable to terrorism. Tourists might possibly switch to other travel destinations because of perceived terrorist threats to their intended destination (Sönmez et al., 1999; Walters et al., 2019). Terrorism has become a popular theme of research since 2001, when the terrorist attack of historic significance occurred on 11 September in the U.S. (Evans & Elphick, 2005; O'Connor et al., 2008; Taylor, 2006; Yu et al., 2005). | Another example involves the targeting of Bali tourists by Al Qaeda in 2002 (Xu & Grunewald, 2009).

Some terrorism-related studies from past decade focused on the hotel industry. One research indicated that terrorism affects the brand image of a local hotel if an attack from terrorists occurs on the destination. Thus, protecting the brand equity is an effective strategy (Balakrishnan, 2011). Another paper compared the impacts of 9/11 on hotel room demand to those during the financial crisis of 2008 (Kubickova et al., 2019). Stahura et al. (2012) emphasised that crisis management planning is essential when the industry confronts potential crisis from
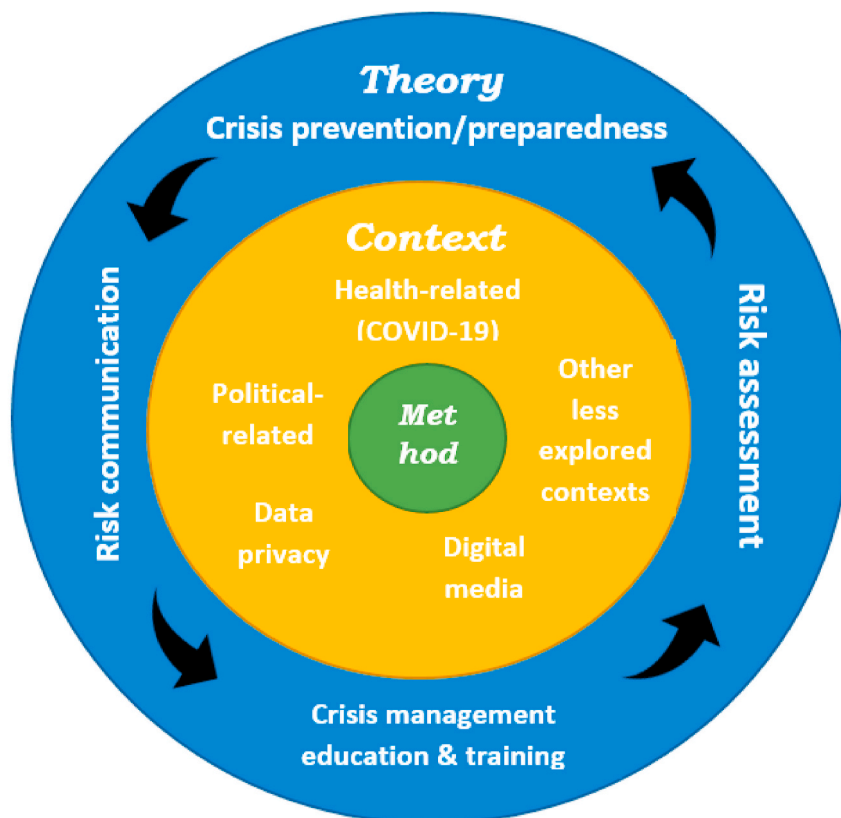
(Source: authors)

Fig. 4. Conceptual framework for future research of crisis management in hospitality and tourism industry.
(Source: authors)

terrorist attacks.

5. Research opportunities

Following a systematic analysis of traditional research focuses over the 36 years and emerging research themes over the last decade, a new conceptual framework was presented in Fig. 4 to highlight the proposed future research directions of crisis management in the hospitality and tourism industry. Further research areas were identified using a TCM (Theory-Context-Method) model (Paul et al., 2017) presented in three layers.

The outer layer related to the crisis management at the theory level. Traditional research foci at the theoretical level appear to include crisis management/with multiple topics, crisis impact, crisis recovery, risk management/with multiple topics and risk perception and disaster management. Unfortunately, little attention has been paid to crisis management education and training, a feature which was rather regarded as the most effective method of crisis management in the long run for the tourism industry (Henderson, 1999a). The literature review also entailed relatively less academic attention to crisis prevention and preparedness, risk assessment and risk communication. In the second inner layer, proposed contexts of crisis management research were presented. The health-related crisis events including COVID-19, data privacy, digital media, political-related crisis events as well as other less explored contexts are suggested for the future research of crisis management in the hospitality and tourism industry. It should be noted further that the health-related, data privacy and political-related crisis events are also related to the digital media area. This situation indicates that the transmission of crisis information is rather faster than ever before through digital media, so that management of various crises should be examined in this era of digital media. Meanwhile, the less explored industry sectors and contexts should be studied. The core and the inner layer suggest adopting new analytical research methods for designing various research and analysing related data. The following will detail the proposed future research areas and identify specific research questions for the benefit of future researchers (Table 8).

