

A Study on the Structural Relationship between Role Stress and Creative Self-Efficacy and Creativity among Flight Attendants

Seon-Hee Ko¹

¹Dept. of Airline Service,

377-3 Musim west BLVD Seowon Gu

Cheongju Chungbuk, 28674, South Korea

sunny_ko@hanmail.net

Abstract

Background/Objectives: This study intended to examine the effect of role stress perceived by flight attendants on creative self-efficacy and creativity by using flight attendants of A Airlines.

Methods/Statistical Analysis: The survey was done to flight attendants for 4 weeks from January 7, 2016. After explaining research purposes and how they answer the questions, the questionnaire was distributed to them. 230 copies in total were distributed, and 218 were retrieved. Excluding 23 copies where respondents did not answer questions sincerely, 195 copies were used for analysis. The data were analyzed using SPSS 21.0 and AMOS 22.0.

Findings: The findings of the structural equation model were $X^2=429.779(p=0.000)$, GFI=0.891, AGFI=0.874, NFI=0.909, and RMR=0.023. Compared with indices used as general criteria for models, the values of this model are satisfactory, so the model seems to be proper 18. The path analysis per factor in the whole model is as shown in figure 1, and test results for research hypotheses are shown in table 4. Specifically, hypothesis 1-1 suggested for the relationship between role conflict and creative self-efficacy is

adopted, given that path coefficient is 0.258 ($t=4.119$). Second, hypothesis 1-2 proposed for the relationship between role ambiguity and creative self-efficacy is adopted, given that its path coefficient is 0.209 ($t=-2.204$), satisfying the criterion. Third, hypothesis 2 proposed for the relationship between creative self-efficacy and creativity was adopted, given that its path coefficient is 0.452 ($t=2.362$). Finally, hypotheses proposed for the relationship between role conflict, role ambiguity, and creativity were all adopted, given that their path coefficients are 0.282 ($t=-3.779$), and 0.349 ($t=-4.399$), given that all the t values are significant.

Improvements/Applications: Focusing on findings that the positive effect of role conflict on creative self-efficacy, more studies on not just its negative functions but also its positive functions should be carried out.

Key Words : Role Stress, Role Conflict, Role Ambiguity, Creative Self-Efficacy, Creativity.

1 Introduction

In general, corporations have considered the employees' personal life and professional life as separate. However, due to changes in lifestyle, diversification in values, changes in the overall social atmosphere and the influence of mass media these days, the importance of one's family life is growing. In the case of cabinet crew members of Korea-based airlines, the share of female employees is overwhelmingly high and there are an increasing number of married women being hired in these functions as well. The cabin crew members who offer face-to-face services to customers on behalf of the airline undergo a high level of stress due to the limited space, direct contact with customers over a long time and the need to carry out various tasks in a continuous manner. For married female crew members the stress is added as they need to take care of their family life and childcare in addition to the responsibilities they carry in their professional life.

Work-related stress refers to the response that one shows to the stimuli related to work and more specifically refer to the degree of which these stimuli have a negative impact ¹. One of the major

causes of work-related stress is the role stress source, which includes role conflict, role ambiguity and role overload². Role stress refers to the psychological and mental disharmony that is created when there is a gap between the expectation of the role that needs to be played by the employee and the actual results of role-playing³. A high level of work-related stress has a negative impact on one's psychological and physical well-being⁴ and leads to high attrition, low job satisfaction and low organizational performance⁵. Many studies have been conducted on stress related to work. While stress is generally recognized as having a negative effect on job changes or work efficiency, but it does not always have a negative effect⁶. Therefore more various studies on role stress are needed. As for airline crew members, they are in the profession group that undergoes great stress as the job requires them to respond to different customers on each flight and customer needs grow increasing diverse and sophisticated. Such role stress of the employees can have a negative effect on not only the individual employee but also the organization as a whole⁴, and can also affect the creative behavior and self-efficacy of the individual employee⁷. One of the reasons work-related stress needs to be managed on an organizational level is because an increasing number of studies show that stress has a direct impact on the psychological health of employees and organizational effectiveness⁸.

