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A STUDY OF CABIN SAFETY AWARENESS AMONG THAI PASSENGERS USING KNOWLEDGE, ATTITUDES, AND BEHAVIORS (KAB) APPROACH

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ABSTRACT

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Although cabin safety is everyone's responsibility, there are still continuous news reports about inappropriate passenger behaviors during flights, especially during evacuations, which have greatly concerned the aviation industry. For that reason, this research aims to study the cabin safety awareness of Thai passengers by applying the KAB conceptual model and to examine the correlations among the passengers' knowledge, attitudes, and behaviors regarding cabin safety. A survey was conducted through an online questionnaire completed by 400 Thai passengers. This survey was designed to assess the cabin safety knowledge, attitudes, and behaviors of the respondents by using a 5-point Likert scale. Descriptive statistics, Pearson's correlation coefficient, and simple linear regression were used to analyze the collected data. The results revealed that overall, Thai passengers possessed high levels of cabin safety knowledge, attitudes, and behaviors, with mean values of 4.10, 4.74, and 4.52, respectively. Statistically, there were significant positive relationships among the passengers' cabin safety knowledge, attitudes, and behaviors. Moreover, the findings showed that an increase in passengers' cabin safety knowledge positively affected their cabin safety attitudes. The passengers' cabin safety attitudes had significant positive impacts on their cabin safety behaviors. Additionally, passengers' cabin safety knowledge had a slightly positive influence on their cabin safety behaviors. In summary, behaviors of passengers that are compliant with cabin safety instructions could be improved when passengers' cabin safety knowledge and attitudes increase. This result suggests that airlines and safety-related regulators should encourage the safety behaviors of passengers by educating and adjusting passengers' attitudes. Therefore, the findings of this study can be applied as guidelines to help the relevant authorities enhance safety in the aviation industry.

Keywords: Cabin safety awareness; Thai passengers; KAB approach

1. INTRODUCTION

Safety is the highest priority of the aviation industry. It is a common goal of all the sectors involved in aviation to have every flight operate safely. The International Civil Aviation Organization (ICAO), which regulates international safety standards, always emphasizes that it is everyone's responsibility to maintain flight safety. In terms of cabin safety, it is one of the cabin crew's responsibilities to ensure the safety of the passengers onboard, protect the passengers from injuries, and reduce the severity of irregular situations. However, flight safety cannot rely solely on flight personnel; passengers also play an essential role in maintaining cabin safety during a flight. Passengers are expected to completely comply with the safety instructions to maximize survival in an emergency. Unfortunately, there seem to have been inappropriate passenger responses when emergencies have occurred. One example of unsuitable behavior by passengers is their evacuation with carry-on baggage (Mulvey, 2016), as can be seen in several incidents, such as a British Airways flight BA2276 in Las Vegas in 2015 (Phipps, 2015), an American Airlines Boeing 767 at the Chicago O'Hare airport in 2016 (Almasy et al., 2016), and recently, the Aeroflot flight SU1492, which caught fire at Moscow's Sheremetyevo airport in May 2019 (Kennedy, 2019). These situations have greatly increased public concern regarding passenger violation of safety instructions. Because many incidents show that some passengers still lack adequate cabin safety awareness, many airlines and the related regulators have proposed various ways to encourage passenger safety behaviors.

To improve people's behaviors in various areas, the Knowledge, Attitudes, and Behaviors (KAB) conceptual framework is one approach applied to study the relationships among knowledge, attitudes, and behaviors. Schrader and Lawless (2004) studied the KAB research from several different areas and concluded that the KAB approach is one potential method for examining change influenced by knowledge and attitudes, which will lead to a behavioral improvement in human performance.

Based on the KAB approach, this study assumed that what passengers know about flight safety might affect their attitudes, and the extent to which their attitudes toward cabin safety are good may consistently influence their safety behaviors. Thus, the primary objective of this study was to determine the cabin safety awareness among Thai passengers divided into 3 attributes: knowledge, attitudes, and behaviors. The secondary objective was to examine the relationships between each pair of these 3 constructs by testing the effect of cabin safety knowledge on attitudes, the effect of cabin safety knowledge on behaviors, and the impact of cabin safety attitudes on behaviors.

