EFFECTS OF AIRLINES' CABIN CREW TRAINING ON THEIR FLIGHT SAFETY PERFORMANCE

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ABSTRACT

This study examines the impact of airlines' cabin crew training on their flight safety performance, and evaluates the effectiveness of the cabin crew's emergency evacuation training, in order to better understand whether their training performance affects airlines flight safety in practice. Kirkpatrick's four-level training performance assessment method is used as the basis of this study, while factor analysis, *t*-test, ANOVA and SEM (Structural Equation Modelling) are used for data analysis. Most respondents agree that the training content can be clearly learned without language barriers if the airlines use domestic instructors. In addition, most respondents felt that airlines should improve the frequency with which they update the training material and that more practical drills and line training should be added to training syllabus, especially with regard to emergency evacuations. SEM method is used to assess the relationships among the training syllabus, skills learning, operational performance and flight safety performance. The results show that the training syllabus positively affects skills-learning, skills-learning positively affects operational performance and flight safety performance, and operational performance directly affects flight safety performance.

Keywords: Airline, cabin crew, training, flight safety performance, emergency evacuation

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1. INTRODUCTION

On August 2, 2005, an Air France Airbus flight 358 veered off the runway in landing and ended up in a ditch next to the runway, leading to an engine fire and the whole airplane eventually caught on fire. Fortunately, all 309 people on board were evacuated safely within four minutes, although investigators later found that only four out of the eight emergency exits were open, and only two emergency slides were deployed. The emergency evacuation procedures that were followed for Air France Flight 358 have been widely used as important training materials with regard to in cabin flight safety (Airway, 2005).

This example indicates that good emergency evacuation and safety training of the cabin crew play a critical role in the survival of passengers, even though this particular evacuation process did not comply with the FAR Part 25, Section 803 regulation, which states that for an airplane with over 44 passengers, all passengers must be evacuated within 90 seconds (FAA, 1990).

Tracy Jen (2006) stated that the purpose of cabin crew training is to achieve the most effective implementation of the given procedures, to assist crewmembers in avoiding errors, to improve efficiency, and to motivate other crewmembers to improve their overall performance. Only appropriate training will enable the crew members to have effective emergency response ability and to undertake improved communication, so that if an emergency situation occurs, they can work to ensure the survival of passengers. Thus, the definition of successful cabin safety training is the degree of improvement in cabin crewmembers situational awareness, emergency responses, and communication.

2.1. Education and Training of Cabin Crew

According to Article 171 of Taiwan's Civil Aviation Flight Operation Regulations (CAA, 2008),

"The airline operator shall have a cabin crew training plan. The cabin crew can officially perform their duty only after the completion of their training; and in order to maintain the familiarity of the emergency equipment and their duties during emergency evacuation, the cabin crew shall have recurrent training ever year after."

In order to improve service quality and to ensure flight safety, operators should subject newly hired cabin crew to a program of rigorous training. In addition to a brief introduction of the company's operations and objectives, cabin crew training in Taiwan can also include the following two areas:

1. Ground school training syllabus. A ground school syllabus contains the basic training of the cabin crewmembers. The duration of training varies from operator to operator, but generally lasts for three months, and covers the following subjects:
    - Emergency Escape Training: The curriculum should include the introduction of the exit door and emergency equipment operating procedures, life jacket demonstration, CPR and swimming. Some operators have simulators to provide more realistic situation training in sea and land emergency escapes, cases of fire and so on.
    - Safety Training and Medical Emergency Training: Safety training includes the cabin crewmember's Crew Resources Management (CRM), as well as dealing with hi-jacking, explosives, dangerous goods, and unruly passengers, and medical emergency training courses such as CPR and first aid.
    - Service, Language, and Deportment Trainings: Service training covers service procedures and techniques, wine and cocktail mixing, and preparing special meals. Language training includes Mandarin and English announcement (some companies even including Japanese and Taiwanese), conversational

English, Taiwanese, and Japanese. Deportment training includes personal dress, hairstyle, make-up techniques, and dealing with passengers.