5.1. Theory development

Fink (1986)'s four stage model is influential in crisis management studies. His four-stage model was applied in diseases (1) prodromal, hints of potential crisis; (2) breakout; (3) chronic, the effect of crisis persists; (4) resolution, some clear signals the crisis is no longer a concern (Fink, 1986). The other influential model is from Mitroff (1994). His five stages model turns Fink's descriptive model to prescriptive approach. Crisis management efforts was divided into five phases: signal detection, prevention, damage containment, recovery and organisational learning (Mitroff, 1994). Faulkner (2001) made a good comparison of the models. In fact, previous research have also indicated the cycling loop of crisis management (Xu & Grunewald, 2009). For instance, Pursiainen (2018) explicitly explained the crisis management circle with some suggested procedural steps (prevention, preparedness, response, recovery, learning, risk assessment). This further provides the solid theoretical foundation for Fig. 4 that the proposed future research areas at theoretical level stay at different cycling stages in crisis management: from crisis prevention and preparedness to risk communication to crisis management education & training, and then to risk assessment, which has been also considered to pave the way for the next round of crisis prevention and preparedness.

5.1.1. Crisis prevention and preparedness

Papers on crisis preparedness (9 papers) and crisis prevention (7 papers) are notable fewer. In fact, preventing the crisis from happening is the best crisis management strategy. Crisis preparedness takes up most of a crisis manager's time (Coombs, 2019; Pforr & Hosie, 2008). The recovery and experiences of crisis handling of one time can be translated

Table 8
100 specific future research questions in the ten future areas.

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
Theory		
Crisis prevention/preparedness		
Change of accommodation, upgrade, information update and security staff to prevent hotel booking cancellations (Hajibaba et al., 2016) Three-stages framework for crisis signal detection: signal scanning, capture and transmission was proposed for crisis prevention (Paraskevas & Altinay, 2013). The third party tourism crisis preparedness certification programs help the travellers to make informed travel decisions (Pennington-Gray, 2014).	1. What can be the prevention and preparedness strategies facing the business travel segment, which sector may recover sooner in the post-crisis era? (Hajibaba et al., 2016) 2. How the crisis culture can be developed and embedded in a company? (Paraskevas & Altinay, 2013) 3. What can be the different views and suggested strategies by the tourism and hospitality practitioners at different job positions? (Paraskevas & Altinay, 2013) 4. What can be the updated crisis prevention/preparedness models for the tourism and hospitality industry? (Paraskevas & Arendell, 2007) 5. What is the role of past experience in crisis management and prevention/preparedness strategies? (Pennington-Gray et al., 2011) 6. What are the tourist perceptions of a safe destination that the related government agencies need to prepare? (Pennington-Gray et al., 2014a) 7. What are the expectations of customers and clients toward the crisis preparedness strategy? (Smith & Kline, 2010)	8. How does the crisis recovery and experiences translate into the crisis prevention and preparedness strategy? (Our analysis) 9. What is the importance of crisis prevention and preparedness in the crisis management cycle? (Our analysis) 10. What are the effects of crisis prevention and preparedness in the future international tourism market? (Our analysis) 11. What can be the influence of industry 4.0 on how the tourism and hospitality industry prevents and prepares for the crises? (Our analysis)
Risk communication		
Public negative emotions could be cancelled/balanced by positive and detailed responses before or at the time of the crisis (Zhai et al., 2019). Revenue loss is huge due to the misrepresentation of a particular crisis by media (Walters et al., 2016).	1. Whether it is effective to mitigate risk perceptions by marketing practices? (Heimtun and Lovelock, 2017) 2. How can tourism companies and tour guides communicate the risks and manage tourists' experiences? (Heimtun and Lovelock, 2017) 3. What is the role of social media in communicating and mitigating the risks for potential tourists? (Daye, 2014; Farajat et al., 2017; Walters et al., 2016) 4. What are the innovative communication strategies to frame the risks as part of travel experiences? (Daye, 2014) 5. What are the risk communication strategies targeting different traveler segments, e.g. business travelers, conventioneers, leisure travelers? (Fall & Massey, 2006) 6. What is the influence of	9. What are the legal issues involved in risk communication? (Our analysis) 10. Whether the risk communication is effective to generate risk awareness for customers who can take proactive actions? (Our analysis) 11. How can the risk concerns of tourists be managed effectively? (Our analysis) 12. What are the effects of risk communications and perceptions on tourist destination attitude, trust and decision-making process? (Our analysis) 13. How do tourism and hospitality companies, or destination

Table 8 (*continued*)