2. CONCEPTUAL BACKGROUND AND RELATED WORKS

2.1 Cabin safety information

According to ICAO Manual on Information and Instructions for Passenger Safety, cabin safety regulations that passengers should know are delivered to passengers through safety briefings at various stages of flight including pre-departure, exit-row occupancy, special categories of passengers, before take-off, after take-off, in the event of turbulence, pre-landing, after landing, and during irregular situations. Normally, airlines must relay this information that is critical to survival to passengers via visual briefings, such as safety briefing cards, videos, signs, placards, emergency lighting systems, and verbal briefings provided by the cabin crew (International Civil Aviation Organization, 2018). International organizations, such as ICAO, and national authorities require air operators in each country to provide cabin safety information to passengers. In Thailand, the Civil Aviation Authority of Thailand (CAAT) has issued air operator certificate requirements covering the safety briefing that must be provided to passengers. The CAAT requires commercial airlines to convey safety information through verbal and visual briefings (Civil Aviation Authority of Thailand, 2017).

Based on ICAO's manual, the cabin safety information provided to passengers through briefings can be summarized as shown in Table 1.

2.2 Cabin safety awareness

Although airlines must comply with safety standards in providing the safety information, it is often disregarded by passengers (Thomas and Bor, 2003). There are many incidents and accident reports that reveal inappropriate behaviors of passengers. Some examples include opening the overhead compartment before the aircraft has come to a complete stop, using mobile phones and electronic devices during take-off and landing, and even smoking in the airplane's lavatory (Jakarta Post, 2019). To improve the safety behaviors of passengers, the issue of safety awareness among passengers has gained attention from both safety regulators and researchers.

Table 1: Cabin Safety Information Delivered to Passengers (International Civil Aviation Organization, 2018)

Passenger safety briefings based on ICAO manual (DOC 10086)	**A summary of safety information which must be communicated through each briefing**
• Pre-departure briefing • Unstaffed exit row briefing • Briefings for special categories of passengers • Briefing conducted before take-off (safety demonstration) • After take-off briefing • Briefing in the event of turbulence • Pre-landing briefing • After landing briefing • Transit stop briefing	- Carry-on baggage allowance and the correct stowage of carry-on baggage - Restrictions on the use of smoking devices - The use of seat belts - When and how to fasten seat belts - The need to keep the seat belt fastened while seated throughout the flight location and presentation of the passenger safety briefing card - Importance of passengers reviewing the safety briefing card prior to take-off for safety reasons - The stowage of carry-on baggage in emergency exit rows - The use and stowage of portable electronic devices - Emergency lighting (emergency escape path lighting, exit signs) - The location and use of life jacket - The importance of the role of the passengers seated in exit rows in the event of an emergency - Location of emergency exits and how to open the exit - Location and use of oxygen masks - Required position of tray tables, seat backs, footrests, in-flight entertainment system (IFE), window blinds, wearing of footwear (for movement on the surface), and take-off and landing - What to do with carry-on baggage and belongings in case of an evacuation - In the event of Turbulence, the need to return to their seat and fasten seat belt, and the restriction on the use of lavatories - The importance of passengers informing cabin crew members of any safety concerns throughout the flight

Passenger safety awareness has been continuously studied in a variety of contexts. For example, Chang and Liao (2008) studied passenger perceptions of exit-row seating and found that some passengers misunderstood the responsibility and age limitation of the passengers seated in exit rows. Later, in 2010, these authors again evaluated the cabin safety information awareness of passengers traveling on a domestic flight in Taiwan. Most respondents were most aware of mobile-phone use restrictions and least aware of age limitations for exit-row seating. Moreover, Chang and Yang (2011) examined cabin safety perceptions of passengers who had safely evacuated from China Airlines flight CI120. The in-depth interview results showed that passengers require more instructions about how to use emergency equipment. A lack of information and awareness about emergency exit rows can lead to incorrect responses of passengers in an emergency.

