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Assignment Letter/*Surat Tugas*

No.	: **ASL/IBA/0781/IULI/I/2022**	**Date/Rev.**	: 31 January 2022/ 00
From /*Dari*	: Head of Department of International Business Administration */ Kepala Program Studi Administrasi Bisnis Internasional*	**Page**	: 1 of 1
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Duty Assignment */ Tugas melaksanakan kegiatan*

Assignment At	***Penugasan di***
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Head of Department of IBA of International University Liaison Indonesia	*Kepala Program Studi IBA Universitas Lintas Internasional Indonesia*
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Herewith gives the task to:	*Dengan ini menugaskan kepada:*
Name: **Dr. Samuel PD Anantadjaya** Position: **Lecturer**	*Nama:* ***Dr. Samuel PD Anantadjaya*** *Jabatan:* ***Dosen***
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No	Task/*Tugas*	Article/*Artikel*	SKS	Period/*Periode*	Journal/*Jurnal*
1.	Article Reviewer	Manuscript ID D-22-01252 entitled "A Study on Sustainable Air-Travel Behaviour under the Possible Remedy of Risk Knowledge: A Mediating Perspective of Risk Perception during COVID-19"	1	31 January – 14 February 2022	invited by: Martin Thomas Falk, PhD Heliyon (Scopus-Based Journal Q1) ISSN # 2405-8440 (online)
Total SKS			1		

* 1 SKS activity = 50 hour/ 1SKS Kegiatan = 50 Jam

Contoh/ Example:

If the fasilitator full for 3 day activity, the calculation of SKS is 3 day x 8 hour= 24 hour, plus preparation ± 12 hour, then the workload is

{[(3day x 8 hour) + (12 hour)]/50 hour} * 1 SKS = 0.72 SKS

*Jika fasilitator penuh untuk satu kegiatan selama 3 hari, maka perhitungannya menjadi 3 hari x 8jam, ditambah dengan persiapan ± 12jam maka beban kerja menjadi { [(3hari * 8jam) + (12hari)] / 50 jam} * 1 SKS = 0.72 SKS*

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Invitation to review manuscript for Heliyon - Reminder

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1 message

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Manuscript Number: HELIYON-D-22-01252
Title: A Study on Sustainable Air-Travel Behaviour under the Possible Remedy of Risk Knowledge: A Mediating Perspective of Risk Perception during COVID-19

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The aviation industry is the centre of gravity for tourism-dependent countries to uplift economic activities. The COVID-19 pandemic in the early part of 2020 threatened people and the air industry to the maximum extent. This paper investigated the sustainable air-travel behaviour of passengers under the risk knowledge path. The mediating role of risk perception, i.e., physical risk, psychological risk and service quality, is also being tested on the risk knowledge-air travel behaviour association. We surveyed 339 travellers at six airports in Thailand from January to June 2021 to record their responses. We applied structural equation modelling (SEM), and the study results revealed a direct effect of risk knowledge along with an indirect effect via risk perception paths on air-travel behaviour. This paper highlighted knowledge as a remedial answer for the perceptual make-up for the sustainability of air services. The study has strong managerial implications for aviation
management to design ideal pathways to retain air services on board during the current public emergency of COVID-19.

Keywords: Sustainable air-travelling behaviour; Physical risk; Psychological risk; Risk knowledge; Service quality; Structure equation modelling

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A Study on Sustainable Air-Travel Behaviour under the Possible Remedy of Risk Knowledge: A Mediating Perspective of Risk Perception during COVID-19

--Manuscript Draft--

Manuscript Number:	HELIYON-D-22-01252
Article Type:	Original Research Article
Section/Category:	Business and Economics
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Introduction

Passenger travel behaviour changed dramatically during the COVID-19 pandemic. Aviation management calls for perceptual positioning of the passenger as a remedial tool for sustained travel demand [1]. The enduring damage continues to rise in tourism, transport, catering, entertainment and retail due to COVID-19. People perceive the current pandemic as a physical threat, employment loss, home-to-home disease transmission, suffering and death [2,3]. In the initial three-month phase, a 70% to 95% decline in passenger demand was borne by the aviation industry with passenger traffic disruptions [4,5]. However, decades of sustainable growth have been the working story of the aviation industry, even in the 2001 terrorist event of 9/11 and the 2008 global economic depression. The aviation industry enjoyed a persistent pace in annual travelling demands of up to 4.5% [6]. Historically, H1N1 and SARS diseases captured the domestic and global stature of air travel, which is also the current case of public emergency in COVID-19. The outbreak of the new coronavirus at the start of 2020 put all of China in isolation, not only the people but also industry [7]. As the outbreak spread, a variety of industries came under enormous pressure of COVID-19 in China and globally.

Thailand, as a neighbouring country, also came in contact with COVID-19 in January 2020. Thousands of travellers use Thai airports to return home, which gave birth to the virus in the country. The outbreak of the pandemic dramatically declined air traffic in Thailand, and the passenger volume and aircraft movement decreased by 55.78% and 67.39%, respectively [8].