2. Flight Training. After passing the ground school training, in order to fully understand the service procedure, and improve situational responses and handling in an actual flight, the students must undergo real flight training. Flight training typically requires one to three months and tests are conducted after its completion. If the trainee does not meet the required standard of training items, then they are not accepted for employment. The cabin crew who pass the test must undergo recurrent training at least once every year, with a focus on emergency escape drills and safety training.

This paper will emphasize the crew training related to flight safety, such as emergency escapes, while other training items, such as service, language, medical, and deportment, will not be discussed in this paper.

2.2. Principles in Training Performance Assessment

Performance assessment is the final step in a training process, and it provides feedback that can be used to improve training method. This paper utilizes Kirkpatrick's (1959a, 1959b, 1960a, 1960b, 1979, 1985) four-level training assessment model as explained below, which is perhaps the most widely accepted approach for training program evaluation (Alliger and Janak,1989).

- Reaction: This is defined as trainee's feeling towards the training method and procedure. Responses from trainees at the end of the training will be measured, including their assessments of the instructor, content, training material, and training methods.
- Learning: This is defined as the trainee's understanding and absorption of the training

principles, factual materials, and techniques.

- Behaviour: This is defined as the application of the training principles and techniques, and it measures the effectiveness of trainee's conduct when working in the real working environment.
- Result: This is defined as the results achieve in relation to the required goals. Its main purpose is to present the results from the training development, and to assess the effectiveness of training with regard to improving the performance of an organization.

3. METHODOLOGY

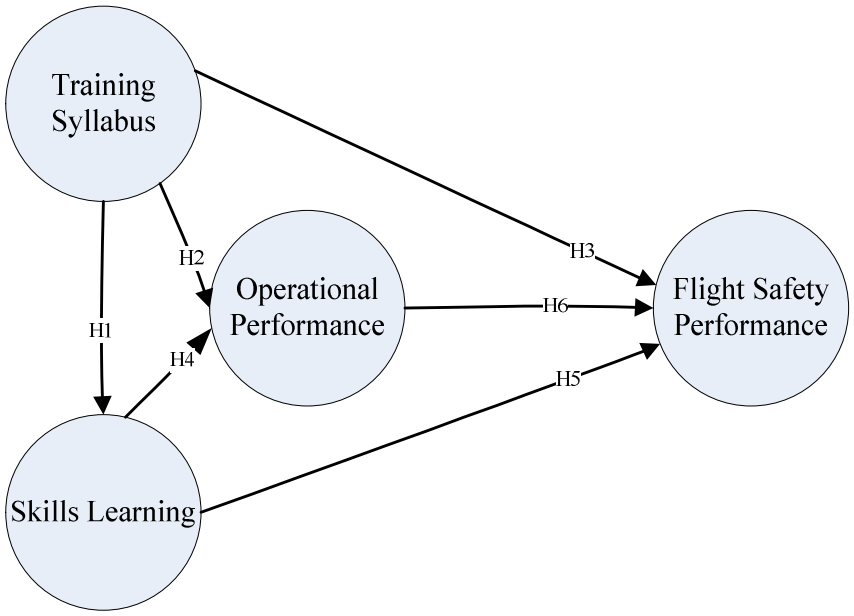
3.1 Structure of the Research

Based on the references mentioned in the previous sections, as well as the goal of this paper, the structure of this work is shown in Figure. 1. By following Kirkpatrick's (1959) four-level training performance assessment model, the reaction level is re-named as the training syllabus, the learning level as skills learning, the behaviour level as operational performance, and the result level as flight safety performance. The resulting structural model is used to assess the effects of cabin crew training on flight safety performance. In addition, the demographic backgrounds of the crewmembers are also considered to see if they have any significant effects. It is expected that the results of the analysis presented in this paper can be used as reference to improve airlines' training programs. The hypotheses are as follows:

- Hypothesis 1: A training syllabus has a positive effect on skills learning (Kirkpatrick, 1959; Dean, 1999).
- Hypothesis 2: A training syllabus has a positive effect on operational performance (Kirkpatrick, 1959; Dean, 1999).
- Hypothesis 3: A training syllabus has a positive effect on flight safety (Kirkpatrick, 1959; Dean, 1999).