Several methods have been proposed to improve passengers' cabin safety awareness. For example, British Airways used celebrities in their new safety video, which was launched in 2017 (Buckley, 2017). This approach corresponds with the research of Molesworth et al. (2016). These authors reported that using celebrities to convey safety messages in preflight safety briefing videos can increase the recall of safety-related information among passengers. Moreover, in several pieces of research, there were attempts to improve the safety awareness of passengers by educating (Chittaro, 2012; Chang and Liao, 2009) and motivating them or changing their attitudes (Chittaro et al., 2016), which had a positive impact on passengers' behaviors. It could be concluded that people's awareness is related to their knowledge, attitudes, and behaviors. Thus, the Knowledge, Attitudes, and Behaviors (KAB) approach is widely accepted in studies about safety-related awareness, which is described in the next section.

2.3 The Knowledge, Attitudes, and Behaviors (KAB) approach

The Knowledge, Attitudes, and Behaviors (KAB) approach is a method that examines changes in knowledge and attitudes that lead to improved human performance in many areas (Schrader and Lawless, 2004). This theoretical model affirms that knowledge and attitudes can change behaviors (Schneider and Cheslock, 2003). Therefore, to increase the prospective behaviors of people, the KAB approach has been studied in many fields. Most research using KAB models focused on health-related behaviors, for examples, obesity prevention (Baranowski et al., 2003), AIDS prevention (Dadgarmoghaddam et al., 2016), worker safety (Kao et al., 2019), information security awareness (McCormac et al., 2017), and health care and medical treatment (Xu et al., 2010). These studies all found that there are positive relationships between knowledge and attitudes, between attitudes and behaviors, and between knowledge and behaviors. Moreover, Schrader

and Lawless (2004) concluded in their work that knowledge is key to influencing attitude and improving attitude changes behaviors.

In addition to applications in health-related behaviors, the KAB approach has been applied in studying other behaviors associated with risk of death, such as behaviors related to water safety (Moran, 2008), food safety (Chang et al., 2003), road accidents (Mirzaei et al., 2014), and so on. Although the application of the KAB model in the airline industry is limited, Chang and Liao (2009) used the KAB approach in their study. These authors examined the effect of passenger education on passenger safety awareness and found positive effects of aviation safety education on airline passenger cabin safety knowledge, attitudes, and behaviors. The significant correlations among knowledge, attitudes, and behaviors can pave the way for regulatory authorities and airlines to improve the safety behaviors of passengers by increasing their knowledge and/or attitudes. Therefore, in this research, the KAB model is applied as a framework to study cabin safety awareness among Thai passengers as shown in Figure 1.

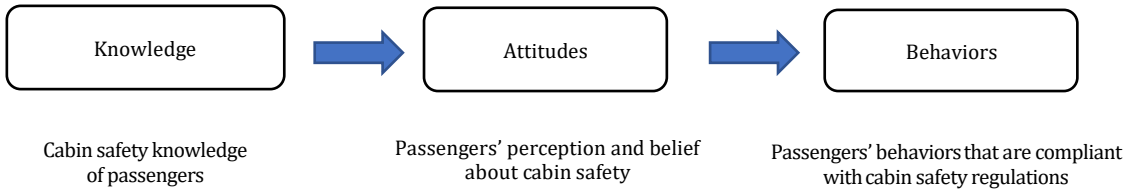

Figure 1: The KAB Model Applied in This Study

By adapting the KAB model, researchers studied Thai passengers' cabin safety awareness from three perspectives, including knowledge, attitudes, and behaviors. The level of cabin safety knowledge, attitudes toward cabin safety, and behaviors compliant with cabin safety regulations were determined. Following that study, relationships between these 3 determinants were also studied in pairs. The results would conclude that, if we can enhance the cabin safety knowledge or cabin safety attitudes of passengers, then behaviors that are compliant with cabin safety will be improved. Therefore, the hypotheses are proposed, as shown in Figure 2.