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
	media coverage on tourists' risk perception and decision-making? (Liu et al., 2015d) 7. How can the destination marketing organisations and tourism companies or organisers collaborate for the risk communications? (Pappas, 2019) 8. What is the interplay of tourist emotion and risk communication leading to the tourist attitude and behaviour? (Zhai et al., 2020)	organisations be able to help tourists accepting reasonable risks? (Our analysis)
Crisis management education and training Simulation based training was used to teach and assess crisis management team ability (Waller et al., 2014).	1. What is the association among crisis management education on tour guides, perceived security of tourists and willingness to travel? (Zenker et al., 2019)	2. How can Virtual Reality (VR) technologies help to train hotel frontline staff dealing with emergency situations? (Our analysis) 3. What are the competencies and characteristics of a future leader in crisis management in hospitality and tourism industry? (Our analysis) 4. What are the cross-cultural phenomenon of crisis management education and training? (Our analysis) 5. Is there a need to incorporate crisis management and awareness training in hospitality and tourism higher education? (Our analysis)
Risk assessment 25 environmental risks were identified in a tourism site (Roe et al., 2014). Risk analysis on adventure activities in New Zealand presented (Bentley & Page, 2008).	1. What can be the most updated and comprehensive risk assessment models and methodologies? (Tsai & Chen, 2010, 2011b) 2. Who have the competency to help judge the various risks and impacts in qualitative studies? (Roe et al., 2014) 3. How to utilise the risk assessment and analytical results for risk management and planning? (Tsai & Chen, 2010, 2011a) 4. How does the market transformation influence the decision making of various stakeholders based on risk assessment? (Rutty et al., 2017) 5. Whether tourists are willing to pay for climate or other risk insurance based on the assessment results? (Olya & Alipour, 2015) 6. What are the broader parameters and issues that	7. What can be the risk assessment results given the various types of risks involved in tourism and hospitality? (Our analysis) 8. What are the limitations of specific risk assessment models in practice? (Our analysis) 9. How to balance and consolidate the inputs of qualitative and quantitative means into risk assessment? (Our analysis) 10. What are the advices toward the financial budget to support risk assessment advancement on a continuous basis? (Our analysis)

Table 8 (*continued*)

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
	influence travel safety and advice? (Lovelock, 2004)	
Context **COVID-19** Impacts of COVID-19 in hospitality and tourism industry (Bulin & Tenie, 2020; Jaipuria et al., 2020; Knight et al., 2020; Qiu et al., 2020a,b; Seraphin, 2020; Uğur & Akbıyık, 2020) Resilience is another topic of discussion (Butler, 2020; Rittichainuwat et al., 2020) Travel after pandemic is arguably associated with protection motivation and pandemic travel fear (Zheng et al., 2021) Perceived risk and tourist decision making is one of the research topics (Matiza, 2020). Changes in destination image; tourism behaviour; resident behaviour; tourism industry; long term and indirect effects (Zenker & Kock, 2020). The engagement of Corporate Social Responsibility can increase the return of the stock (Qiu et al., 2021).	1. How do the hospitality industry employees in different cultural contexts (e.g. collectivism versus individualism) respond to digital work connectivity in a post COVID-19 era? (Chadee et al., 2021) 2. What are the impacts of COVID-19 on peer-to-peer accommodation platforms: guest perspective? (Farmaki et al., 2020) 3. What are the effects of CSR practice on organisational resilience? (Filimonau et al., 2020) 4. What are the influences of technology adoption on customers' experience, engagement, satisfaction, loyalty, and the hotel brands' and properties' performances during the post-pandemic era? (Hao et al., 2020) 5. Can we use big data and analytics with respect to AI, hygiene and health-care practices in hotels and other hospitality contexts to address the ongoing digital transformation in the industry? (Jiang & Wen, 2020) 6. Can we focus, in both depth and detail, on the problems caused by the COVID-19 crisis and the success of strategies and programmes employed in an attempt to return to some sort of business normality? (Jones & Comfort, 2020) 7. Are there any changes in destination image, tourist behaviour and resident behaviour in post pandemic period? (Zenker & Kock, 2020) 8. How about the impacts of COVID-19 on airline industry? (note: Many papers examined the impacts on hotel and restaurant industry (Kukanja et al., 2020)	9. What are the employee well-beings under the COVID-19 and job pressures, and what can be the feasible solutions? (Our analysis) 10. Are there any more innovated consumer behaviour and management models in hospitality and tourism industry after COVID-19? (Our analysis) 11. What can be business models in various industry sectors at the backdrop of sharing economy together with the pandemic threat? (Our analysis) 12. What is the relationship between quarantine and other COVID-19 prevention measures; and the industry and organisational image? (Our analysis) 13. What can be the differences of the COVID-19's impacts at different times in a longitudinal study? (Our analysis) 14. What particular aspects of CSR efforts that the post-COVID-19 world and its hospitality and tourism businesses should pay more attention to? (Our analysis)
Data privacy There was a negative relationship between data breach or privacy issues (hotel responsibility) and customer relationship building and loyalty (Chen & Jai, 2019)	1. How to balance the customer privacy and data utility in hospitality industry? (Vu et al., 2019) 2. How to prevent indirect exposure of private information through analysing publicly available data in tourism industry? (Vu et al., 2019)	3. What are the impacts of inappropriate processing of sensitive and personal information concerning the company reputation and customer loyalty? (Our analysis) 4. What kind of tourists, or hospitality customers, concerning their gender, age, or