Self-efficacy is defined as the belief in one's ability to carry out a series of activities, or the motivation and cognitive resources needed to carry out a specific task⁹. Creative self-efficacy refers to the selective cognition on whether one can carry out a creative activity well¹⁰. It is essential in understanding the motivation of whether the employee can make creative efforts to solve a difficult situation and continue to work on it. In general self-efficacy is an individual personality trait, but is based on self-esteem and locus of control¹¹. But creative self-efficacy refers to the selective cognition on whether one can carry out creative activities well. Such creative self-efficacy is a very major factor in understanding the motivation of whether an employee can continue to make an effort to overcome a challenge in a difficult situation, and as such, is being studied extensively¹².

While it is difficult to agree on a single definition of creativity as it is a multi-dimensional concept, in general it refers to the process of drawing out a resolution to a problem by generating

new and practical ideas¹³¹⁴. Over the years, studies on creativity have focused on creative organizational performance, and therefore have neglected the topic of creativity on the individual employee level. However, creative performance can only be possible when the creative efforts of the employees are sustained. Given that the expression of one's creativity is directly related to one's work, the degree to which the employees participate creatively is very important¹⁵. If an individual's personality or cognitive ability tends not to change easily, creative self-efficacy tends to accept change very well¹², which makes it essential to conduct a study on the relation between creative self-efficacy and creativity to promote the expression of individual creativity.

The creativity of employees is likely to be expressed while one carries out one's work. As such studies on creativity have mostly focused on the work variables such as the complexity of the task or the task characteristics. However, there was little academic interest in studies the effect that employees' stress has. As interest grew on the argument that work task negatively affects both the individual employees and the organization as a whole, it has been suggested that stress is related to creativity, too. Role stress which is one of the work-related stress factors is being studied as something that affects the creativity of employees¹⁶ and work role is being studied as something that is related to opportunity structure and the self-efficacy of employees⁷. Through such theoretical review, the hypotheses were established.

The airline industry in Korea had limited competition that only focused on competition over routes and service quality in the years where there were only two airlines. But starting in 2005, with the emergence of low cost carriers that differentiate themselves on price, competition in the market has heated up. Thus this research seeks to verify the impact of role stress as experienced by airline cabin crew members on their self-efficacy and creativity, thereby presenting both theoretical and practical implications.

2 Materials and Methods

The survey was conducted to flight attendants in A Airlines in Korea who face passengers. The survey was done to flight attendants

waiting for their flight works in the office for 4 weeks from January 7, 2016. After explaining research purposes and how they answer the questions, the questionnaire was distributed to them. 230 copies in total were distributed, and 218 were retrieved. Excluding 23 copies where respondents did not answer questions sincerely, 195 copies were used for analysis. The data were analyzed using SPSS 21.0 and AMOS 22.0.

3 Empirical findings

3.1 Demographic characteristics of the sample

The findings of frequency analysis to examine demographic characteristics of the sample are shown in table 1. In gender, the proportion of females (81.5%) was larger than that of males (18.5%), given the characteristics of cabin crew. In age distribution, those in their 20s took up the largest proportion 61.5%), followed by those in their 30s (27.2%), and those in their 40s (11.3%). In their schooling, the largest group was college graduates 81.8%, followed by graduate school graduates (10.3%), and technical college graduates (8.7%). In working year distribution, majority of them (63.1%) worked for less than 5 years, followed by those who worked for 5 to 10 years (20.0%), and those who worked for 10 to 15 years (11.3%), and those who worked over 15 years (5.6%). In marriage status, singles took up the majority (61.6%), showing that single women in their 20s took up the majority of respondents.