H_1: Passengers' cabin safety knowledge has a positive effect on their cabin safety attitude
H_2: Passengers' cabin safety attitude has a positive effect on their cabin safety behavior
H_3: Passengers' cabin safety knowledge has a positive effect on their cabin safety behavior

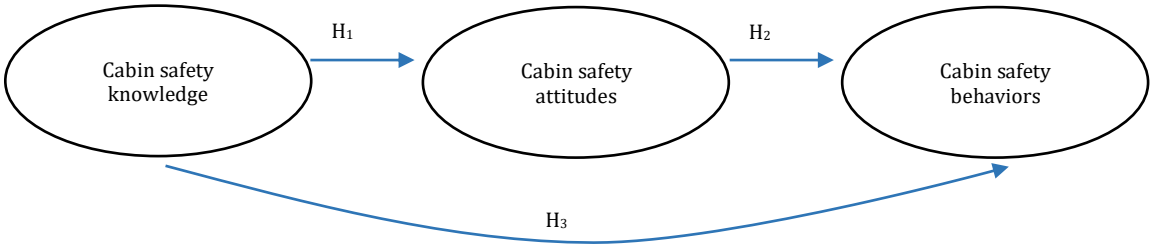

Figure 2: The Proposed Hypotheses

3. RESEARCH METHODOLOGY

3.1 Questionnaire design and sampling

Based on ICAO's Manual on Information and Instructions for Passenger Safety (DOC 10086), a 40-item questionnaire was developed to examine each passenger's awareness of cabin safety in terms of knowledge, attitudes, and behaviors. To validate the content of the questionnaire, the survey was submitted to 5 cabin safety experts, 3 safety instructors and 2 in-flight managers of commercial airlines. Then, the questionnaire items were revised according to these reviewers' comments. After that, a pilot sample of 50 Thai passengers were used to test the reliability of the 40 items in the questionnaire by Cronbach's alpha coefficient. The result showed an overall value of 0.937, which indicates an excellent level of reliability (George and Mallery, 2003). Thus, the content validity and reliability of the research instrument were acceptable.

The questionnaire consists of three components according to the proposed model (figure 1). As such, there are 4 parts, including 1) demographic data of the respondents (5 items), 2) passenger's knowledge of

cabin safety (22 items), 3) passenger's attitudes toward cabin safety (6 items), and 4) passenger's cabin safety behaviors (12 items).

The first part of the questionnaire asks about gender, age, education, occupation, and number of flights taken per year. In the second part, in answering 22 cabin safety-related questions, the respondents evaluated their own cabin safety knowledge, ranging from 1 = *totally unaware* to 5 = *totally aware*. In the third part, we assessed the passenger's attitude toward cabin safety by self-reported Likert scale questions ranging from 1 = *strongly disagree* to 5 = *strongly agree*. In addition, in the last part, respondents examined their cabin safety behaviors by a Likert scale ranging from 1= *never* to 5 = *always*.

Regarding the scope of this study, the two major airports located in Bangkok, namely, Suvarnabhumi International Airport and Don Mueang International Airport, were selected because of their heavy traffic. Thai passengers were perceived as the most frequent air travelers in the Asia Pacific region as per Expedia's survey in 2018. The survey reported that Thai passengers take an average of 10.1 flights per year, followed by Japanese and Indian travelers, respectively (Bangkok Post, 2018). It is interesting to understand the safety awareness of passengers who tend to be frequent travelers. For that reason, Thai passengers were chosen as the sample in this research.

In addition, Thailand's Ministry of Tourism and Sports (2019) reported that the average number of Thai travelers departing from Suvarnabhumi Airport and Don Mueang Airport in 2018 was 519,798 per month. A sample size of 400 is acceptable according to Taro Yamane's sampling formula (Yamane, 1973), with 95% confidence level.

In the next step of data collection, the data were collected online in June-July 2019 by using a convenience sample approach through a Google Form questionnaire publicized on a social media platform. In total, data were gathered from 400 Thai passengers who used to travel from the previously mentioned airports.

3.2 Data analysis

First, the respondent demographics including gender, age, education, occupation, and number of flights per year were basically explained by frequency and percentage. Then, the levels of cabin safety awareness of the Thai passengers were shown from 3 perspectives, namely, 1) cabin safety knowledge, 2) cabin safety attitudes, and 3) cabin safety behaviors, by mean value and standard deviation.