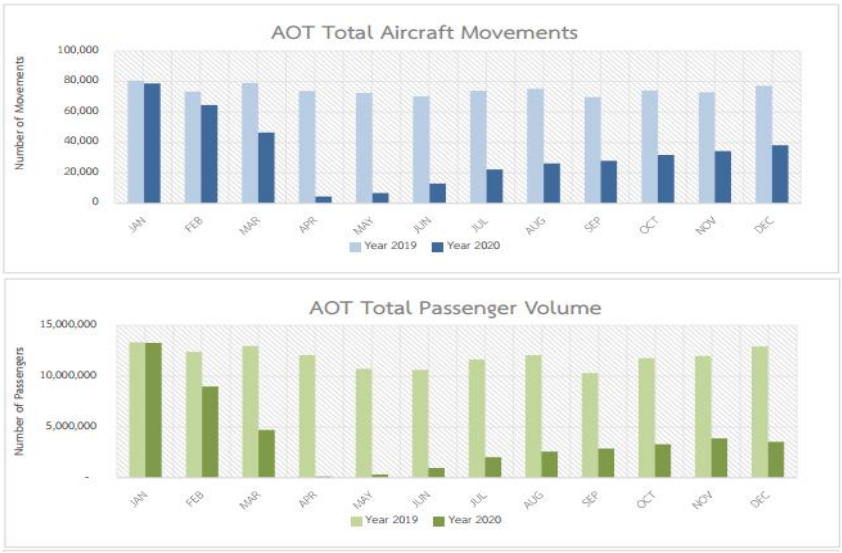


Figure 1 Comparative Position of Aircraft Movement and Passenger Volume 2019-2020 [8]

In the tourism market, scholars [9] argue that risk perception is door to judgemental uncertainty. Moreover, the preferences and behaviours of people are intended for their contact with public health emergencies in consideration of perceived risk. The prior work of [10,11] reported consumption behaviour in tourism and found the contribution of perceived risk in comparison to perceived value. Moreover, the pull-push theory of [12] argued that travelling needs and purposes stem from the primary motive of the willingness of people to travel. The work of [13] incorporates quality service as the possible only tool to fill the travelling needs of travellers by adapting to the precausal global health machinery. Moreover, they argue that the quality of service captures consumption trust and the behavioural intention service offers.

Few ongoing studies have highlighted air transportation as a path of virus spread, and countries have adopted policies to stop air service globally [14,15,16]. This gave existence to investigate the realistic path model to manage the aviation industry during the postpandemic period in a tourism-sustained country. In this regard, working executives of aviation machinery are mapping passenger awareness as a feasible path to overcome the existing challenges of commercial aviation and start a distinctive beginning based on physical and psychological safety [4]. This paper is based on three novel points. First, travelling knowledge is a critical consideration for behavioural preference during the pandemic at the destination point other than knowledge of pneumonia [3], usefulness, timing, and facilities. Second, airliners' perception of service quality holds the behavioural key to travel, willingness to use resources, and intention to fly during COVID-19. Third, the theory of knowledge-attitude-behaviour (KAB) is chosen to establish a constructive path between risk knowledge and the behavioural intention of air travel via risk perception.

Literature Review

COVID-19 is a recent issue of concern for airlines to address and ground policy for the sustainability of air services management. Prior studies have been confined to foreseeing passengers' behavioural changes, risk knowledge, physical and social services capes, satisfaction in connection to sustainable airport image and travel behaviour [1,4,16]. In association with COVID-19, aviation management must take precautions to stimulate and sustain air service as the only option for transportation management under the WHO guidelines. This paper placed service quality and travelling knowledge in a conceptual model to investigate air-travel behaviour under a deductive approach.

Behavioural Intention

The study of [17] embellished the conceptual position of behavioural intention as potential future actions of the individuals to forecast human behaviour. [18] considered five dimensions of behavioural sustainability, that is, willingness to pay, internal and external response to problems, switch and loyalty of travellers. A study on consumption behaviour reported that customer retention and buying potential services reflect repurchase intention. Furthermore, customer satisfaction consolidates the positivity, feedback and reuse of services in the aviation industry. In the context of the service sector, researchers adopted tridimensional measures proposed by [18], that is, willingness to pay, intention to reuse airport for investigating behavioural intention [19,20, 21] and subsequent hypotheses in the existence of a pandemic. In this research work, KAB theory is chosen for the development of a risk knowledge-risk perception-behavioural intention association. The KAB model establishes a continuous arrangement of acquiring knowledge, generating beliefs and forming behaviour [12]. Other models, such as the theory of planned behaviour (TPB), emphasise subjective norms and sustainable behaviour in connection to knowledge, attitudes and behaviour in the external knowledge domain of consumer behaviour. The KAB model has vast application in prior studies of education, public health, clinical medicine and other social aspects. A partial mediation effect of attitude was found by [22], and a direct positive association of knowledge, attitude and behaviour was verified along with an indirect association of knowledge in a hypertension study by [23].

