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IPA Analysis Study on Core Competencies of Airline Cabin Crew as Perceived by College Students Majoring in Aviation Service

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ABSTRACT

In the era of the Fourth Industrial Revolution, the economic and industrial landscape is rapidly changing, and the aviation industry is also undergoing swift transformations. The aviation industry relies heavily on human resources, requiring specialized and skilled individuals. Consequently, students majoring in Aviation Services must enhance the core competencies of in-flight cabin crew to grow into the talents needed by airlines. Accordingly, this study aims to understand the importance of competencies perceived by Aviation Services students and the level of execution learned in the curriculum, focusing on the competencies of in-flight cabin crew. Based on the research results, the goal is to develop an educational program to strengthen the competencies that Aviation Services students need as in-flight cabin crew members. The research also aims to use the findings as foundational data for the development and implementation of an educational curriculum. The study targeted 197 students majoring in Aviation Tourism at H University in Chungnam Province, and statistical analysis was conducted using SPSS 25.0. As a result of IPA on the importance and implementation level of each sub-factor of the core competencies of airline cabin crew, the keep up the good work area was found to be interpersonal relationships and Self-Directedness, and the possible overkill area did not appear. In addition, the low priority areas were concluded to be professional knowledge, international Sensibility, and problem solving, and the concentrate Improvement area was concluded to be Occupational Attitude.

1. Introduction

In the rapidly changing social environment of the 4th Industrial Revolution era, the labor market is contracting, and the issue of employment for college students has become not only an individual concern but also a national and societal problem due to economic downturns. According to recent

data released by the Korean Federation of Businessmen, the number of youth (15 to 29 years old) categorized as 'non-economically active population' is 4,668,000. This surpasses the number of employed individuals (4,035,000), and the non-economic activity rate (50.5%) exceeds the employment rate (47.4%). Furthermore, over the recent five years (2018-2022), while the employment rate remained in the 40% range, the non-economic activity rate consistently exceeded 50%. During the same period, the population categorized as non-economically active exceeded 4 million (Maeil Ilbo, 2023).

Particularly noteworthy is that around 30% of four-year university graduates are observed to be downwardly employed in occupations that do not require higher education qualifications. Downward employment refers to cases where the educational attainment of employed individuals exceeds the qualifications required for their jobs. The downward employment rate, representing the proportion of downwardly employed individuals among all employed individuals, has steadily increased since the 2000s, reflecting a growing imbalance in the labor market where the increase in college graduates surpasses the demand for highly educated positions.

An interpretation has emerged that South Korea's issue of educational oversupply, with a 70% college enrollment rate ranking it first among OECD countries, reflects a societal trend where a majority of high school graduates pursue higher education without a clear purpose (Chosun Ilbo, 2019). This phenomenon of educational oversupply arises from a societal preference for higher education without a distinct goal for university enrollment, especially after graduating from high school. Consequently, there is a growing emphasis on addressing the development issues of universities, which are considered the foundation for national progress. Calls for a shift from externally expanded universities and students to education that emphasizes qualitative fulfillment have been voiced across various sectors.

Since the early 2000s, the aviation industry, closely linked with the development of the tourism sector, has been experiencing rapid growth. Currently, there are two FSC(full-service carriers) - Korean Air and Asiana Airlines - and nine LCC(low-cost carriers) operating in the domestic aviation market, including Jeju Air, Jin Air, T'way Air, and Air Busan. The aviation industry places a high reliance on human resources, recognizing the importance of skilled and proficient individuals. Efforts are being made from various angles to foster and recruit exceptional talent. Particularly, the growth of the aviation industry has led to an increasing focus on the crucial human resource of flight attendants, and the establishment of aviation service-related departments for the specialized training of flight attendants continues to rise (Kim, 2019).