Prior to analyzing the effects of knowledge and attitudes on behaviors, Pearson's correlation coefficient (r) was applied to prove the linear relationships between each pair of determinants: 1) cabin safety knowledge and cabin safety attitudes, 2) cabin safety attitudes and cabin safety behaviors, and 3) cabin safety knowledge and cabin safety behaviors. A positive value of the correlation coefficient (r) indicates a tendency of one variable to increase together with another variable (Kirch, 2008). In addition, the strength of the relationship between variables was interpreted as per Deborah Ramsey (2016) as $r > 0.7$ = strong, $r > 0.4$ = moderate, and $r > 0.1$ = weak.

In the last step, a linear regression analysis was used to predict the influence between each pair of the variables, including 1) the effect of passengers' cabin safety knowledge on their cabin safety attitudes, 2) the effect of passengers' cabin safety attitudes on their cabin safety behaviors, and 3) the effect of passengers' cabin safety knowledge and their cabin safety behaviors. The results answered the questions about whether or not the cabin safety behaviors of passengers would be improved if we developed passengers' cabin safety knowledge and attitudes. In the first round of the regression analysis, the cabin safety knowledge of the respondents was put into the analysis model as the independent variable, whereas the cabin safety attitude was set as the dependent variable. Second, the cabin safety knowledge was entered as the independent variable, and cabin safety behavior was treated as the dependent variable. Finally, the cabin safety knowledge as the independent variable and the cabin safety behaviors as the dependent variable were imported into the analyzing process.

4. FINDINGS AND DISCUSSION

4.1 Respondents demographics

From the 400 valid questionnaires collected online, the vast majority of the respondents were female (62.5%) and were 30-39 years old (29.3%). Most (62%) respondents had undergraduate degrees. The primary occupation of the respondents was company/private-sector employees (34.8%). Half of the respondents (51%) took 1-3 flights each year. The demographic data of the respondents are presented in Table 2.

Table 2: Demographic Profile of Respondents (N = 400)

	n	Percentage
Gender		
Male	150	37.5
Female	250	62.5
Age		
< 20 years old	42	10.5
20 - 29 years old	62	15.5
30 - 39 years old	117	29.3
40 - 49 years old	93	23.3
50 years old and above	86	21.5
Education		
< undergraduate	36	9.0
Undergraduate	248	62.0
Graduate and higher	116	29.0
Occupation		
Government sector / State enterprise officer	54	13.5
Company / Private - sector employees	139	34.8
Business owner / merchant / freelance	87	21.8
Students	88	22.0
Others	32	8.0
Number of flights per year		
1 - 3	204	51.0
4 - 6	93	23.30
7 - 9	36	9.00
10 or more	65	16.30

4.2 Level of cabin safety knowledge

The respondents' answers to 22 items about cabin safety knowledge are shown in Table 3. Overall, the Thai passengers possessed a high level of cabin safety knowledge. The item that Thai passengers most recognized was "Restrictions on the use of smoking devices" (mean = 4.715 and SD = .70). In addition, the cabin safety knowledge with which the respondents were least familiar was "when and how to open the emergency exit" (mean = 3.27 and SD = 1.23). Notably, the 3 lowest items related to the respondents' cabin safety knowledge were all related to emergencies and irregularities, such as "When and how to open the emergency exit" (item 14), "The minimum age and requirements of passenger seated in emergency exit row" (item 13), and "The most suitable brace position" (item 20) with mean values of 3.27, 3.60, and 3.85 respectively. This finding is consistent with the study by Chang and Liao (2010), which reported that the Chinese respondents were least aware of age limitations for exit-row seating.