(*continued on next page*)

Table 8 (*continued*)

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
		income, are most sensitive about data privacy during their trip or consumption experience? (Our analysis)
Political related		
Boycotts affect visitor numbers. Non-political animosity boycotts are found to have short-term effects, whereas political animosity tend to have long-term impact (Yu et al., 2020) Destinations under the impact of political risk should consider tourists' safety concerns and introduce how to deal with the issue (Farajat et al., 2017). Social Media is very useful crisis communication tool in Lebanese hoteliers (Salem, 2015).	1. What is the relationship between animosity and boycott behaviour? (Yu et al., 2020) 2. What are the effects of tourists' boycott motivations on boycott actions, subject to the government policies and new media influence? (Yu et al., 2020) 3. What is the role of perceived risks in tourists' decision making? (Sönmez, 1998) 4. Is there a need to create an independent organisation for the travel information dissemination? (Sönmez, 1998) 5. What are the responses and role of organisation learning for the firms, particularly small and medium enterprises, for the political turbulence events? (Mansour et al., 2019) 6. What are the experiences and contributions of employees for the firms coping with the political event crisis? (Mansour et al., 2019) 7. How do the nationalism and emotion influence boycotting travel? (Luo & Zhai, 2017) 8. What are the impacts of political event crisis on the (cyber) communications? (Luo & Zhai, 2017) 9. What are the spillover effects on the terrorism effects particularly for travel demand? (Liu & Pratt, 2017) 10. What are the marketing strategies that can be adopted to restore destination image which has been influenced by the political change? (Avraham, 2015)	11. What are the crisis management effects of specific crisis types and situations in political-related crisis events? (Our analysis) 12. What are the views from international tourists and locals toward the impact of political related event's impacts? (Our analysis) 13. Can perceived destination image of political related crisis be eliminated or transformed through continuous destination marketing efforts? (Our analysis)
Digital media		
Social media was seldom used in the crisis preparation but in recovery period to raise donation (Möller et al., 2018) Response speed using social media, brand familiarity, and cultural values of the respondent affected corporate reputation of a cruise line after a crisis (Ryschka et al., 2016). Countries of origin, the	1. What is the effectiveness of social media for crisis management across various types of crises? (Antony & Jacob, 2019; Liu et al., 2015a, b,c,d; Sigala, 2011) 2. What are the similarities and dissimilarities across different social media platforms for crisis management strategies? (Barbe et al., 2018; Liu et al., 2015a,b,c,d; Möller et al., 2018) 3. How to employ the effective risk communication	12. What can be effective crisis management in digital era? (Our analysis) 13. What can be the cross-cultural effects and influences on digital marketing in hospitality and tourism industry? (Our analysis) 14. What are the safety issues of hospitality and tourism marketing

Table 8 (*continued*)

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
age group 31–40; past international travel experience; and perceptions of crime, natural disasters, disease, financial, equipment failure, weather, cultural barriers, and political risk affecting the likelihood of using social media in a crisis (Schroeder & Pennington-Gray, 2015).	strategies for the right users with different purposes of using various digital vs. traditional channels? (Schroeder & Pennington-Gray, 2015) 4. Whether the use of social media can help environmental monitoring? (Becken et al., 2017) 5. Whether the public and tourists' views in cyberspace can be translated into actual behaviour? (Luo & Zhai, 2017) 6. Whether the social media can assist community's resilience as well as for the organisations? (Möller et al., 2018) 7. Whether the perception and responses to company image and reputation in digital media will be changed and evolved over time? (Ryschka et al., 2016) 8. What is the relationship between risk perception and social media usage across cultures, nationalities and ethnicities? (Schroeder & Pennington-Gray, 2015) 9. How should the professionals manage the customer involvement online? (Sigala, 2012) 10. Whether the privacy issues in digital media are cared greater than before and what are the preserving techniques? (Vu et al., 2019) 11. What are the local residents' views and attitude over the social media impacts in tourism? (Zeng & Gerritsen, 2014)	and communications in digital media? (Our analysis) 15. Whether social media is effective in preventing crisis from happening? (Our analysis) 16. What type of crisis fits more in the management function and effect of digital media? (Our analysis) 17. How to promote consumer culture and tourist culture through the use of social media? (Our analysis) 18. What is the moderating role of digital media involvement and participation in hospitality and tourist behaviour? (Our analysis)
Other less explored contexts		
Tour operators and travel agencies (Cavlek, 2002), as well as airlines (Hatty & Hollmeier, 2003), are very sensitive to tourism and destination crises, and recovery strategy should be emphasised for re-establishment of the tourism market. Potential barriers affecting MICE industry, such as information, infrastructure, human resource, etc (Sangpikul & Kim, 2009).	1. What is the effectiveness of vertical integration of the tourism sectors between home countries and destinations for tourism recovery? (Cavlek, 2002) 2. What is the meaning behind a healthy business environment for airline industry under potential crises? (Hatty & Hollmeier, 2003) 3. Are there any differences for MICE industry across countries, or between national and international associations, in terms of crisis and risk understandings? (Sangpikul & Kim, 2009)	4. What are the uniqueness of crisis management strategies for specific tourism sectors, e.g. airlines, travel agencies, restaurants, ocean cruising, theme parks and wellness spas, MICE, sports tourism, etc.? (Our analysis) 5. What can be comparable parameters and combinations for crisis and risk management and analysis across different hospitality and tourism sectors? (Our analysis) 6. Is there any coordination opportunity among these sectors toward developing crisis