Risk Knowledge and Behavioural Intention

The research of [12] reported 3-D knowledge domains of general, social and major generated from outside interaction, vast-access information and specialised knowledge fields. The individual tension preferences connect risk from the knowledge obtained by circling around the civic circle. Moreover, he finds that information promotes risk taking behaviour. Complete information transforms people to have the tendency to act rationally as exposed to risk and followed risk avoidance in connection to incomplete information [25]. Sustainability of knowledge stems passengers' intention to rejoin travel, which is restricted post-COVID-19. The distinctive positioning of the risk mapped by [26], in terms of financial loss, is directly associated with product sustainability. Second, problematic and damaging product or service characteristics ascertain psychological consumer perception and dramatize psychological risk. In contrast, consumer physical damage is caused by a poor-quality service course for physical risk. Social risk is a probable negative comment received in a family setup, work relations, and decision making. Furthermore, travel behaviour post-COVID-19 demands sustained efforts of air travel management to synchronize service utility as a performance risk along with time consumption in decision making.

The empirical findings in the field of medical science connected the spread of risk knowledge to lower perception and guide experts' behaviour in the direction of medical care [27]. Moreover, perceptual risk is the beginning of subjective belief related to the adverse behaviour of catching a disease. The cognitive components of individuals possess a stronger association with knowledge to have longer work behaviour under public emergencies [28]. Moreover, another study exposed opposite findings: poor precautionary practices among individuals were seen under the existence of knowledge and attitudes. He further showcases that work practices are always exposed to public risk. This is what the profession demands them to do in handling uncertainty and sustainable human movement to sustain civic circles.

H1. Risk knowledge significantly influences the behavioural intention of air travel during the pandemic in Thailand.

Risk Knowledge and Risk Perception

A study in the travel domain concluded that the risk of health, terror and natural disasters requires knowledge, awareness and experience to have a travelling attitude [29]. Moreover, in the context of international tourism, the abundance of risk knowledge grounds a less perceptual position on risk and decreases human uncertainty or unfavourable consequences with decisive positions [30,31]. The empirical work of [32] revealed that unawareness or zero or minimal risk stem from high-risk perception and structure negative consumption decisions.

Travel industry documents, crises, and cultural and functional risks are lifting constructs of sustainable traveller perception. Similarly, another study argued that social, physiological, psychological, time, satisfaction, capital and security risks affect travel perceptions in the service sector over a sustained period of time [33,34,35]. Additionally, service risk also needs knowledge to tackle uncertainty by designing sustainable tourism policy. The study of [30] in the international travel circle found that rich knowledge about travel, food, and health will operationalise and control perceived risk. [36] verified the sustained predictive power of risk knowledge for risk perception, [37] also studied the negative significance of risk knowledge and public perception along with interest involvement and information saturation. Prior work explained that rational choices mitigate potential risks by adopting risk sustainability to work in the presence of unfavourable circumstances.

H2. Risk knowledge significantly influences the perceived physical risk of sustainable air travel during the pandemic in Thailand.

H3. Risk knowledge significantly influences the perceived psychological risk of sustainable air travel during the pandemic in Thailand.

H4. Risk knowledge significantly influences the perceived service quality of sustainable air travel during the pandemic in Thailand.

Risk Perception and Behavioural Intention

According to [38], perceived risk is the likelihood that unfavourable outcomes would occur. People with various personal qualities perceive varying dangers in the same mode of transportation [20]. Medical experts believe that individuals with underlying medical problems such as heart disease, obesity, asthma, and diabetes may be at an elevated risk of sickness and death from COVID-19 [39]. Those who are less able to maintain a sufficient level of health care are unlikely to be ready to subject themselves to an enduring danger of incurring more medical expenses. Families with children or vulnerable members may be less inclined to risk harming a member of the family due to the new coronavirus [40].

According to a survey, people's willingness to travel by air will drastically decrease in the near future, and the sustainability of travel behaviour could be a point of concern for airliners [41]. As a result of the significant decrease in passenger loads post-COVID-19, airlines are engaging directly with their customers, most often via email, to reassure passengers about the safety steps they are taking, such as rigorous cleaning, disinfecting, and social distancing processes [6].

Another study found that evaluating the quality of services offered by businesses determines customer trust in that company and sustains consumers' behavioural intention. In an empirical study, [18] established 'SERVQUAL,' which assesses service quality along five dimensions: tangibles, dependability, responsiveness, assurance, and empathy. This method intended to assess customer satisfaction by measuring consumer expectations and perceptions. The study utilised SERVQUAL to assess the service quality of airlines from the perspective of foreign passengers. Passengers regard comfortable seats and cleanliness to be vital services that any aircraft company can provide to have sustainable competitive advantages [42]

Furthermore, passengers place a premium on "safety-related services" in the aviation sector. Behavioural intents are viewed as a consequence of service quality, influencing customer behaviour and, ultimately, the firm's financial situation. The work of [43] demonstrated a direct negative link between safety concerns, geographical damage, casualties and damage to facilities and equipment,

psychological taboo, ethical problems, financial concerns, and tourist intention. [44] investigated the negative effects of social risk, political risk, and cultural risk on Japanese tourist intention. The majority of studies have concentrated on the impact of service quality on tourist intention. Transportation convenience, tourist safety, lodging convenience, the level of tourism information, travel agency services, leisure time, and conforming psychology were all shown to be positively linked with tourism intention [45,46]. The connectivity of COVID-19 influences the sustainable behaviour of passengers, which is the subject of this study that proposes the following hypotheses:

H5. Perceived physical risk significantly influences sustainable air-travel behavioural intention during the pandemic in Thailand.