- Hypothesis 4: Skills-learning has a positive effect on operational performance (Kirkpatrick, 1959; Dean, 1999).
- Hypothesis 5: Skills-learning has a positive effect on flight safety performance (Kirkpatrick, 1959; Dean, 1999).
- Hypothesis 6: Operational performance has a positive effect on flight safety performance (Kirkpatrick, 1959; Dean, 1999).

Figure 1: The Research Model



3.2 Design of the Questionnaires

Based on literature review and expert opinions, a drafted questionnaire was completed, and feedback was then obtained from operators and experts. After several rounds of corrections, the final questionnaire was completed, containing 45 items. A five-point Likert scale was used to assess the importance of each item, with 1 as the least important and 5 as the most important. The questionnaires were then sent to the flight service departments of Taiwan's domestic airlines for distribution to cabin crewmembers.

3.3 Data Analysis

This research utilized the basic descriptive statistics to gather the respondents' opinion about their training performance and self-evaluation of their flight safety performance. We used factor Analyses methods to identify a smaller set of dimensions, or factors related to training performance and flight safety performance. The Cronbach's alpha-value reliability analysis was used to evaluate the content of the questionnaires, and the ANOVA method was used to assess differences in respondents' demographic backgrounds. Finally, SEM was used to summarize the overall effects of training performance on flight safety.

4. RESULTS

4.1 Sample and Population

The received questionnaires were analysed using STATISTICA 6.0, SPSS 10.0 and AMOS 5.0. The questionnaires were sent to a domestic airline on Jan. 15, 2007, and returned on Feb. 26 of the same year. A total of 1,000 questionnaires were sent with 225 returned. After eliminating 17 responses due to incompleteness, there was a valid return rate of 20.8%.

The questionnaires include items on the respondents' gender, age, and years of employment, educational level, and job classification. Out of the 208 valid responses, 168 were females (80.8%), 38% aged 31-35 and 33.7% over 35. Years of employment ranged from 35.6% for 7-9 years and 44.7% for over 9 years, 13% between 4-6 years, and 6.7% under 3 years. Overall, 80.3% of the respondents had over 7 years of employment, which indicates most of them went through multiple training classes. With regard to the educational level, 61.1% of the respondents had college degrees, 36.1% had been to vocational schools, and 2.9 % with degrees higher than college level. One interesting note is that over 50% of the responses were from more senior crewmembers, which added to the credibility of this research.

4.2 Descriptive Analysis of Cabin Crew Training Performance and Flight Safety

4.2.1. Training Syllabus

In general, the feedback agrees with the importance of the training syllabus (agreement index ranges from 4.27 to 3.58). The total mean of the training syllabus items is 3.79, of which "the practical training is one of the best training methods" and "line training can improve my understanding of my job" received the highest marks of agreement (both over 4). Thus, it is important for airline operators to consider both practical and line trainings when designing the training syllabus.

The training syllabus items with the lower scores are as follows: "my understanding of the English instructions used by the foreign instructors", "my understanding that the training material is often updated", "I am satisfied with the company's training method", and "my satisfaction with the content of company's training material". The scores for all these items are below 3.7, which indicates that the respondents' satisfaction with the content and arrangement of the training was low. It is thus suggested that the airlines should revise the design and arrangement of their training courses. In particular, the respondents stated that it was especially difficult to understand content that was not delivered in their native language. Because English ability is the recognized international aviation language, its proficiency is very important in commercial aviation related works. Although Taiwan airlines have set up minimum requirement of English ability (TOEIC 550) to recruit new cabin crew, this result implies that the cabin crew's foreign language ability is not sufficient. The suggested solution is to increase the English requirements, including speaking, listening and reading ability.