Table 1: General characteristics

	Distinction	Frequency	Percentage
Gender	Female	159	81.5
	Male	36	18.5
Age	20~29	120	61.5
	30~39	53	27.2
	40 and above	22	11.3
Marital status	Single	119	61.0
	Married	76	39.0
Education	2-year college graduates	17	8.7
	Undergraduate school graduates	158	81.0
	Graduate school graduates	20	10.3

Duration of employment	Less than 5 years	123	63.1
	5 years-less than 10 years	39	20.0
	10 years-less than 15 years	22	11.3
	More than 15 years	11	5.6
Total		195	100

3.2 Reliability and validity

To properly measure survey questions, they passed through sophistication. To secure discriminant validity and convergent validity, confirmatory factor analysis was performed, table 2 shows the values. Strict requirements of goodness-of-fit are as follows: RMR is lower than 0.05; GFI, NFI, and CFI are above 0.9; AGFI is above 0.8 [17]. All the standardized loadings connecting measurement items and related factors are above 0.5. AVE which measures the amount variance explains by research items are above 0.50. The criteria for t value to be accepted are ± 1.96 , and all the values are within the acceptable range.

To identify convergent validity more precisely, reliability test was done using construct reliability. Usually, if the value of construct reliability is over 0.7, it is considered to be acceptable. The values of construct reliability of all factors in the confirmatory factor analysis suggested in table 2 were over 0.9, revealing high reliability [17]. Goodness-of-fit indices in confirmatory factor analysis were suggested excluding items damaging validity. Excluding item in this research is 'I creatively improve flight-related tasks (0.441).' in creativity category. The findings show that all in the scope of adoptability except for X^2 value which is sensitive to sample size [18].

Table 2: Confirmatory factor analysis (CFA) for the measurement model

Factor	Measurement Category	Std. factor loading	t Value	SMC
Role conflict	My boss gives ambiguous instructions.	.607	---	.709
	I do not know my boss's needs and expectations.	.777	17.228**	.668
	My boss gives a dual instruction.	.706	15.402**	.584

	The limitations of the rights on the job are unclear.	.716	19.003**	.588
Role ambiguity	I do not understand my rights and responsibilities on the job.	.884	---	.599
	I do not understand the role expected.	.792	19.707**	.881
	I feel a lack of understanding and description of the job.	.701	19.218**	.678
	I do not understand clearly about the work I have undertaken.	.690	18.668**	.690
Creative Self-efficacy	I am confident that I can creatively achieve the set goals.	.687	17.457**	.785
	I am confident that I can creatively carry out my tasks on the flight.	.745	---	.690
	I can creatively make use of the information I learned in the training institute to fit the service situation.	.759	18.890**	.579
	I can creatively carry out my tasks during flights when there are unusual circumstances.	.825	17.923**	.623
Creativity	I creatively address situations by taking into account specific service situations during a flight.	.880	---	.633
	I come up with creative ideas on flight-related tasks.	.720	18.998**	.709
	I apply my creativity during flights.	.856	19.003**	.589
$\chi^2=378.005(df=138, p=0.000)$, $\chi^2/df=2.739$, RMR=0.027, GFI=0.881, AGFI=0.863, NFI=0.943, IFI=0.932, CFI=0.931, **:P<.01				
AVE: Role Conflict 0.589, Role Ambiguity 0.663, Creative Self-efficacy 0.590, Creativity 0.583				
Construct reliability: Role Conflict 0.825, Role Ambiguity 0.900, Creative Self-efficacy 0.847, Creativity 0.902				

Discriminant validity requires that, when mutually different concepts were measured, the relations among measured values should be low. To secure discriminant validity, this study used average variance extracted (AVE) which examines whether shared variance between observed variables measuring latent variables is larger than shared variance with other latent variable. Consequently, to test discriminant validity of the measurement model, this study compared AVE values and correlation coefficients of research units. Discriminant validity is secured if AVE between two factors is larger than correlation coefficient squared, that is, coefficient of determination¹⁹. The values suggested in table 3 satisfy such criteria.