Table 3: Cabin Safety Knowledge of the Respondents

Items		Mean	SD
K1	Airlines' carry-on baggage allowance	3.988	1.0678
K2	Dangerous goods, prohibited and restricted items which are not allowed in carry-on baggage	4.050	1.0632
K3	When and how seat belts are to be fastened	4.520	.7490
K4	Restrictions on the use of smoking devices	4.715	.7000
K5	Where to stow your carry-on baggage	4.450	.7804
K6	Restrictions on the stowage of carry-on baggage in emergency exit rows	3.988	1.1047
K7	Restrictions on using mobile phones and electronic devices during take-off and landing	4.500	.7358
K8	How to prepare for take-off and landing	4.440	.8650
K9	The location of placards and the passenger safety briefing card.	4.145	.9307
K10	How to find the nearest emergency exit	4.103	.9350
K11	How to notice the emergency lighting (emergency escape path lighting, exit signs)	4.168	.9064
K12	The responsibility of passengers seated in emergency exit rows	3.860	1.1196
K13	The minimum age and requirements (physical, cognitive and sensory capacity) of passenger seated in emergency exit row	3.595	1.2787
K14	When and how to open the emergency exit	3.265	1.2323
K15	The restriction on the use of lavatories in the event of turbulence	4.093	1.0376
K16	The position of passengers in the event of turbulence	4.285	.9413
K17	The stowage of carry-on baggage in the event of turbulence	4.075	1.0593
K18	Location and use of life jackets or equivalent individual flotation devices	3.918	1.0041
K19	How to place and secure the oxygen mask on your face and/or the infant/child's face	3.968	.9266
K20	The most suitable brace position	3.853	1.0880
K21	What to do with carry-on baggage and belongings in case of an evacuation	4.175	1.0804
K22	Removal of high-heeled shoes in an evacuation	4.040	1.2215

4.3 Level of cabin safety attitude

From the responses of 6 questions that asked respondents about their attitude toward cabin safety, all the items indicated that Thai passengers had a very good level of attitude toward cabin safety. According to Table 4, the item for which the respondents had the highest level of attitude was, *"It is necessary to comply with cabin crew's instructions, illuminated ordinance signs and posted placards"* (item 4), with a mean of 4.80 and a SD of .5006, and the lowest attitude of the respondents among the 6 items was, *"It is every passenger's responsibility to maintain flight safety"* (item 1), with a mean of 4.61 and a SD of .7343.

Table 4: Cabin Safety Attitude of the Respondents

Items		Mean	SD
A1	It is every passenger's responsibility to maintain flight safety.	4.610	.7343
A2	Passengers must follow cabin safety regulations without any exceptions.	4.760	.6028
A3	It is necessary to pay attention to safety demonstration.	4.740	.5596
A4	It is necessary to comply with cabin crew's instructions, illuminated ordinance signs and posted placards.	4.800	.5006
A5	Passengers should inform cabin crew of any safety concerns throughout the flight.	4.770	.5549
A6	The speed of evacuation can increase survivability.	4.770	.6066

4.4 Level of cabin safety behavior

The respondents were asked with 12 items to indicate the frequency of the behaviors they performed that are compliantly with cabin safety instructions. The behaviors of cabin safety of these passengers are shown as the mean and SD in Table 5 below. The behavior with which the respondents could comply the most was item 3, *"fastening seat belt when the seat belt sign is on"* (mean = 4.785, SD = 0.69). However, the behavior with which the respondents could least comply was item 1 *"Not requesting the seat at exit rows unless being able to operate the emergency exit"* (mean = 3.610, SD = 1.5). The 4.52 of the overall mean indicated that Thai passengers had a very good level of cabin safety behaviors.

Table 5: Cabin Safety Behaviors of the Respondents

Items		Mean	SD
B1	I will not request the seat at exit rows if I am not capable of operating the emergency exits.	3.610	1.5012
B2	I refrain from using mobile phones during take-off and landing.	4.565	.8647
B3	I fasten my seat belt whenever the 'fasten seat belt' sign is on.	4.785	.6928
B4	I refrain from walking or using toilet when the 'fasten seat belt' sign is on.	4.725	.8068
B5	I refrain from smoking on board.	4.765	.8316
B6	I stow my carry-on baggage in overhead bin or under the seat in front of me.	4.750	.6470
B7	I pay attention to safety demonstration.	4.430	.7724
B8	I carefully read the safety briefing card.	4.085	.9434
B9	I notice the location of nearest emergency exit.	4.363	.9017
B10	For take-off and landing, I prepare for the required position of tray table, seat back, footrest, IFE, and window blind.	4.760	.6192
B11	After landing, I remain seated until an airplane has come to a complete stop.	4.650	.7341
B12	During the flight, I follow crew instructions, illuminated ordinance signs and posted placards.	4.765	.5200