The preference for hiring students who have received education in aviation service-related departments by airlines is rooted in the expectation that these individuals possess a high understanding of the duties involved in the role of a new flight attendant and have a strong adaptability to service tasks (Yoon, 2012). The aviation industry places a significant emphasis on human resources providing services to customers, and the competencies of flight attendants directly serving customers on the front lines are crucial to a company's image and competitiveness. Therefore, the curriculum of aviation service-related departments is designed to enhance the competencies required for students aspiring to become flight attendants. This education aims to prepare students for the role of a flight attendant, focusing on strengthening the skills necessary for the profession.

Recent trends in education aim to move beyond students merely possessing knowledge and instead focus on cultivating their ability to apply knowledge in new contexts and perform practical tasks

with real-world relevance (Ministry of Education, 2015). The needs of students, who are the recipients of educational services at universities, are becoming more diverse alongside rapidly changing societal phenomena. To secure competitiveness, universities are required to provide differentiated educational services that satisfy the diverse needs of students (Bae, 2022). This objective is reflected in the movement to develop education programs centered around competencies. Several countries, including Germany, Canada, Singapore, Australia, and New Zealand, are designing national education curricula with a competency-based approach (Ministry of Education, 2015).

The curriculum of aviation service-related departments is designed with a focus on practical field-work, aiming to enhance students' adaptability and efficiency in their duties as flight attendants upon graduation. However, due to the rapid changes in the aviation industry, the role of flight attendants is evolving and transforming. Consequently, there is a demand for talent education that aligns with the competencies required for the job of flight attendants, which heavily relies on inter-personal services (Yoon & Cho, 2014).

The concept of 'competency' is gaining attention not only in the industry but also in school education as a new direction for educational programs. In university education, competency refers not only to the skills needed for employment but also to the ability to navigate various aspects of life. It encompasses in-depth and complex elements such as knowledge, skills, and attitudes (Choi, 2018). To ensure that university graduates can quickly adapt and enhance job efficiency upon entering the workforce, education programs should be designed with a focus on the evolving competencies required for flight attendants (Im & Lee, 2020). Furthermore, given the shift in educational paradigms, there is a current demand for a transition to student-centered curricula. It is necessary to assess the perceived importance and execution levels of key competencies as perceived by students at this juncture of educational transformation.

Therefore, in this study, we aim to understand the importance that aviation service major students place on the competencies of flight attendants and assess the level of Performance learned in the educational process. By doing so, we seek to comprehend the competencies perceived by students in the field of flight attendant work. Based on the research findings, we intend to develop an educational program to enhance the competencies that aviation service major students should possess as flight attendants. Additionally, we aim to use the results as foundational data for the development and operation of educational courses in this field.

2. Theoretical Background

2.1 Airline cabin crew core competencies

The concept of competency was first introduced in 1973 by the American psychologist David McClelland. Generally, it refers to the individual characteristics that enable outstanding performance in carrying out job responsibilities to achieve the values and vision pursued by an organization (Luica & Lepsinger, 1999). The concept of competency originally emerged in the fields of vocational education, training, and adult education, referring to the successful Performance of tasks or duties

that one seeks to master. However, in recent years, discussions about competency have been spreading into the realm of school education, particularly in English-speaking countries, including the United Kingdom (So, 2007). Competency can be defined as the abilities, skills, knowledge, attitudes, and experiences necessary for the successful performance of specific tasks. Core competencies, on the other hand, refer to superior abilities, skills, knowledge, and experiences that provide a competitive advantage over others in performing certain tasks (Kwon, 2010).

The aviation industry, heavily dependent on human resources and characterized by the nature of service employees simultaneously engaging in production and consumption activities, necessitates education focused on achieving a high level of expertise in human resources above all else (Lee & Lee, 2013). The role of a flight attendant involves responsibilities such as in-flight safety management, customer service, and, according to current aviation laws, performing safety tasks such as evacuating passengers in emergencies when aboard an aircraft (Aviation Portal).

The competencies required for airline cabin crew, as outlined by Yoon and Cho (2014), include interpersonal skills, situational coping abilities, communication skills, teamwork and collaboration, cognitive abilities, and cross-cultural understanding and foreign language proficiency. Additionally, Jo (2020) categorizes these competencies into interpersonal relationships, job capabilities, international awareness, professional knowledge, personal effectiveness, and managerial skills.