Table 3: Correlation Matrix

	Role Conflict	Role Ambiguity	Creative Self-efficacy	Creativity
Role Conflict	.767			
Role Ambiguity	.522**	.814		
Creative Self-efficacy	-.155**	-.281**	.768	
Creativity	-.220**	-.298**	.591**	.763

** all correlations are significant at $p < 0.01$ (2-tailed), diagonal value: square root AVE

3.3 Hypothesis test

To test mutual influences among variables suggested in the research model, this study used structural equation model which is useful in testing and evaluating mutual relationships among construct concepts through covariance structural analysis. The findings of the structural equation model were $X^2=429.779$ ($p=0.000$), GFI=0.891, AGFI=0.874, NFI=0.909, and RMR=0.023. Compared with indices used as general criteria for models, the values of this model are satisfactory, so the model seems to be proper¹⁸. The path analysis per factor in the whole model is as shown in figure 1, and test results for research hypotheses are shown in table 4. Specifically, hypothesis 1-1 suggested for the relationship between role conflict and creative self-efficacy is adopted, given that path coefficient is 0.258 ($t=4.119$).

Second, hypothesis 1-2 proposed for the relationship between role ambiguity and creative self-efficacy is adopted, given that its path coefficient is 0.209 ($t=-2.204$), satisfying the criterion that t value $\geq \pm 1.96$. Third, hypothesis 2 proposed for the relationship between creative self-efficacy and creativity was adopted, given that its path coefficient is 0.452 ($t=2.362$). Finally, hypotheses proposed for the relationship between role conflict, role ambiguity, and creativity were all adopted, given that their path coefficients are 0.282 ($t=-3.779$), and 0.349 ($t=-4.399$), given that all the t values are significant.

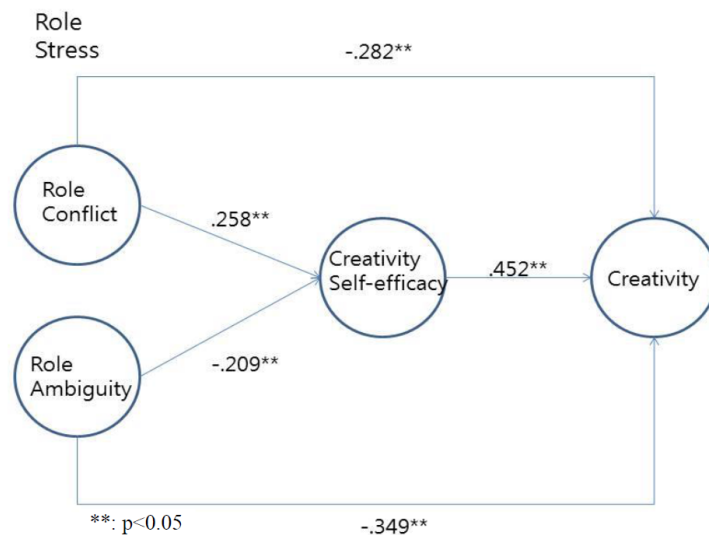


Figure 1: Structural Model Testing of the Conceptual Model

Table 4: Structure model path analysis

H	Path	Estimate	S.E	C.R	P value
1-1	Role Conflict --> Creative Self-efficacy	.258	.018	-4.119**	.000
1-2	Role Ambiguity --> Creative Self-efficacy	-.209	.043	2.204**	.014
2	Creative Self-efficacy --> Creativity	.452	.057	2.362**	.021
3-1	Role Conflict --> Creativity	-.282	.048	-3.779**	.000
3-2	Role Ambiguity --> Creativity	-.349	.062	-4.399**	.000