H6. Perceived psychological risk significantly influences sustainable air-travel behavioural intention during the pandemic in Thailand.

H7. Perceived service quality significantly influences sustainable air-travel behavioural intention during the pandemic in Thailand.

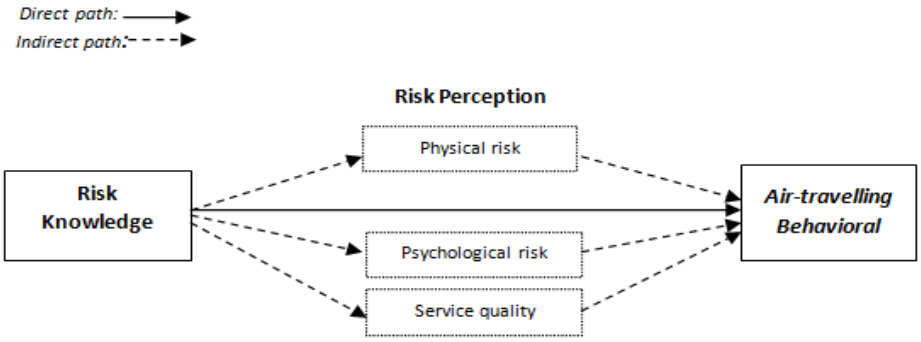
Mediating Effect of Risk Perception on Risk Knowledge-Behavioural Intention

One work [47] positioned travelling as a universal human need of modern individuals. The Health Belief Model (HBM) reported that the congruence of copious risk perception lifted an individual's health-protective sustainable behaviours [48]. Prior studies widely discussed health-seeking and health-protective behaviours and prolonged travel decisions in the context of health emergencies reported historically, including SARS and Avian flu, [49] and nonpharmaceutical intercession for disease [50]. A Korean study on travelling intention during the pandemic located citizens' travelling thrust followed in isolation times by capturing the travelling knowledge path of curtailing perceived risk [51]. The binary dimensional concept of perceived risk, which is cognitive and affective, also affirms susceptibility, severity and anxiety of an individual's exposure to risk [52]. Moreover, there is strong evidence that service quality has either a direct effect on the behavioural intentions of customer sustainability and/or an indirect effect on such intentions, mediated through customer satisfaction [18,]. A survey of 457 medical students concluded that health safety, such as the transmission of hepatitis C, is open to individuals who ask for the shed of knowledge to control the perceptual positioning of HCV and capture behavioural intention towards medical care [27]. In the marketing domain, the study of [53] mentions that an abundance of knowledge structure led to a decline in risk perception and arousal of sustainable motives towards purchasing intention. Moreover, behavioural intention is directly associated with knowledge value control of product uncertainty [54]. The empirical work of [55] in the Chinese service sector studied the factor of information disclosure intention and concluded perceived risk as a contributor to behavioural intention by means of transparent information processing.

H8. Perceived physical risk significantly mediates risk knowledge and the behavioural intention of sustainable air travel during the pandemic in Thailand.

H9. Perceived psychological risk significantly mediates risk knowledge and the behavioural intention of sustainable air travel during the pandemic in Thailand.

H10. Perceived service quality significantly mediates risk knowledge and the behavioural intention of sustainable air travel during the pandemic in Thailand.



[Figure 2 Conceptual Model of the Study]

Methods

Population and Sampling

The top six Thai airports with the majority of passengers in the first quarter of 2021, Bangkok Don Mueang, Bangkok Suvarnbhumi, Chiang Mai, Phuket, Hat Yai and Nakhon Si Thammarat, are taken as the population (N=5.05 million) of the study (see table 1). Multistage sampling is used, starting with Yamane's (1986) formula, and a sample (n=399) is drawn from the population.

Ymane formula = $N/1+N(e)^2$

Total population: N=5,050,000

Error: e=0.05

Sample: n=399

Then, the stratified sampling formula is used to obtain a proportionate sample from each of the study strata. Sample of each strata: n_s= targeted population x sampling population/total population. Participant willingness and privacy are assured along with data separation to handle the common method bias proposed in [56].

Table. 1 Statistics of air service users in the first quarter of 2021.

S. No	Thailand Airports	Number of passengers	% Decrease in passengers
1	Bangkok Don Mueang	1.82	-76.2%
2	Bangkok Suvarnabhumi	1.56	-87.0%
3	Chiang Mai	0.56	-74.1%
4	Phuket	0.46	-88.0%
5	Hat Yai	0.42	-.46.5%
6	Nakhon Si Thammarat	0.24	-25.8%
7	Chiang Rai	0.23	-61.7%
8	Udon Thani	0.22	-59.2%
9	Ubon Ratchathani	0.19	-50.6%
10	Khon Kaen	0.18	-55.0%
11	Surat Thani	0.16	-63.0%
12	Krabi	0.14	-82.9%
13	Trang	0.08	-49.6%

14	Ko Samui	0.07	-86.7%
15	Phitsanulok	0.06	-57.2%

Sources: *Airports of Thailand Public Company Limited, Department of Airports, U-Tapao Airport Authority and Bangkok Airways Public Company Limited: Analysis by the Aviation Economy Division*

The statistics of passengers at the top 15 airports in Thailand indicate a substantial decline in the first quarter of 2021 in comparison to the previous year. Bangkok Don Mueang airport had 1.82 million travellers, a 76.2% decrease, Bangkok Suvarnabhumi had 1.56 million travellers, an 87.0% decrease, Chiang Mai had 0.56 million, a 74.1% decrease, Phuket had 0.46 million, an 88.0% decrease and the fifth airport Chiang Rai had 0.23 million, a 61.7% decrease. The statistics for these six airports are shown in Table 1.