Recently, competency development has been recognized as an important issue for flight attendants and students majoring in aviation services. However, it is not clear whether the education programs in aviation service-related departments are operating courses aimed at enhancing the competencies required in the role of flight attendants. Therefore, this study aims to understand the importance and Performance levels that aviation service major students attribute to the core competencies of flight attendants. Additionally, based on previous research, the study has set interpersonal relationships, professional knowledge, self-directedness, vocational demeanor, international awareness, and problem-solving abilities as the components for analyzing the importance and Performance levels of the core competencies of flight attendants.

2.2 IPA (Importance-Performance Analysis)

Importance-Performance Analysis(IPA) was developed by Martilla and James (1977) and originated in the field of management. It is a method where individuals evaluate the importance and performance of attributes by self-assessment, comparing and analyzing the relative importance and performance of attributes (Hammitt et al., 1996). IPA utilizes a simple statistical technique that verifies the difference between importance and performance by using the mean values of the attributes under consideration. It has been widely utilized in various fields such as marketing, banking, education, sports, and psychology (Taplin, 2012; Yavas & Shemwell, 2001).

IPA (Importance-Performance Analysis), as presented by Martilla and James (1977), is a method that utilizes importance and performance as axes to create a four-quadrant analysis. In the analysis, the 1st quadrant ‘keep up the good work’ represents attributes where both importance and performance are high, the 2nd quadrant ‘concentrate Improvement’ indicates attributes with high importance but low performance, the 3rd quadrant ‘low priority’ encompasses attributes with both low importance

and low performance, and the 4th quadrant 'possible overkill' includes attributes with low importance but high performance. This method is employed to identify improvement points based on the distribution of attributes. IPA is valuable for simultaneously comparing and analyzing the importance and performance of attributes, allowing for the identification of areas that need to be maintained and areas that require improvement.

3. Materials and Methods

3.1 Survey questions

This study aims to compare and analyze the perceived importance and proficiency of essential competencies of flight attendants as perceived by university students majoring in aviation services. In prior research, Yoon and Jo (2014) identified competencies required for airline cabin crew, including interpersonal skills, crisis management abilities, communication, teamwork and cooperation, cognitive abilities, cross-cultural understanding, and foreign language proficiency. Additionally, Cho (2020) categorized these competencies into interpersonal relationships, job skills, international sensitivity, specialized knowledge, personal effectiveness, and managerial abilities.

In this study, based on prior research, the essential competencies of flight attendants were categorized into interpersonal relationships, specialized knowledge, self-directedness, professional demeanor, international sensitivity, and problem-solving abilities. The survey structure included four nominal scale items related to the general characteristics of the respondents. Additionally, interpersonal relationships consisted of five items, while specialized knowledge, self-directedness, and professional demeanor each comprised four items. International sensitivity and problem-solving abilities were represented by three items each. In total, the survey consisted of 23 items, measured on a 5-point Likert scale.

3.2 Participants and analysis method

The survey participants for this study were students currently enrolled in the Aviation and Tourism Department at University H, located in Chungnam Province, South Korea. Specifically, students from the 1st to 4th grades in the 2023 academic year's second semester were the target population. Data collection for this study took place over a period of seven days, from October 16 to October 22, 2023, utilizing an online survey. During this period, a total of 197 completed questionnaires were collected from participants who understood the research purpose and provided their consent.

Data processing for this study involved utilizing the statistical program SPSS 25.0 to analyze the collected questionnaire responses. Firstly, to understand the general characteristics of the study participants, a frequency analysis was conducted. To validate the reliability and validity of the measurement tool, exploratory factor analysis and Cronbach's α coefficient were calculated. Subsequently, to compare the importance and proficiency of flight attendant core competencies, a paired-sample t-test was performed. The results of importance, proficiency, and the gap for flight attendant core competencies were analyzed using an Importance-Performance Analysis (IPA) grid.