4.2.2. Skills Training

The survey's results indicate that the respondents were generally satisfied with the items in

this category, and the scores range from 4.24 to 3.55. The total mean of skills training is 3.88, and the items with higher scores are: “I can correctly operate the emergency exit door and equipment after training”, “the training improves my understanding of emergency evacuation procedures”, “the training improves my ability to accurately follow the emergency evacuation SOP”, “the training improves my understanding of the basic knowledge of the airplane”, and “the training improves my overall professional skill”.

The items with the lower score questionnaires are: “I can effectively handle medical emergencies after training”, and “I am better at controlling my emotions after training”. Both of which had scores lower than 3.7. It is thus suggested that airlines should improve their training in handling medical emergencies and emotion control techniques. Another solution to solve this problem is to give priority to recruit cabin crew with medical background.

4.2.3. Operational Performance

Generally speaking, the results indicate the respondents’ positive attitude towards operational performance, with the scores ranging from 4.4 to 3.58. The total mean of operational performance is 3.94, and the higher rated items are: “trust among crewmembers is important”, “the SOP makes it easy for me to effectively do my job”, and “the debriefing during shift changes is important to the management of a team”.

The items with the lower scores are: “I will proactively question my doubts about some of the items in the SOP”, and “I will voice my opinion when other crewmembers do not follow the SOP”, with both scores are less than 3.7. This result indicates the crewmembers will not voluntarily voice their opinion on the SOP, nor they will openly correct their colleagues when the SOP procedures were violated. These results are most likely related to safety culture. The

airlines should thus establish an anonymous voluntary reporting system and encourage their employee to speak up in order to mitigate this problem. However, it is difficult to be effective without trust between upper management level and employees.

4.2.4. Flight Safety Performance

Positive responses were obtained in the category of flight safety performance as indicated by the range scores of 4.14 to 3.47. The total mean of flight safety is 3.80. Among the related items are: "I will ask my colleagues when I have questions during a flight", "better communication is achieved among domestic crewmembers", and "my emergency response capability has improved because of the training", all have scores higher than 4.0.

The items with the lower scores are: "my decision making ability will not be affected because of emergencies", "communication with expatriate crewmembers has improved after training", and "my understanding of the expatriate crewmembers seldom results in mistakes", and all of these had scores of less than 3.7. This result indicates that the current training does not improve the crewmembers' decision-making and communication abilities. It is thus suggested that airlines should improve the communication and decision-making skills training in the design of their future training courses.

4.3 Factor Analysis

The Kaiser-Meyer-Olkin (KMO) overall Measure of Sampling Adequacy (MSA) was used to determine the appropriateness of using factor analysis. KMO values above 0.50 for the factor matrix indicate that using factor analysis is appropriate (Hair et al., 1995); the KMO value for the present study was 0.783~0.887 (Table 1). The factor analysis employs the principal component analysis method. The eigenvalues suggested that three-factor solution explained

65.273% of the total variance for training syllabus construct, four-factor solution explained 73.152% of the total variance for skills learning construct, two-factor solution explained respectively 62.477%, 55.539% of the total variance for operational performance and flight safety performance construct.

All factors with eigenvalues greater than 1.0 and a factor loading of 0.5 or greater (Norusis, 1985) were retained for analysis. Cronbach's alpha was calculated to test the reliability of each factor. The alpha coefficients for all factors ranged from 0.606~0.915, above the minimum reliability value of 0.6 (Fornell and Lacker, 1981). The three factors were labelled factor 1: Training content, factor 2: Capability of instructors and factor 3: Training method for training syllabus construct. The four factors were labelled factor 1: Work attitude, factor 2: Professional capability, factor 3: Emergency handling and factor 4: Knowledge for skills learning construct. The two factors were labelled factor 1: Following procedure and factor 2: Team work for operational performance construct, and the two factors were labelled factor 1: Communication and factor 2: Decision making in emergency for flight safety performance construct.