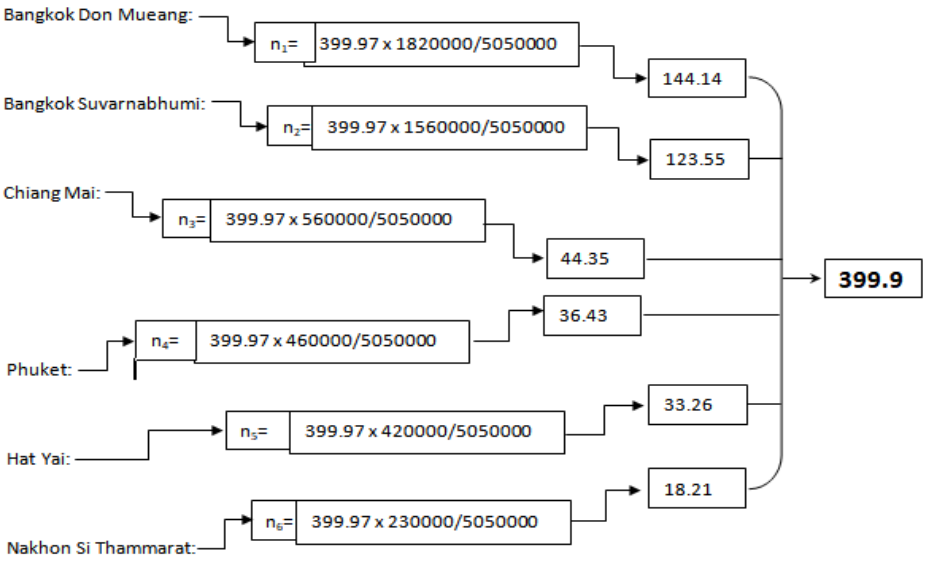


Figure 3 Sample Estimation

Instrument

This paper emphasised an adapted instrument for the measurement of five variables using a five-point Likert scale. The variable risk knowledge is measured using a 10–item scale of [12,57,58], the constructs; 3–items of physical and 4–items of psychological risk from [59] and 4–items of service quality at airports [60,50] represents risk perception. Moreover, a 13-item scale was used to measure the behavioural intention of [61,57, 62] air travel in consideration of the Thai aviation industry. Following the variable part, the questionnaire contained age, gender, education and travelling frequency to display the demographical profile.

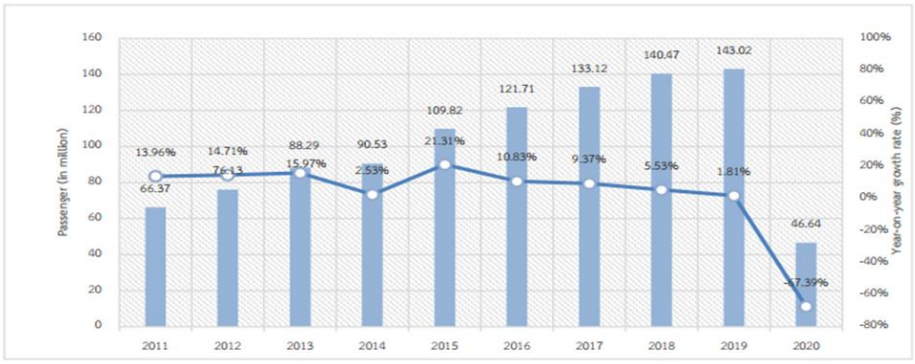


Figure 3 Passengers (in millions) and % Change 2011-2020.

The graph displays the story of air services in Thailand over a period of 10 years. In 2011, 66.37 million people used air services in Thailand (13.96), and there was an increase in the number of passengers. However, in 2019-2020, passengers decreased from 143.02 to 46.46 million, and the decline rate was 1.81 to -67.38 due to COVID-19 [11].

Data Collection and Data Analysis

Data collection was performed over a period of six months starting in January 2021 and covering the first quarter. An online survey using Google Form is being adopted by the researcher as a realistic tool to approach passengers in the presence of COVID-19 at their compulsory agreement option to be part of this study under research ethics. The simultaneous connectivity of the constructs is a central point of SEM multivariate analysis that is being performed in this study using partial least squares (PLS-3). Variance-based SEM is not contingent upon the normality of the distribution and theory testing edge in a single complex model [63]. The bootstrapping resampling technique is part of the analysis for the significance of sample estimate driving t values [64].