4. Results

4.1 General characteristics of survey participants

The results of the frequency analysis conducted to understand the general characteristics of the study participants are presented in Table 1. The analysis revealed that, in terms of gender, there were 172 females (87.3%) and 25 males (12.7%). Regarding academic year, the distribution was as follows: 1st year, 50 participants (25.4%); 2nd year, 52 participants (26.4%); 3rd year, 47 participants (23.9%); and 4th year, 48 participants (24.4%). The reasons for choosing the major were as follows: aptitude and interest were cited by 135 individuals (68.5%), employment by 57 individuals (28.9%), and academic performance by 2 individuals (1.0%). Regarding career plans, aspirations were reported as follows: airline cabin crew by 186 individuals (94.4%), other airline-related positions by 4 individuals (2.0%), general corporations by 3 individuals (1.5%), and transfer to another institution or graduate school by 2 individuals (1.0%).

Table 1. General characteristics of survey participants

Category		Frequency(N)	Percentage(%)
Gender	Female	172	87.3
	Male	25	12.7
Academic year	1st Year	50	25.4
	2nd Year	52	26.4
	3rd Year	47	23.9
	4th Year	48	24.4
Motivation for major selection	Grades	2	1.0
	Aptitude and interest	135	68.5
	Employment	57	28.9
	Other	3	1.5
Career plans	Cabin crew	186	94.4
	Aviation-related job	4	2.0
	General company	3	1.5
	Transfer or graduate school	2	1.0
	Other	2	1.0
Total		197	100.0

4.2 Validity and reliability verification

4.2.1 Validity and reliability verification for core competency importance

The results of the validation and reliability verification for the importance of core competencies are presented in Table 2. The validation process, including the Kaiser-Meyer-Olkin (KMO) measure and Bartlett's sphericity test, indicated statistical significance with a KMO of 0.913 and Bartlett's

test statistic of 3449.310 (df=253, p=0.000). The analysis revealed six factors, explaining a total variance of 76.953%. Each sub-factor was labeled as follows: Factor 1 (15.455%) - Interpersonal Relations, Factor 2 (13.567%) - Professional Knowledge, Factor 3 (13.347%) - Occupational Attitude, Factor 4 (13.091%) - Self-Directedness, Factor 5 (11.185%) - Problem Solving, and Factor 6 (10.308%) - International Sensibility. The factor loading for all six factors exceeded 0.40, confirming the validity of the conceptual structure, and the reliability was confirmed with a Cronbach's alpha exceeding 0.60.

Table 2. Validation and reliability verification for core competency importance

Category	Items	Factor loading	Eigenvalue	Explained variance(%)	Cronbach's alpha
Interpersonal relationships	1. Listen to and respect the opinions of others.	.854	3.555	15.455	.868
	5. Show interest in understanding the situations and feelings of others.	.767			
	3. Do not only assert one's own opinions during mutual exchanges of opinions.	.698			
	4. Collaborates with organizational members to effectively accomplish tasks.	.658			
	2. Can confirm whether the other person understands my opinion.	.648			
Professional knowledge	8. I have in-depth information on my area of interest.	.826	3.120	13.567	.877
	7. I have the ability to explain my professional knowledge to others effectively.	.795			
	9. I can strategically apply my professional knowledge to solve problems in specific situations.	.666			
	6. I do my best to study related subjects in my major to accumulate specialized knowledge during school classes.	.659			
Occupational attitude	14. I discard vague thoughts about the profession and investigate what practical skills are needed for the actual job.	.804	3.070	13.347	.883
	16. I have thought about the competencies needed to pursue the job I desire.	.687			
	15. I accumulate experience and skills in the profession through internship programs or other relevant opportunities in the field.	.672			
	17. I identify the skills required for the given job and work on developing them.	.671			
Self-directedness	11. I plan a schedule to achieve my learning goals.	.787	3.011	13.091	.896
	10. I can set my own learning goals.	.753			
	13. I periodically check and modify my learning goals to achieve them.	.671			
	12. I can self-motivate.	.654			
Problem solving	23. I anticipate and choose an appropriate solution, considering the expected outcomes after applying the solution.	.790	2.573	11.185	.906
	22. I extract relevant information during the problem-solving process.	.722			
	21. I can analyze solutions to a given problem from multiple perspectives.	.645			
International sensibility	18. I can speak languages from different countries.	.787	2.371	10.308	.800
	19. I am learning or have learned the language of a foreign country for smooth communication with foreigners.	.754			
	20. I keep abreast of global trends in my field of interest and regularly check for updates.	.642			
	Total variance explained : 76.953% KMO=.913, Bartlett's test x^2=3449.310 (df=253, p=.000)				