According to the commonly used interpretation of the mean value analyzed from a 5-point Likert scale, there are 5 points with 4 ranges between the lower end and the upper end. Thus, each range equals 0.80. The meaning of each range can be explained as 4.21-5.00 = highest level, 3.41-4.20 = high level, 2.61-3.40 = moderate level, 1.81-2.60 = low level, and 1.00-1.80 = lowest level.

In summary, the level of Thai passengers' cabin safety awareness can be simplified by 3 components, including 1) the cabin safety knowledge among Thai passengers was at a high level ($\bar{x}$ = 4.10); 2) the attitude of the passengers toward the cabin safety was at the highest level ($\bar{x}$ = 4.74); and 3) the cabin safety behaviors of the respondents were also at the highest level ($\bar{x}$ = 4.52).

Obviously, the safety behavior of the passengers related to emergency exits obtained the lowest self-reported score. This finding shows that the passengers' knowledge about emergency exits was inadequate, for example, knowledge about how to operate the emergency exit, the age limitation of emergency exit seat occupancy, and the responsibility of the passengers seated in an emergency exit row. This revealed issue is consistent with the research by Chang and Yang (2011), which concluded that the passengers lacked knowledge of how to use the emergency equipment, and the study by Chang and Liao (2010), which reported that the Chinese respondents were least aware of the age limitations for exit-row seating. Furthermore, when examining the details of the passengers' cabin safety behaviors, the study found that the lowest mean value was related to requesting an emergency exit seat. This observation emphasizes that it was quite difficult for passengers to comply with the emergency exit-related regulations. Therefore, the knowledge about emergency exits should be better communicated to passengers to possibly improve cabin safety behavior among passengers.

4.5 The correlations between the cabin safety knowledge, cabin safety attitudes, and cabin safety behaviors

To study the relationship between each pair of the 3 determinants, including cabin safety knowledge, cabin safety attitudes, and cabin safety behaviors, Pearson's correlation coefficient was run to test whether there were linear relationships among the variables. As shown in Table 6, the result reported that there was a moderate positive relationship between cabin safety knowledge and cabin safety attitude (r = .473, p < .001). However, cabin safety knowledge and cabin safety behavior had a moderate positive correlation (r = .482 and p < .001). Additionally, between cabin safety attitude and cabin safety behavior, there was a moderate positive relationship (r = .568 and p < .001). In summary, all linear correlations were positive between each pair of the 3 determinants, namely, 1) cabin safety knowledge and cabin safety attitude, 2) cabin safety knowledge and cabin safety behavior, and 3) cabin safety attitude and cabin safety behavior.

Table 6: Correlations Between the Three Variables

Correlations		Knowledge	Attitude	Behavior
Knowledge	Pearson's Correlation	1	.473**	.482**
	Sig. (2-tailed)		.000	.000
	N	400	400	400
Attitude	Pearson's Correlation	.473**	1	.568**
	Sig. (2-tailed)	.000		.000
	N	400	400	400
Behavior	Pearson's Correlation	.482**	.568**	1
	Sig. (2-tailed)	.000	.000	
	N	400	400	400

*** Correlation is significant at the 0.01 level (2-tailed).*

4.6 The effects of cabin safety knowledge and attitudes on cabin safety behaviors

A simple linear regression analysis was performed to examine the effects of the independent variables on dependent variables between each pair of hypothesized constructs. In the first step, the *passengers' cabin safety knowledge* was entered to see if it significantly contributed to the prediction of *cabin safety attitude*. The result shows that passengers' cabin safety knowledge as the first predictor could significantly predict the cabin safety attitude, F = 114.68, p < .001, and the cabin safety knowledge accounted for 22.4% (R square = .224) of the explained variability in cabin safety attitude (B = .326, p < .001).