Findings

Demographics of the Passengers

Table 2, which provides a demographic representation of participants, indicates 163 males (40.9%) and 236 females (59.1%) ; 67 individuals aged 21-30 years (19.0%), 31-40 years (37.6%), 41-50 years (24.8%), 74 of them above 50 years (18.5%) ; 34 individuals with higher secondary (8.5%), 216 with a Bachelors (54.1%) and 149 with a Masters (37.3%) . On the same side, the participant's travel frequency was also categorised as 133 once a year (33.3%), 73 twice a year (18.3%) and 193 more than twice a year (48.4%).

Table 2 Demographic Categorisation

Item	Options	Sample
Gender	Male	163(40.9%)
	Female	236 (59.1%)
Age	21-30 years	76(19.0%)
	31-40 years	150(37.6%)
	41-50 years	99(24.8%)

	Above 50 years	74(18.5%)
Education	Higher secondary	34(8.5%)
	Bachelors	216(54.1%)
	Masters	149(37.3%)
Travel frequency	Once a year	133(33.3%)
	Twice a year	73(18.3%)
	More than twice a year	193(48.4%)

Measurement Model

Constituting the two-step analysis, first, the measurement model analysed construct validity and reliability. Convergent validity indicates the ability of an item to measure the corresponding construct. Here, the average variance extracted (AVE) scores for the independent variable RK=0.56, mediating variables PSY=0.79, PR=0.67, SQ=0.64 and finally the dependent variable BI=0.71 are well above the cut-off value of 0.5 [65]. In CFA, BI8, BI12 and BI13 are deleted for behavioural intention; PRS1 is deleted for psychological risk in consideration of the low factor loading, i.e., <0.4, as proposed by [66].

Second, reliability, which measures the consistency of items, is tested using Cronbach's alpha and CR for RK=0.90 and 0.92, PSY=0.87 and 0.92, PR=0.75 and 0.86, SQ=0.81 and 0.87, and BI=0.95 and 0.96, respectively, and ranges from 0.7 to 0.9 as good and excellent, as proposed by [63] (Chin et al., 2006) (see Table 3).

Moreover, the items' differentiation of the construct was tested using the discriminant validity measure of the heterotrait-monotrait ratio (HTMT) in variance-based SEM (see table). [67] reported an HTMT value less than 0.9, and [68] reported a value less than 0.85 to assess discriminant validity. The scores of HTMT comparisons for the study variables RK, PR, PSR, SQ and BI were below the cut-off scores (see Table 4).

Table 3. Construct Validity and Reliability

Construct	Item Code	Loadings	Cronbach's alpha	AVEs	CR
Risk Knowledge (RK)	RK1	.429	0.907	0.56	0.925
	RK2	.716			
	RK3	.784			
	RK4	.788			
	RK5	.837			
	RK6	.858			
	RK7	.764			
	RK8	.576			
	RK9	.793			
	RK10	.831			
Psychological risk perception (PSR)	PSR2	.843	0.874	0.799	0.922
	PSR3	.914			
	PSR4	.922			
Physical Risk Perception (PR)	PR1	.762	0.757	0.675	0.861
	PR2	.841			

	PR3	.858			
Service Quality	SQ1	.691	0.816	0.645	0.878
(SQ)	SQ2	.798			
	SQ3	.876			
	SQ4	.836			
Behavioural Intention	BI1	.849	0.954	0.711	0.961
(BI)	BI2	.892			
	BI3	.657			
	BI4	.881			
	BI5	.842			
	BI6	.875			
	BI7	.889			
	BI9	.838			
	BI10	.842			
	BI11	.841			

***Note**: Composite Reliability: CR; Average Variance Extracted: AVE*

Table 4 HTMT

	BI	PR	PSR	RK
BI				
PR	0.571			
PSR	0.478	0.835		
RK	0.318	0.605	0.446	
SQ	0.085	0.191	0.086	0.555

Structural model

Table 5 Direct Effect

Path	Coefficient	Standard Deviation	t value	p values	Remarks
PR -> BI	-0.323	0.067	4.848	0.000	Supported
PSR -> BI	-0.158	0.062	2.54	0.011	Supported
RK -> BI	0.181	0.076	2.372	0.018	Supported
RK -> PR	0.506	0.053	9.536	0.000	Supported
RK -> PSR	0.407	0.048	8.515	0.000	Supported
RK -> SQ	0.493	0.053	9.309	0.000	Supported

SQ -> BI	0.21	0.043	4.868	0.000	Supported

***Note**: PR: Physical Risk; PSR: Psychological Risk; RK: Risk Knowledge; SQ: Service Quality Risk; BI: Behavioural Intention.*

Table 6 Indirect Effect

Paths	Coefficients	Standard Deviation	t value	p values	Remarks
RK -> PR -> BI	-0.164	0.041	3.957	0.000	Supported
RK -> PSR -> BI	-0.064	0.028	2.269	0.024	Supported
RK -> SQ -> BI	0.103	0.024	4.257	0.000	Supported

Table 6 indicates the significance of the indirect effect of RK via PR (β=-0.164, p<0.000), PSR (β=-0.06, p<0.000) and SQ (β=0.10, p<0.000) on BI. Here, both conditions of the mediation model are verified [69,70]. The empirical evidence comes with the evidence of the mediating role of the risk perception by having the facets of physical risk, psychological risk and service quality to reach behavioural intention of travellers in the Thai aviation industry, thus supporting H8-H9-H10.