4.2.2 Validity and reliability verification for core competency performance

The results of the validity and reliability verification for the Performance of core competencies are presented in Table 3. The validation results, with a KMO of 0.904 and a significant Bartlett's sphericity test at 3842.241 (df=253, p=0.000), indicate meaningfulness. The analysis revealed six factors, explaining a total variance of 78.947%. The factors were named as follows: Factor 1 (16.126%) - Interpersonal Relationships, Factor 2 (14.878%) - Occupational Attitude, Factor 3 (13.661%) - Self-Directedness, Factor 4 (11.988%) - Professional Knowledge, Factor 5 (11.240%) - Problem-Solving, and Factor 6 (11.054%) - International Sensibility. The factor loading for each of the six factors was above 0.40, confirming the construct validity, and the reliability was verified with a Cronbach's α coefficient exceeding 0.60.

Table 3. Validity and reliability verification for core competency performance

Category	Items	Factor loading	Eigenvalue	Explained variance(%)	Cronbach's alpha
Interpersonal relationships	5. Show interest in understanding the situations and feelings of others.	.867	3.709	16.126	.879
	3. Do not only assert one's own opinions during mutual exchanges of opinions.	.798			
	1. Listen to and respect the opinions of others.	.763			
	2. Can confirm whether the other person understands my opinion.	.709			
	4. Collaborates with organizational members to effectively accomplish tasks.	.695			
Occupational attitude	16. I have thought about the competencies needed to pursue the job I desire.	.815	3.422	14.878	.896
	14. I discard vague thoughts about the profession and investigate what practical skills are needed for the actual job.	.752			
	17. I identify the skills required for the given job and work on developing them.	.742			
	15. I accumulate experience and skills in the profession through internship programs or other relevant opportunities in the field.	.713			
Self-directedness	11. I plan a schedule to achieve my learning goals.	.813	3.142	13.661	.902
	10. I can set my own learning goals.	.797			
	13. I periodically check and modify my learning goals to achieve them.	.744			
	12. I can self-motivate.	.675			
Professional knowledge	8. I have in-depth information on my area of interest.	.786	2.757	11.988	.891
	6. I do my best to study related subjects in my major to accumulate specialized knowledge during school classes.	.711			
	9. I can strategically apply my professional knowledge to solve problems in specific situations.	.665			
	7. I have the ability to explain my professional knowledge to others effectively.	.652			
Problem solving	22. I extract relevant information during the problem-solving process.	.778	2.585	11.240	.902
	23. I anticipate and choose an appropriate solution, considering the expected outcomes after applying the solution.	.771			
	21. I can analyze solutions to a given problem from multiple perspectives.	.704			
International sensibility	18. I can speak languages from different countries.	.806	2.542	11.054	.867
	19. I am learning or have learned the language of a foreign country for smooth communication with foreigners.	.732			
	20. I keep abreast of global trends in my field of interest and regularly check for updates.	.681			
Total variance explained : 78.947% KMO=.904, Bartlett's test χ^2=3842.241 (df=253, p=.000)					

4.3 Discrepancy analysis of importance and performance for core competencies of airline cabin crew

The analysis results of the importance, performance, and gap (Gap) for the core competencies of airline cabin crew are presented in Table 4. Overall, the importance of core competencies averaged 4.56 points, while the performance averaged 4.46 points. Examining the importance of sub-factors within core competencies, they are ranked as follows: Interpersonal Relations (M=4.74), Occupational Attitude (M=4.63), Self-Directedness (M=4.58), Problem Solving (M=4.51), Professional Knowledge (M=4.41), and International Sensibility (M=4.37).