Table 8 (*continued*)

Recent Findings	Specific Questions Unanswered in the Existing Literature	Specific Questions Generated from This Study
		management and promoting tourism and businesses? (Our analysis) 7. Whether there are more research outputs from different market segments using the services of different industry sectors in a holiday package? (Our analysis)
Method The profit, social support, quality and safeguard affects business relationship using QCA method (Santos et al., 2018). Change of accommodation, upgrade, information update and security staff to prevent hotel booking cancellations using conjoint analysis (Hajibaba et al., 2016)	No focused suggested future questions	1. How the tourists choose a hotel after COVID-19 making use of qualitative comparative analysis (QCA)? (Our analysis) 2. How the tourists choose an airline for their international trip after COVID-19 making use of conjoint analysis? (Our analysis) 3. How the COVID-19 crisis impacts the decision of tourists: A cross-cultural approach? (PLS-SEM would be used) (Our analysis) 4. What are the different characteristics of tourists and hospitality consumers in a new normal of COVID-19 world? A cluster analysis. (Our analysis) 5. What would be the changes of international tourist behaviour as affected by the COVID-19 outbreak? A time series analysis. (Our analysis)

into the crisis preparedness and precaution measures for the potential next time. The awareness and recognition of possible crises by managers and staff can be strategically important throughout the learning process and crisis management cycle (Xu & Grunewald, 2009).

5.1.2. Risk communication

Compared to the risk management (68 papers) and risk perception (41 papers) categories, prior literature records only one paper (Heimtun & Lovelock, 2017) which focused on 'risk communications.' Risk communication is indeed important in the hospitality and tourism industry. An uncertainty always exists because of the weather or some other uncontrollable factors. Risk communication is important when they promote tourism products to prospective customers (Heimtun & Lovelock, 2017). It also relates to legal issues. For example, travel companies and tour organisers should explicitly explain to potential tourists the types of risks involved and tourists (risk bearers) could also express their concerns and fears about the risks in the process of their decision making. The outcomes of risk communication are expected to

enhance customers' risk awareness and help them take personal pro-active actions. The appropriate overestimation of risk can be also effective for helping consumers make decisions while avoiding possible legal risks (Coombs & Holladay, 2010).

5.1.3. Crisis management education and training

Special attention should also be given to crisis management education and training in hospitality and tourism-related programmes. In the ever-increasingly diversified and changing market, hospitality and tourism companies have an urgent need of specialists and professionals in crisis management for their sustainable and healthy business development. Graduates equipped with relevant knowledge and working experiences will be highly needed by the industry. The presence of an experienced leader and crisis team consisting of qualified staff can be strategically significant in the different stages of crisis management in the tourism industry (Ritchie, 2004). Surprisingly, scare research exists in this regard.

In this study, the US, Australia and the UK were well represented in terms of the leading authors of crisis management studies in the hospitality and tourism industry. Academic platforms may favour more interested researchers in this area who originate from other places. The cross-cultural approach is also strongly recommended for systematic comparisons of the findings generated from different cultural backgrounds. Future research could be extended to more developing countries, such as China and Vietnam, to compare their crisis prevention measures.