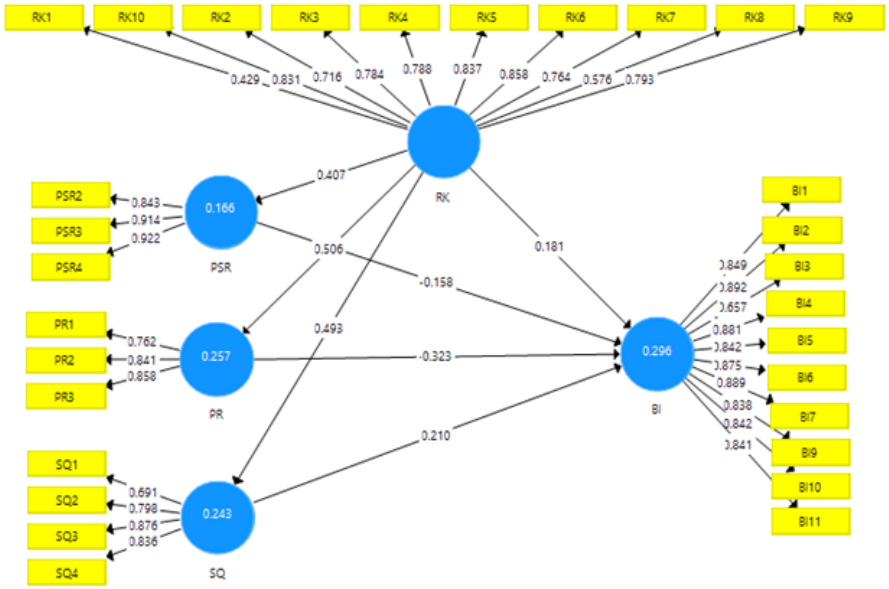


Figure 4 Structural Model

Discussion and Conclusion

Discussion

This study aimed to understand sustainable air travel behavioural intentions in the context of the Thai aviation industry to determine how pandemics alter behavioural makeup. First, the empirical results mapped a significant positive association of risk knowledge and behavioural intention to sustainable travelling decisions. This explains the contributing power of knowledge in

unfavourable situations such as COVID-19, where life threats are present but knowledge excels as an optimistic way to work or visit areas away from home via physical journey [3,27]. Second, this work elucidates the significant contribution of risk knowledge to risk perception, with a more specific positive significant impact on physical, psychological and service quality attributes to overcome the fear and arousal of integrative capacity in humans under challenging circumstances, which was also highlighted by [36]. Third, the path coefficients indicate behavioural intention under a significant negative impact of psychological and physical risk perception in connection with [42,28], while a positive significant effect of service quality is supported by [71]. This means that the less damaging perception under pandemic along with more quality aviation service sustains travellers to move towards their destination, supporting the claim of [16]. Finally, empirical evidence showcases the reasoning that the perception of risk obtains the feasibility of travel willingness. This is the path that is being highlighted by the work of [23], explaining the connectivity of knowledge to perceptual buildup contributing behavioural development. Here, many human intentions and work standards of the aviation industry in Thai circles play a connecting role to the chain safety of people to sustain travelling habits during pandemics. Ranking the mediating effect of the variables, physical risk had the highest significantly negative effect, followed by service quality with a positive significant effect and psychological risk with a minor negatively significant effect on the relationship of knowledge risk and travellers' behavioural intention.

Conclusion

This research work is based on a deductive approach to an intact theoretical model with empirical evidence to examine the connectivity of risk knowledge reasoning and perception of risk and then the behavioural intention of travellers in Thailand. A survey is conducted by incorporating 399 respondents who travel through renowned airports using a variance-based SEM technique to generate empirical evidence to test the hypothesised relationship. The statistical analysis of this work suggests the predictive power of risk knowledge in sustainable behaviour to fly using aviation services. Second, the findings reveal a significant contribution of risk perception constructs, i.e., psychological, physical and quality of service, to intention development during travel inside and outside of Thailand. Finally, the empirical evidence promulgates the mediating connectivity of risk knowledge and behavioural intention via risk perception. Overall, the study explains that pneumonia and travelling knowledge are critical tools that will sustain cognitive makeup to understand the existence of pandemics but continue the life circle with perceptual balance, leading the willing power to travel under a controlled work environment.

Implications and Limitations

The recent era of isolation modified the positions of human safety and business survival. The current pandemic has shifted the entire human conduct of social connectivity, business demeanour, travelling and many more. In the literature, a variety of studies spotlight the prevalence of pandemics along with causes and consequences in the field of academic and business research. Perceptual studies are limited in number to open the range of such disasters in the recent past. Prior studies analysed the economic, civic, health and educational bump of pandemics across the globe. Considering the pandemic crisis perception, an impact mechanism of crisis knowledge on travellers' behavioural intention via perception of risk was composed.