Table 1: Factor Analysis of the Training Syllabus, Skills Learning, Operational Performance and Flight Safety Performance

Construct	Factor	Eigenvalue	Cronbach's Alpha	% of variance	KMO
Training syllabus				65.273	0.887
	Factor 1 Training content	4.909	0.866		
	Factor 2 Capability of instructors	1.231	0.878		
	Factor 3 Training method	1.040	0.625		
Skills learning				73.152	0.898
	Factor1 Work attitude	7.811	0.915		
	Factor2 Professional capability	1.596	0.854		
	Factor3 Emergency handling	1.256	0.845		
	Factor4 Knowledge	1.041	0.764		
Operational performance				62.477	0.822
	Factor1 Following procedure	2.747	0.753		
	Factor2 Team work	1.001	0.606		
Flight safety performance				55.539	0.783
	Factor1 Communication	3.385	0.729		
	Factor2 Decision making in emergency	1.058	0.630		

4.4 The T-Test and ANOVA Analysis between Sample Characteristics and Factors

This paper utilizes a *t*-test and ANOVA to analyse any significant differences between different sample characteristics and the training, performance and flight safety. The results are given in Table 2. Using *t*-test analysis, significant differences between gender groups were found in the case of Factor2, Decision making in emergency of flight safety performance. We found that male respondents rated their decision making in emergencies as better than the females respondents.

The significant differences between age groups were found in work attitude, emergency handling and knowledge of skills learning construct. The following procedure factor of operational performance construct, communication factor and decision making in emergency factor of flight safety performance construct are also found to have significant differences related to age. The agreement about those factors is higher for those with age 35 and older. A probable explanation of this finding is that the elder cabin crew are more experienced in their job, so generally, they are more recognize the effectiveness of training which may improve their skills learning, operational performance and flight safety performance.

The significant differences between work experience groups were factor capability of instructors, work attitude, following procedure and decision making in emergency. There is a distinct difference in the opinion of the respondents about the instructor's capability for those cabin crew with less than 3 years of experience as compared to those with more than 3 years. The junior cabin crew's English ability and professionalism are usually not as good as senior ones. Therefore, they are more agreeable and dependent on the importance of capability of instructors during training courses.

In work attitude of the skills leaning factor, there is a distinct difference between those respondents with 7 to 9 years of work experience and those with over 9 years. In following procedure category of the operational performance factor, those respondents with over 9 years of experience gave very different responses to those with less than 3 year and 4 to 6 years work experience. In the emergency decision making category of the flight safety performance factor, those with over 9 years work experience gave very different responses to those with 4 to 6 years of experience. These results imply that the more senior crew members have better work attitude, following procedure, and better decision making ability in emergency since they are more experiences in this field.

Table 2: *t*-test and ANOVA results between Sample Characteristics and Factors

	Gender	Age	Work experience	Education	Job level
	Male (a)	20-25yrs old (a)	<=3 yrs (a)	College (a)	Purser (a)
	Female (b)	26-30yrs old (b)	4 -6 yrs (b)	University (b)	Subordinate Purser (b)
		31-35yrs old (c)	7 -9 yrs (c)	Graduate school (c)	Senior cabin crew (c)
		> 35 yrs old (d)	> = 9 yrs (d)		Cabin crew (d)
Training syllable					
Factor 1 Training content	0.055	0.237	0.374	8.887**a>c,b>c†	0.756
Factor 2 Capability of instructors	0.053	1.804	2.779* a>b,a>c,a>d†	2.597	2.927*a>b†
Factor 3 Training method	0.004	1.261	0.969	0.525	2.118
Skills learning					
Factor1 Work attitude	0.082	4.704** d>c†	2.933* d>c†	3.736*a>c,b>c†	0.603
Factor2 Professional capability	1.073	1.768	1.764	1.049	0.722
Factor3 Emergency handling	0.774	4.182** d>a†	1.706	0.040	1.785
Factor4 Knowledge	0.768	3.302* d>a†	2.256	1.033	0.931
Operational performance					
Factor1 Following procedure	1.208	10.532** d>a, d>b, d>c†	6.389* d>a,d>b†	1.835	7.149**a>d,a>c,b>d†
Factor2 Team work	1.495	1.427	2.526	1.289	1.406
Flight safety performance					
Factor1 Communication	2.728	3.979** d>c†	0.582	2.148	1.938
Factor2 Decision making in emergency	6.023* a>b†	5.448** d>a,d>b,d>c†	2.659* d>b †	1.164	3.701*a>d,a>c†