Second, when analyzing the effect of *passengers' cabin safety knowledge* on *cabin safety behavior*, the results show that cabin safety knowledge could statistically significantly predict cabin safety behaviors, F = 120.65, p < .001, and cabin safety knowledge accounted for 32.1% (R square = .233) of the explained variability in the cabin safety behavior, with B = .350, p < .001.

Finally, the last pair of the analysis, *passengers' cabin safety attitude*, was set as an independent variable and *passengers' cabin safety behavior* was assigned as a dependent variable. The result revealed that the cabin safety attitude could significantly predict the cabin safety behavior with F = 189.99, p < .001, and the cabin safety attitude accounted for 32% (R square = .323) of the explained variability in the cabin safety behavior (B = .599, p < .001).

Therefore, the results of the linear regression analysis show that the hypotheses H_1, H_2, and H_3 were supported at p-value < .001, which is consistent with the KAB conceptual model applied in this study.

Table 7: Linear Regression of the Variables Predicting Passengers' Cabin Safety Behavior

Predictors	B	S.E.	Beta	Sig. t
Cabin safety knowledge	.350	.032	.482	.000
(Constant)	3.085	3.085		.000
R^2 = .233, F = 120.65, Sig. of F = .000				
Cabin safety attitude	.599	.043	.568	.000
(Constant)	1.680	.207		.000
R^2 = .323, F = 189.99, Sig. of F = .000				

From table 7, when considering the two predictors, namely, cabin safety knowledge and cabin safety attitude, it can be concluded that passengers' cabin safety knowledge has a positive effect on passengers' cabin safety behavior. When passengers' knowledge increases, the cabin safety behaviors of these passengers will slightly improve. Likewise, passengers' cabin safety attitude also has a significant positive effect on passengers' cabin safety behaviors. If we can improve the cabin safety attitude among passengers, their behaviors that are consistent with safety regulations can be improved by almost 60% of the increased cabin safety attitude. However, when comparing these two predictors, it found that the cabin safety attitude has more effect on

passengers' cabin safety behaviors than passengers' cabin safety knowledge. Hence, the passengers' attitude toward cabin safety should be influenced first to enhance the passengers' cabin safety behaviors.

5. CONCLUSION

This study determined the cabin safety awareness among Thai passengers. According to the KAB conceptual framework, the level of safety awareness was analyzed in 3 components: 1) knowledge, 2) attitudes, and 3) behaviors. In general, Thai passengers had high levels of knowledge, attitudes, and behaviors toward cabin safety, which is a good sign for facilitating the survival of accidents, as stated by the National Transportation Safety Board (2001). This is consistent with Thai Airways flight TG917's incident on 13 February 2019 at Heathrow airport; most of the passengers onboard were Thai citizens. The news reported that all the passengers cooperated well and followed the cabin crew's instructions (Boyle, 2019). Moreover, the findings contribute to the understanding that passengers should be more educated about emergency exit operation during emergencies and issues related to emergencies (e.g., responsibility of the passenger who is seated in the emergency exit row, when and how to open the emergency exit, and the suitable brace position). By applying the KAB conceptual model, the relationships among these 3 components were also examined. The findings show the positive correlations between cabin safety knowledge and attitude, between cabin safety attitude and behavior, and between cabin safety knowledge and behavior. Additionally, the effect of each construct on the others was analyzed. The result showed that cabin safety knowledge positively affected cabin safety attitudes. In addition, cabin safety attitude had a positive effect on cabin safety behaviors. Moreover, cabin safety knowledge had a significant effect on cabin safety behaviors. Thus, the KAB framework is completely supported in this study. As a result, this contribution suggests ways for airlines and relevant safety authorities to improve cabin safety behaviors among passengers by enhancing their cabin safety knowledge and cabin safety attitudes. However, there is a limitation in this research because the data were collected only from Thai passengers. These findings may not apply to every population. Thus, future research should account for cultural differences, which might affect the cabin safety awareness of passengers.

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