Examining the importance of sub-factors, the rankings are as follows: Interpersonal Relationships-1 (M=4.87), Interpersonal Relationships-5 (M=4.75), Interpersonal Relationships-4 (M=4.74), Occupational Attitude-16 (M=4.70), Interpersonal Relationships-3 (M=4.69), Self-Directedness-12 (M=4.64), Occupational Attitude-17 (M=4.64), Interpersonal Relationships-2 (M=4.63), Occupational Attitude-14 (M=4.60), Professional Knowledge-6 (M=4.59), Self-Directedness-11 (M=4.58), Occupational Attitude-15 (M=4.57), Problem Solving-23 (M=4.57), Self-Directedness-13 (M=4.56), Problem Solving-22 (M=4.56), Self-Directedness-10 (M=4.53), Professional Knowledge-9 (M=4.51), International Sensibility-19 (M=4.51), International Sensibility-20 (M=4.39), Problem Solving-21 (M=4.39), Professional Knowledge-7 (M=4.32), Professional Knowledge-8 (M=4.24), International Sensibility-18 (M=4.21). Also, examining the performance of sub-factors for core competencies, the rankings are as follows: Interpersonal Relationships (M=4.75), Self-Directedness (M=4.49), Problem Solving (M=4.45), Occupational Attitude (M=4.44), Professional Knowledge (M=4.34), Global Awareness (M=4.15).

Examining the performance of sub-factors, the rankings are as follows: Interpersonal Relationships-1 (M=4.82), Interpersonal Relationships-5 (M=4.78), Interpersonal Relationships-4 (M=4.77), Interpersonal Relationships-3 (M=4.71), Interpersonal Relationships-2 (M=4.65), Professional Knowledge-6 (M=4.59), Occupational Attitude-16 (M=4.58), Self-Directedness-12 (M=4.53), Self-Directedness-10 (M=4.51), Problem Solving-23 (M=4.51), Self-Directedness-11 (M=4.50), Occupational Attitude-17 (M=4.48), Problem Solving-22 (M=4.48), Occupational Attitude-14 (M=4.45), Self-Directedness-13 (M=4.43), Problem Solving-21 (M=4.36), Professional Knowledge-9 (M=4.32), International Sensibility-19 (M=4.29), International Sensibility-20 (M=4.29), Occupational Attitude-15 (M=4.24), Professional Knowledge-7 (M=4.23), Professional Knowledge-8 (M=4.22), International Sensibility-18 (M=3.87).

Overall, there is a statistically significant difference in the importance - performance gap for overall core competencies and sub-factors such as Self-Directedness, Professionalism, and International Sensibility ($p<.05$). These areas show that importance ratings are relatively higher compared to performance ratings. Additionally, for specific sub-items, there is a statistically significant difference in the importance-performance gap for items such as Applying professional knowledge strategically to solve problems, Being able to motivate oneself, Checking and revising goals periodically to achieve them, Researching what practical skills are needed for the desired profession, Accumulating career experience and skills related to the profession through internships, etc., Thinking about the competencies needed for the desired profession, Understanding the necessary skills for the given

job and developing them, Being able to communicate in languages other than your native language, and Learning or having learned a foreign language to communicate effectively with foreigners ($p<.05$). In these cases, the importance is relatively higher compared to performance.