5.1.4. Risk assessment

Less than 10 papers focused on risk assessment, a figure which could suggest a future research direction. Undeniably, hospitality and tourism companies may be interested in identifying the possible risks according to their frequency, scale and level of loss, and assess their influences for developing effective risk management strategies (Tsai & Chen, 2010). Roe et al. (2014) summarised many methodological approaches that are currently adopted to assess and manage the various risks, particularly environmental ones. They exemplified with the Environmental Impact Assessment, Environmental Audit and Ecological Footprint with support of Delphi Technique. In fact, tourists can also learn from the risk assessment results to manage their holiday travel plans and decide insurance purchase (Olya & Alipour, 2015). However, as each assessment methodology has its own merits as well as limitations, methodological innovations and comprehensive assessment models are expected for future research, particularly in the hospitality and tourism context owing to the lack of research output in this regard (Tsai & Chen, 2010).

5.2. Context

5.2.1. COVID-19 (Coronavirus Disease 2019)

COVID-19 has threatened the lives and health of people globally and seriously disrupts the traffic flow of people worldwide. Hotels, travel agencies, airlines and all sorts of related industries face a serious challenge in 2020 (Gössling et al., 2020; Qiu et al., 2020a,b). In fact, the world may see a co-occurrence of various health risks and diseases in future. With lessons derived from COVID-19, health-related crisis management could be a universal issue.

The COVID-19 pandemic may not be over in year 2021 although different vaccines are available. Tourism and hospitality industry will still be seriously affected. Firstly, the impacts on the industry have already been estimated for the year 2020.70% of hotel employees have been laid off and 4.6 million supporting jobs was lost in United States (American Hospitality and Lodging Association, 2020). The forecasted impacts for the year 2021 are still in progress and not yet available. Secondly, there could be new models for people travelling for leisure or business after the pandemic. Thirdly, new business model may evolve for the hotel, airlines, catering, or even the sharing business (Farmaki et al., 2020).

5.2.2. Data privacy in hospitality and tourism

Today, most organisations are using information technology as a main or supplementary tool for their business operations and management. Extensive organisational/customer sensitive information is stored and/or processed in digital format, particularly when using social media for communications. Loss of confidential information would be disastrous for a company. Note that any inappropriate processing of such sensitive and personal information may cause great damage to organisational reputation with the expected decline of customer trust and loyalty (Watson & Rodrigues, 2018). This fact was highlighted with no exception in the hospitality and tourism industry (Chen & Jai, 2019). Unfortunately, very few papers have addressed this issue. Chen and Jai (2019) explored a research agenda to examine the relationship between data breach or privacy issues and customer relationship building and loyalty. They also suggested checking the different levels of privacy concerns by customers and their impacts.

5.2.3. Political-related crisis events

Many political-related crisis events also have impacts on hospitality and tourism industry. For example, in a historical sense, the US-Iran conflict has long influences over the development of Iran's tourism industry (Estrada et al., 2020; Khodadadi, 2018). Recently, the Hong Kong extradition bill controversy (2019–2020) also shook Hong Kong's society and the tourism industry in particular (Lee, 2020). More researchers are expected to express interest on these cases to discuss different research questions. These cases are related to risk and crisis management for destination marketers and various stakeholders. However, the natures of these circumstances vary, a situation which could possibly generate dissimilar research findings and shed light in the crisis management field. Future researchers could investigate the effects of crisis types on crisis management with case studies of new crisis events (Coombs, 2019).

5.2.4. Digital media theme

Digital media plays a major role in future. People may like to use social media more often to express and share their views. However, a crisis may occur for the companies that fail to adequately manage the social communications of their products and brands. For example, customers may complain on social media. How the complaint is transmitted through the Internet and the responses from the organisation are rather practical topics for researchers. Ryschka et al. (2016) is one of the few to explore how a company's response to a crisis raised on social media affects its reputation. Their results showed that the speed of response is important as well as the brand familiarity and cultural values. Unfortunately, their research context (cruise industry) has its special nature and may not be applicable to other industry sectors or businesses at large. Sigala (2012) indicated that future studies could analyse role of social media in crisis communications and its impacts on organisation image. The factors that contribute to the motivations and barriers of using social media by companies can also be studied accordingly (Sigala, 2012). Luo and Zhai (2017) highlighted the need for further research about cyber nationalism and bilateral relationships concerning the tourism boycott and destination crisis.

5.2.5. Other less explored contexts

Most of the reviewed crisis management studies focused on hotels as a sector of the hospitality and tourism industry. Studies should be more diversified across other sectors of the industry. Certain hospitality and tourism industry sectors are under-explored, including airlines, travel agencies, restaurants, the conference sector, ocean cruising, theme parks and wellness spas. For instance, any destination and tourism crisis may affect tour operators and travel agencies which play an important role in tourism flows (Cavlek, 2002). Emphasis on tour operators is suggested for their strategic importance towards destination recovery in the post-crisis period (Cavlek, 2002). The airline industry is also very sensitive to economic downturns and global crises (Hatty & Hollmeier,

2003). Accordingly, the companies involved in that industry may be unable to adjust immediately when facing declining demands in the market. Sangpikul and Kim (2009) identified different factors of barriers affecting the convention and meeting industry. For example, they revealed political unrest as the source of crisis for the MICE (Meeting, Incentive, Conventions and Exhibitions) industry. However, few studies have investigated this sector.