The academic side of the study had multiple implications as a body of knowledge. First, this study contributes to the field of service management by designing an impact mechanism of risk knowledge guiding service consumption behaviour. Second, the study accumulated travelling and pneumonia knowledge leading behavioural intention, and previous pneumonia and tourism knowledge during COVID-19 is being investigated in the Chinese context. Third, the mediating factors are given consideration in this empirical work to highlight the reasoning path from risk knowledge to travelling behaviour via physical risk, psychological risk and service quality. The empirical findings open the gate by demonstrating the conceptual means of constructing knowledge under uncertain circumstances across the country. Finally, this research elaborates the underpinning

behavioural components of intention, willingness and recommendations for going across the country in the extensive confrontation of COVID-19.

The empirical findings of the study promulgated the personification of risk knowledge on behavioural makeup in the Thai aviation industry. The management of the aviation industry adds information to sustain travelling and pandemic knowledge. This information channel will disseminate preventive measures of epidemics during travel. The perceptual development of travellers can be captured by mapping the lack of knowledge in the aviation industry by cultivating knowledge about uncertainty. This study provides critical insight for the aviation industry to redesign operation manuals in consideration of external factors, and adaptive measures are required to spread the pandemic. A perceptual shift is what the Thai aviation industry needs to achieve for sustainable local and international tourism, which would be possible by channelling knowledge of viral disease, travelling, physical and psychological uncertainty asking for service quality shift and leading traveller behaviour.

This paper makes a significant contribution to the sustainable travel behaviour of passengers during prolonged uncertain travelling situations during COVID-19. There are certain limitations that limit the study findings to six airports. Second, the limited sample of the paper can be extended to have broader generalising power to the population. Third, the cross-sectional data of this paper can be shifted to longitudinal data for in-depth work. Next, in the broader spectrum, organisational culture typologies are crucial beliefs that can be included in moderation capacity in the study model to widen future implications.

Author Contributions: W. N and K. Q conceptualised the idea of the study design and wrote the original draft and methodology. K. Q and M. T performed the review, editing, formal data analysis, and validation. Undertook the survey and worked on data, review and editing. All authors have read and agreed to the published version of the manuscript.

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Conflicts of Interest: Declare conflicts of interest or state "The authors declare no conflict of interest."

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Reviewer Recommendation and Comments for Manuscript Number HELIYON-D-22-01252

A Study on Sustainable Air-Travel Behaviour under the Possible Remedy of Risk Knowledge: A Mediating Perspective of Risk Perception during COVID-19

Original Submission
Samuel PD Anantadjaya, Dr

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Recommendation: Invite Revision **Overall Manuscript Rating (1 - 100):** 50

Custom Review Question(s):	**Response**
Methods: Are the methods described in sufficient detail to understand the approach used and are appropriate statistical tests applied?	Yes
Results: Are the results or data that support any conclusions shown directly or otherwise publicly available according to the standards of the field?	Yes
Interpretation: Are the conclusions a reasonable extension of the results?	Yes
Ethics: Does the study's design, data presentation, and citations comply with standard COPE ethical guidelines and has proper approval and consent been acquired as outlined in our Editorial Policies?	Yes
I acknowledge that I will provide requirements for improvement, where possible, for the paper to meet all the above four criteria in my comments to the author, below.	☐ OK
Please indicate whether the paper contains one of the following:	☐ Incremental advances ☐ Preliminary findings ☐ Negative results

Reviewer Comments to Author

Methods:
1. appeared to be OK using the multi-stage sampling processes. However, the stratified is based on "what" strata? Was it based on the size of airports, or the total numbers of passengers arriving into airports? The table 1 appeared to show the "total numbers of arriving passengers but nowhere is actually stated about the stratified stage of the sampling process. The proportion part of the sampling process was explicitly noted, however.

2. an additional validity and reliability may have to be added to show the overall level of validity and reliability given the available variables & sub-variables

Results:
1. the results were just too small to read
2. if the "risk knowledge" was assumed to be the mediator, why did the arrows going out of RK rather than going inside RK from PSR, PR and SQ?

Interpretation:
1. I am actually confused with the "mediator", but the arrows in PLS were going out of RK. The pertinent interpretations may be leading into other meanings though
2. Due to the different directions of arrows, the results, interpretations and managerial implications were substantially different
3. should be added lots more of the managerial implications, not only for the passengers' quality, but also for the airliners/airports

Other comments:
1. the format for the citations should have been based on APA or IEEE?
2. all citations and bibliography should be made automatic by Mendeley or other third-party programs
3. old references should be accompanied by newer ones, at least, as the situations and conditions have changed drastically due to inflations or levels of risks, particularly with the presence of covid. Old references were not having any experience of covid. Therefore, any old sources addressing perception of risk, risk handling, willingness to pay, willingness to accept and behavioral intentions were drastically different then in 1970s, 1980s and 1990s.

Reviewer Confidential Comments to Editor:

may have to perform a major overhaul on this manuscript as it is claimed to have "mediator", but the arrows are pointing to different directions. In my opinion, the arrows should have been pointing to the opposite directions from PSR to RK, from PR to RK, from SQ to RK. Then, from RK to BI. Direct arrows from PSR to BI, and PR to BI, and SQ to BI are still possible to learn the likelihood of influences.

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1 message

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A Study on Sustainable Air-Travel Behaviour under the Possible Remedy of Risk Knowledge: A Mediating Perspective of Risk Perception during COVID-19

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