Table 4. Discrepancy analysis of importance - Performance for core competencies of airline cabin crew

Category		Importance		Performance		Gap (Importance-performance)		t-value	p
		M	SD	M	SD	M	SD		
Interpersonal relationships	1.	4.87	.395	4.82	.425	.05	.460	1.548	.123
	2.	4.63	.525	4.65	.565	-.02	.557	-.639	.523
	3.	4.69	.537	4.71	.497	-.02	.548	-.650	.516
	4.	4.74	.494	4.77	.481	-.03	.499	-.713	.476
	5.	4.75	.509	4.78	.475	-.03	.468	-.762	.447
	Total	4.74	.400	4.75	.403	-.01	.350	-.407	.684
Professional knowledge	6.	4.59	.699	4.59	.676	.00	.666	-.107	.915
	7.	4.32	.772	4.23	.861	.09	.930	1.302	.194
	8.	4.24	.742	4.22	.840	.02	.798	.268	.789
	9	4.51	.747	4.32	.773	.19	.761	3.372**	.001
	Total	4.41	.632	4.34	.686	.07	.622	1.576	.117
Self-directedness	10	4.53	.643	4.51	.690	.02	.703	.507	.613
	11	4.58	.630	4.50	.726	.08	.642	1.777	.077
	12	4.64	.643	4.53	.682	.11	.640	2.560*	.011
	13	4.56	.574	4.43	.678	.13	.600	3.087**	.002
	Total	4.58	.544	4.49	.610	.09	.502	2.486*	.014
Occupational attitude	14	4.60	.652	4.45	.745	.15	.717	2.882**	.004
	15	4.57	.671	4.24	.974	.33	.897	5.165***	.000
	16	4.70	.559	4.58	.638	.12	.624	2.626**	.009
	17	4.64	.576	4.48	.739	.16	.645	3.647***	.000
	Total	4.63	.531	4.44	.684	.19	.566	4.722***	.000
International sensibility	18	4.21	.975	3.87	.968	.34	.989	4.752***	.000
	19	4.51	.682	4.29	.785	.22	.689	4.343***	.000
	20	4.39	.745	4.29	.817	.10	.803	1.597	.112
	Total	4.37	.685	4.15	.765	.22	.666	4.490***	.000
Problem solving	21	4.39	.758	4.36	.754	.03	.772	.461	.645
	22	4.56	.600	4.48	.690	.08	.699	1.528	.128
	23	4.57	.701	4.51	.675	.06	.693	1.336	.183
	Total	4.51	.632	4.45	.646	.06	.610	1.286	.200
Total		4.56	.449	4.46	.497	.10	.322	4.083***	.000

*p<.05, **p<.01, **p<.001

4.4 IPA (Importance-Performance Analysis) for core competencies of airline cabin crew

In this study, we conducted an Importance-Performance Analysis (IPA) grid analysis to understand the extent to which the importance and performance of each characteristic of core competencies

of airline cabin crew are aligned. The IPA grid was constructed using the average values of importance and performance, with the X-axis representing performance and the Y-axis representing importance. The intersection points on each axis were set using the mean values for the respective variables. Each quadrant was categorized as 'keep up the good work' (Importance ▲, Performance ▲), 'possible overkill' (Importance ▼, Performance ▲), 'low priority'(Importance ▼, Performance ▼), and 'concentrate Improvement' (Importance ▲, Performance ▼).

The IPA analysis results for the importance-performance of each sub-factor of core competencies are shown in Figure 1. The 'keep up the good work' quadrant, where both importance and performance are high, is represented by Interpersonal Relationships and Self-Directedness, indicating positive outcomes that should be maintained. The 'possible overkill' quadrant, where performance is high but importance is low, did not appear in the results. The 'low priority' quadrant, where both importance and performance are low, is represented by Professional Knowledge, International Sensibility, and Problem Solving, suggesting areas that need gradual improvement. The 'concentrate Improvement' quadrant, where importance is high but performance is low, is represented by Job Competence, indicating areas that need concentrated improvement.