* $p<0.05$; ** $p<0.01$; † Scheffe P post-hoc analysis results

In the category of training content and work attitude category of skills learning, there is a distinct difference between those respondents who have graduate school degree and those who did not. In training content, the score is higher for college graduates and in work attitude the score is highest for those with less than a college education.

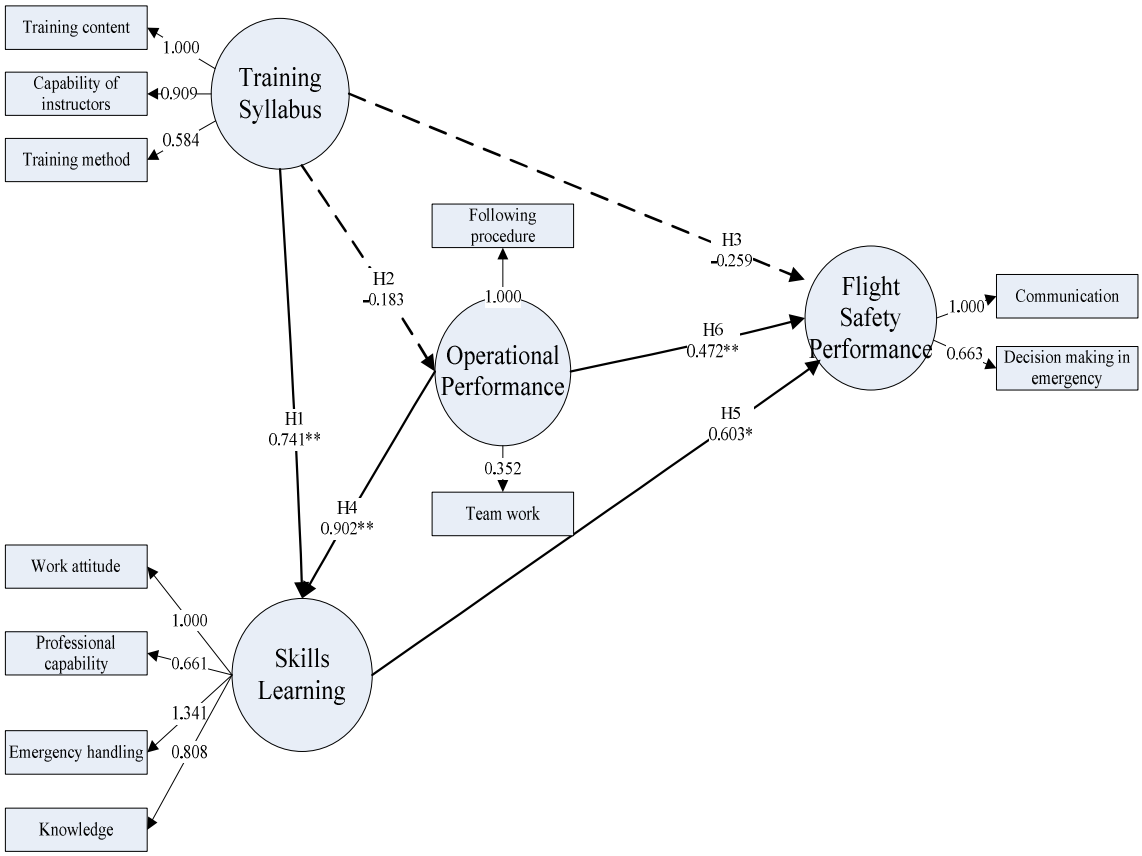
There are significant differences between job level groups in the factors of capability of instructors, and following procedure and decision making in emergency. There is a distinct difference between the pursers and their subordinates in the factor of capability of instructors, as the pursers show higher agreement. Similar results for the items related to following procedure in the conduct behaviour factor, there is a distinct difference between pursers and their subordinates, with the former have the highest scores. In emergency decision making factor of the flight safety performance construct, there is a distinct difference between pursers, subordinates purser and senior cabin crew. These findings imply that senior pursers are more recognize the effectiveness of cabin crew training, especially on the factor of following procedure and decision making in emergency.