6. Method

Previous crisis management research relied on traditional methodologies including case studies, content analysis, descriptive analysis and regression analysis (Table 5). Researchers could consider analysing images and/or pictures of the crisis event. Case study in crisis research usually involves with very small sample size. Two diseases cases (SARS and H1N1) were covered in a crisis management study (Fung et al., 2020). Generalization of a case study usually is a difficult task for researcher. Thus, case study sometimes was conducted by way of an exploratory study; or simply used to test a pre-established theory. Besides, case study would also be used to demonstrate a good crisis management practice and propose a relationship or association among variables (Eisenbhardt, 1989). As a whole, case study is a perfect choice to explain and answer the questions on "how" and "why".

Researchers can consider qualitative comparative analysis. In literature, less than one percentage of crisis management articles used qualitative comparative analysis (see Table 5). Most of the focal researches examined relationships among variables in a linear manner using regression analysis and ignored the complexities that might possibly exist across the variables. Even in the case of low level of multicollinearity, one variable might depend on the other explanatory variable (Woodside, 2013). Often, the impacts on tourism due to crisis might not work in a linear relationship. The qualitative comparative analysis can be a suitable analysis method (Papatheodorou & Pappas, 2017).

5.9 percent or thirty of crisis management papers adopted structural equation modelling as their main analysis method (Table 5). Partial Least Squares structural equation modelling (PLS-SEM) has not been used extensively in particular hospitality and tourism research but rather preferred in marketing and management studies in general (Ali et al., 2018). Conceptually, PLS has some advantages including smaller sample size and less restricted data normality requirement. For example, with 5% significant level, minimum R-square 10% and number of arrows pointing at a construct is five, 150 samples is sufficient (Hair et al., 2019). This fits the current research situation under pandemic concerns that achieving big sample size may not be an easy task. Moreover, models in risk perception sometimes evolve more than one dependent variable and some other mediating or moderating variables, such as perceived security, perceived risk, destination image or willingness to visit (Zenker et al., 2019). Complex predicting model could be handled by PLS easily.

Conjoint analysis is sometimes used in hospitality research. For example, it could explain how tourists choose a particular hotel. It depends on a lot of considerations at the same time. Costs, time, word-of-mouth, activities, past experience and so on are possible reasons (Suess & Mody, 2017). Only a subset of combinations needs to be tested in the field in order to get the answer. In crisis management research, crisis response can be one of the possible topics using this method. For example, one has to take into account different factors before formally making an apology for a customer complaint. Possible factors can include seriousness of crisis, crisis history, and responsibility of company (Coombs, 2019).

6.1. Specific future research questions

Based on the above analysis, ten key future areas were identified. This study took a step further to prepare a total of 100 specific research questions (Table 8) that warrant greater attention in the future.

Research findings in these areas were also reported (first column of Table 8). Future researchers of crisis management in hospitality and tourism industry can take the specific questions as a direct reference to prepare their projects. Among these specific questions, some questions were reported as unanswered in the existing literature in these areas (second column of Table 8), thus being worthy of future research. Other specific questions (last column of Table 8) were generated from analyses in this study, after a critical review of literature.

7. Conclusions

This study systematically reviewed crisis management literature in the hospitality and tourism industry from 1985 to 2020, spanning 36 years; and found that only few articles were produced during earlier period. A sharp increase of related research interests emerged thereafter. This work analysed various major academic journals and presented the trends of their collection of crisis management studies; and discussed the study locations and authorship. Moreover, a systematic summary of the crisis types and the different industry sectors within the hospitality and tourism industry can be found this study.

Under the area of crisis management in the hospitality and tourism industry, traditional research foci were found to comprise crisis management and risk management/with multiple topics, disaster management, crisis impacts and recovery, and risk perception. This study summarised further that the main emerging themes over the last decade have revolved around health-related crisis including COVID-19, social media crisis, political disturbance crisis and terrorism crisis. The research cases and environments covered different industry sectors.

Crisis management research will likely be conducted continually with scholarly passion in the near future. A three-layer TCM (theory-context-method) framework for further research of crisis management in the hospitality and tourism is proposed. Ten directions are suggested for future research agenda: 1) crisis prevention and preparedness, 2) risk communication, 3) crisis management education and training, 4) risk assessment, 5) COVID-19 and other health-related crisis events, 6) data privacy in hospitality and tourism, 7) political-related crisis events, 8) digital media theme, 9) other less explored research contexts, and 10) adopting newer analytical methods and approaches. A summary of important works up to date and the suggested 100 specific research questions were also presented for future research purpose.