**:=t-statistic (≥ 1.96) sig. level of $p < 0.05$

4 Conclusion

This study intended to examine the effect of role stress perceived by flight attendants on creative self-efficacy and creativity by using flight attendants of A Airlines. The findings were as follows. First, based on the theoretical review, role stress was divided into sub-categories of role conflict and role ambiguity. The analysis showed that role conflict had a positive effect on creative self-efficacy (Hy-

pothesis 1-1.) During a flight, the tasks are generally divided among crew members. Using the airline door as a reference point, they are assigned duty codes and carry out customers services in their assigned zone. Although there are designated zones, depending on the situation, they help colleagues in other zones or collaborate with them. That is, there are often cases where organizational members carry out multiple tasks at the same time, rather than focus on one task at a time. Successful completion of various tasks leads to self-efficacy. The experience and service skills gained from successful task completion are shown to be more helpful in generating creative ideas than stress does.

Second, role ambiguity was found to have a negative effect on creative self-efficacy (Hypothesis 1-2). If an organizational member does not understand her own rights or doesn't clearly understand the role she needs to carry out, creative self-efficacy was undermined. That is, if the organizational members don't understand what to do, what specific tasks they are in charge of or what their rights are during their tasks, their competence level and confidence were decreased. In the case of cabin crew, they are obligated to take part in cabin briefing and cockpit briefing. Only when a clear task assignment and education on how to address emergency situations are given during cabin briefing can their creative self-efficacy be formed. In addition, developing a program to boost creative self-efficacy and employing it during initial recruitment or re-training of cabin crew can also be a way of addressing the issue.

Third, creative self-efficacy was found to ultimately have a significant effect on creativity (Hypothesis 2). This finding indicates that the higher the level of creative self-efficacy is, the more an employee can creatively address various service situations. Moreover, the better the employee perceives their own creative self-efficacy, the more they apply their creative ability to handling services and come up with creative ideas. That is, those who believe that they have the ability to come up with creative ideas set their own goals without being ordered to and come up with creative ways to handle unusual service situations.

Fourth, role conflict was found to have a negative effect on creativity (Hypothesis 3-1). That is, the higher the role conflict was perceived, the less creatively they were able to address service situations or apply their creative ability. Lastly, role ambiguity was

also found to negatively affect creativity (Hypothesis 3-2). These findings are consistent with what was presented in preceding studies. Role ambiguity undermines the behavior necessary in carrying out tasks and can be a factor that leads the individual to give up on creative thinking or efforts as preceding studies pointed out. The more the individual perceives role ambiguity, the more difficult they found to improve their in-flight tasks or apply their creativity.

Airline cabin crew undergo approximately three months of training at the time of initial recruitment before they are staffed on actual flights. Job training at airlines are very well organized to the extent that they are often benchmarked by other services firms. However, even though a lot of time and money are invested in training, unusual circumstances at the time of face-to-face services during flights cannot be prevented. Cabin crew members with high level of self-efficacy can creatively apply what they learned to the actual situation. As such, the human resources department needs to take interest in the self-efficacy and creativity of the cabin crew members. Since the level of self-efficacy can be changed, measures to improve it must be developed. Moreover, stress resulting from role conflict needs to be minimized while communication channels need to be further promoted to ensure that on a policy level the role conflict of cabin crew members can be reduced.

As competition in the airline industry become fierce in Korea, the airlines themselves need to develop ways to create maximum efficacy with a minimal number of employees. This makes role stress an inevitable topic to address for them. From the perspective of the airline carrier, it is necessary to take interest in the capability of their employees and create a flight environment in which they can make use of their ability and creativity. Guidelines on how employees can offer high quality services must be distributed and incorporated into work practices to reduce role stress.

This study is however limited in that it only verified the relation between two sub-categories of role stress. In the future, studies on the effect of work overload which is another sub-category of role stress, as well as studies on various lagging indicators of role stress in addition to self-efficacy and creativity, should also be carried out. Focusing on the finding that role conflict can have a positive impact on creative self-efficacy, more extensive studies on not just its negative functions but also its positive functions should also be

carried out in the future.

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