4.5 SEM Analysis

The proposed model was tested by using the following four construct: training syllabus, skills learning, operational performance and flight safety performance. The three factors “Training content”, “Capability of instructors” and “Training method” were used as the measurement variables of training syllable. The four factors “Work attitude”, “Professional capability”, “Emergency handling” and “Knowledge” were used as the measurement variables of skills learning. The two factors “Following procedure” and “Team work” were used as the measurement variables of operational performance. In addition, the two factors “Communication” and “Decision making in emergencies” were the measurement variables for

flight safety performance. After the completion of the model (Figure 1), AMOS software was used for the SEM analysis to examine the relationships between each pair of hypothesized constructs. The results of the hypotheses testing indicated a good fit between the model and observed data in Table 3. The overall fit indices of the measurement model were as follows: the χ^2/df ratio of model was 1.3333, p = 0.0898, Goodness of Fit Index (GFI) = 0.96, Adjusted Goodness of Fit Index (AGFI) = 0.93, Comparative Fit Index (CFI) = 0.98, Normed Fit Index (NFI) = 0.95, Root Mean Square Error of Residual (RMR) = 0.016, and Root Mean Square Error of Approximation (RMSEA) = 0.04. One can see the model fit all eight-conformance indices, indicating the overall conformance of the research is consistent.

Figure 2: The Structural Model



The results of the analysis show that the training syllabus has a significantly positive effect on skills learning (estimate=0.741, $p < 0.001$). Skills learning has a significantly positive effect on operational performance and flight safety (estimate=0.902, $p < 0.001$; estimate=0.603, $p < 0.01$). Finally, operational performance also has a significantly positive effect on flight safety (estimate=0.472, $p < 0.001$) (see Table 3) Therefore, the hypothesized model fits the empirical data, and H1, H4, H5, and H6 are supported. However, H2 and H3, that the training syllabus has a positive effect on operational performance and flight safety performance, were not supported due to the insignificance of estimated coefficients of –0,184 and -0.259 ($p > 0.05$), respectively.

Table 3: Structural Model Results

Relationship	Estimates	Hypotheses testing	
H1 Training syllabus → Skills learning	0.741	**	Supported
H2 Training syllabus → Operational performance	-0.184		Not Supported
H3 Training syllabus → Flight safety performance	-0.259		Not Supported
H4 Skills learning → Operational performance	0.902	**	Supported
H5 Skills learning → Flight safety performance	0.603	*	Supported
H6 Operational performance → Flight safety performance	0.472	**	Supported
Goodness of fit indices of model	**Criteria**		**Indicators**
χ^2/d.f	< 2		1.3333
p- value	> 0.05		0.0898
Fit indices			
GFI	> 0.9		0.96
AGFI	> 0.9		0.93
CFI	> 0.9		0.98
NFI	> 0.9		0.95
RMR	< 0.05		0.016
RMSEA	< 0.05		0.04

*p<0.01,**p<0.001

5. DISCUSSION

5.1 The Results of Descriptive Analysis

It is generally agreed by the surveyed cabin crewmembers that practical drills and line training will make the training performance better with respect to the emergency evacuation and safety trainings. With regard to the training contents, the result indicates that the frequency of updating the training material is inadequate when compared to the other items in the questionnaire. The results from the factor analysis also indicate that the training content, instructors' capability, and training methods are the three most important factors in the design of an the airline training course.