This study has its natural limitations, the papers collected were published within a specific time period (1985–2020). Using more keywords in literature search can found more papers in this field. Exploring this topic further at different academic platforms, particularly for those in languages other than English, can for sure generated more search results. Investigation of crisis management with a regional focus is also suggested for analysing the research outputs recorded in the local and regional languages.

Author statement

Wut, T. M.: Conceptualization; Data curation; formal analysis; funding acquisition; investigation; Methodology; original draft, Xu, B.: Funding acquisition; review and editing, Wong, S.: Project Administration; resources; supervision.

Declaration of competing interest

We declare that there is no potential conflict of interest

Appendix B. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.tourman.2021.104307.

Appendix A

Location of first author (N = 512) (Extended version of Table 1)

Continent	Frequency	Percentage	Country/Area	Frequency	Percentage
Europe	157	30.7	UK	59	11.5
			Spain	15	2.9
			Turkey	8	1.6
			Greece	6	1.2
			Italy	6	1.2
			Austria	5	1
			Croatia	5	1
			France	5	1
			Norway	5	1
			Cyprus	4	0.8
			Ireland	4	0.8
			Netherlands	4	0.8
			Portugal	4	0.8
			Denmark	3	0.6
			Germany	3	0.6
			Poland	3	0.6
			Romania	3	0.6
			Sweden	3	0.6
			Bulgaria	2	0.4
			Finland	2	0.4
			Serbia	2	0.4
			Slovenia	2	0.4
			Catalonia	1	0.2
			Switzerland	1	0.2
Asia	132	25.8	Mainland China	29	5.7
			Taiwan	19	3.7

(*continued*)

Continent	Frequency	Percentage	Country/Area	Frequency	Percentage
			Israel	12	2.3
			Japan	12	2.3
			Hong Kong	11	2.1
			Singapore	10	2
			India	9	1.8
			Malaysia	6	1.2
			South Korea	5	1
			Thailand	5	1
			Macao	4	0.8
			UAE	2	0.4
			Bangladesh	1	0.2
			Dubai	1	0.2
			Indonesia	1	0.2
			Iran	1	0.2
			Jordan	1	0.2
			Lebanon	1	0.2
			Russia	1	0.2
			Sri Lanka	1	0.2
Oceania	110	21.5	Australia	101	19.7
			New Zealand	19	3.7
North America	99	19.3	USA	89	17.4
			Canada	10	2
Africa	10	2	South Africa	8	1.6
			Ghana	1	0.2
			Nigeria	1	0.2
Latin America	4	0.8	Brazil	2	0.4
			Argentina	1	0.2
			Mexico	1	0.2
Total	512	100	Total	512	100

(Source: authors)

Impact statement

Crises events and crisis management often become research topics for hospitality and tourism researchers. However, review papers in this field are lacking. An updated systematic literature review of crisis management research in hospitality and tourism industry is highly needed for the time being, to show what has progressed in recent decades and what would possibly progress in the near future. Under the outbreak of COVID-19, more hospitality and tourism researchers are expected to develop their research interests in crisis management field in the near future. Our paper fills in the research gap to summarise and discuss the traditionally dominated crisis management research themes and the emerging themes over the last decade from 2010. Meanwhile, it also sheds lights in providing clear and detailed advice to future researchers through eliciting what kind of crisis management research areas and specific research questions can be considered.

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Wut, Tai Ming; Dr Wut is a senior lecturer in the School of Professional Education and Executive Development, The Hong Kong Polytechnic University, where he teaches courses in risk management, crisis management and corporate social responsibility. His interdisciplinary research interests cover engineering management, corporate social responsibility and engineers' role in society. He has published papers in international journals such as International Journal of Consumer Studies and Young Consumers. He has also presented his papers in international academic conferences.

Xu, Bill; Dr Bill Xu is a senior lecturer in the School of Professional Education and Executive Development, The Hong Kong Polytechnic University. With respect to research, he has published academic articles and book reviews in international journals like the Journal of China Tourism Research, the Asian Pacific Journal of Tourism Research, the International Journal of Contemporary Hospitality Management, Tourism Management, etc. He also presented papers in international academic conferences. His teaching and research interests include consumer behaviour and consumption experience (in tourism and hospitality management), tourism psychology and sociology, tour operations and wholesaling, China tourism and hotel businesses, hospitality management in China, and quality service management.

Wong, Helen Shun-mun; Dr Helen Wong obtained her Bachelor of Arts (First Class Hons) from The Hong Kong Polytechnic University, Master of Science from the University of London, and Doctor of Business Administration from the University of South Australia. She is also a fellow member of ACCA, an associate member of HKICPA, and CGA. Dr Wong has a diversified business background and several years' accounting and finance experience in Hong Kong and Canada. Prior to joining HKCC, she had worked for various well-known organisations, such as PricewaterhouseCoopers, Hong Kong Stock Exchange, and the University of Toronto.