The cabin crewmembers considered that their work related knowledge, attitude, and skills have improved after training. It was generally agreed by the respondents that training improves the crew's basic knowledge of the airplane, and enables them to have a better understanding and execution of the SOP during emergencies, and better handling of on-board emergency equipment. However, the crewmembers considered the training were less effective in the improvement of work attitude. In general, the formation of attitude is something cultivated in a complex, long-term process (Fabrigar et al., 2006), more related to how people value life (Debono, 1987; Homer and Kahle, 1988) and a reflection of personality (Ulleberg and Rundmo, 2003). Therefore, the cabin crew's respondent in the present study is understandable. Also, the crewmembers considered that both teamwork and following the SOP are important and the results show that they tend to trust each other and follow the SOP. However, when they have doubts about the SOP, or if the other crewmembers do not adhere to the SOP, they would not proactively ask questions or raise their concerns. This situation is typical related to Chinese culture and worth to further research to this area.

5.2 Effect of Personnel Characteristics

The results indicated that male cabin crew had more confidence in their emergency decision making in the category of flight safety performance. In addition, the male cabin crew considered that the training definitely improved their decision-making abilities.

Those crewmembers aged 35 and older had better responses with regard to work attitude, emergency handling, and knowledge in skills learning, following procedure of the operational performance factor, and communication and emergency decision making in the flight safety factor. This indicates that the older cabin crewmembers considered that the training can definitely improve their work attitude. After receiving several recurrent trainings, it can be expected that such employees would possess more professional knowledge and emergency handling capabilities. Besides, their understanding and practical application of the SOP, can also be expected to be better than those of their younger colleagues. For the cabin crew with less than 3 years of work experience, their responses for the instructors' capabilities were higher in the training syllabus factor. This result indicates that the company is likely to provide better instructors for newcomers.

Positive responses were obtained from those employees with more than 9 years of work experience, with regard to skills learning in the work attitude factor, following procedures in the operational performance factor, and emergency decision making in the flight safety factor. This indicates that the longer an employee has been working for an airline, the more positive their work attitude are as well as the better their understanding and execution of the SOP.

The cabin crewmembers with graduate school education were less positive with regard to the training contents of the training content factor, and work attitude in the skills learning factor.

This result indicates that those crewmembers with higher education levels demanded more with regard to the substance of the training materials and courses. They considered that the training was not very effective in improving their work attitude.

Pursers had more positive views of the instructors' capabilities with regard to the training content, following procedure of the operational performance factor, and emergency decision making in the flight safety factor. This result indicates that when a crewmember reaches higher level in the company, in order to be a role model to their colleagues, they tend to view the qualifications of the instructors more positively, and follow the SOP more faithfully. Further, they also agree more strongly that the training would improve their emergency decision making.

5.3 SEM Results

The SEM results show that the training syllabus does not positively affect operational and flight safety performance. Previous analysis indicated that frequently updating the training material is essential for cabin safety training. Therefore, outdated training content could cause the training syllabus to become less effective with regard to operational performance and flight safety performance. The results also show that the instructors who speak the same language as the crewmembers are more capable of providing training that improves the operational performance and emergency decision making in cabin safety related factors. These findings may explain why the results showed no support for the training syllabus's positive effect on performance and flight safety.

6. CONCLUSION AND RECOMMENDATIONS

This paper examined the effects of airline cabin crew training on their flight safety performance. The results indicate that airlines should improve the frequency of updating the training material so that the crewmembers can obtain the most up-to-date flight safety information. More practical drills and line training should be added to the training syllabus as it can make the crew become more familiar with the exit door operations and emergency equipment. The airlines may also consider use domestic instructors so that the crewmembers can clearly learn and understand safety information and professional skills without language barriers. On the other hand, how to improve their cabin crew's English ability, especially junior one, is also essential in the improvement of their knowledge.

This research only examined the emergency evacuation and flight safety trainings of the cabin crew, and it is recommended that follow up research should be done in medical and language trainings to uncover those influential factors, and that a review of the literature be conducted to find other influence factors.

Lastly, the culture aspect in flight safety is suggested for future research since safety is related to more than just technical area, but also strongly affected by the culture of different regions.

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