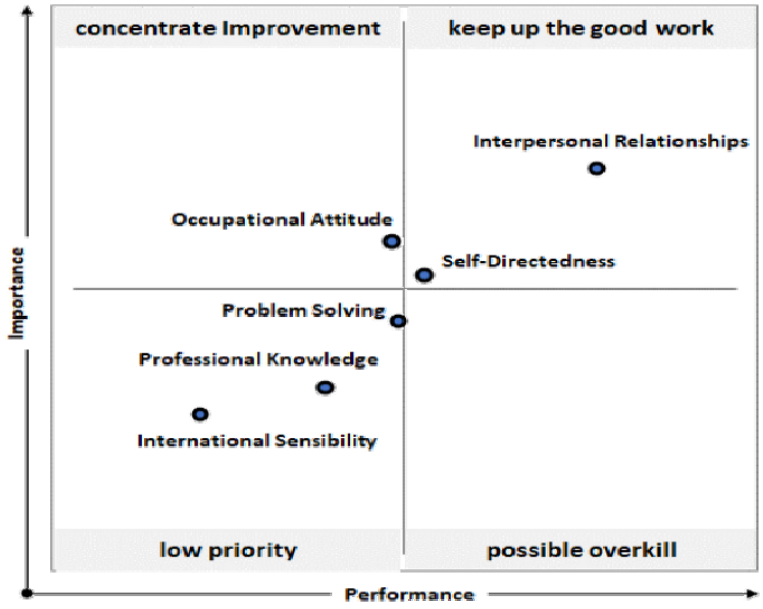

Fig. 1. IPA grid analysis for sub-factors of core competencies of airline cabin crew: Importance-performance

The IPA analysis results for the importance-performance of sub-factors in core competencies are shown in Figure 2. The area with both high importance and high performance, indicating a need for 'keep up the good work' includes items such as Listen to and respect others' opinions, Confirm whether others understand my opinions, Do not insist only on my opinions when exchanging opinions, Effectively achieve tasks by collaborating with organization members, Show interest in

understanding the situations and feelings of others, Make the best effort to study related subjects to accumulate expertise during school classes, Plan schedules for achieving learning goals, Can self-motivate, Have thought about the competencies needed to have the job I want, Understand and develop the abilities required for the given job, Extract appropriate information in the problem-solving process, Select and apply suitable solutions after applying solutions, indicating good performance, and thus, should be maintained continuously.

In the 'possible overkill area, where the performance is high but the importance is low, the item 'Can set learning goals for oneself.' is identified. Efforts should be made to avoid unnecessary input in this aspect. In the 'Low Priority' zone where both importance and performance are low, aspects such as Having the ability to explain one's professional knowledge to other, Acquiring in-depth materials on one's area of interest, Strategically applying professional knowledge to problem situations, Being able to communicate in languages of other countries, Learning or having learned the language of another country for smooth communication with foreigners, Keeping track of global trends in one's field of interest, and Analyzing solutions to given problems from various perspectives are highlighted. These areas require gradual improvement.

In the 'concentrate Improvement' zone where importance is high but performance is low, aspects such as 'Checking and adjusting periodically for the achievement of learning goals,' 'Discarding vague thoughts about a profession and investigating the actual skills and abilities required for that profession,' and 'Accumulating experience and skills for that profession through internship programs and related fields' are highlighted. These areas need focused improvement.

Fig. 2. IPA grid analysis of importance-performance for sub-factors in core competencies of airline cabin crew

5. Discussion and Conclusions

This study aimed to compare and analyze the importance and performance of core competencies of flight attendants among aviation service major university students using the Importance-Performance Analysis (IPA) method. Based on the results, the study aimed to develop an educational program to enhance the competencies required for flight attendants among aviation service major university students and provide useful foundational data for developing and implementing an education curriculum.

The identified results and practical implications from the IPA of the core competencies of flight attendants as perceived by aviation service major university students are as follows:

First, the importance and performance factors related to the core competencies of flight attendants were extracted as interpersonal relationships, occupational attitude, self-directedness, professional knowledge, problem solving, and international sensibility. The validity and reliability of the measurement items for both importance and satisfaction were verified.

Second, the results of the importance, performance, and gap analysis of core competencies for flight attendants among aviation service major university students revealed that the importance rankings for sub-factors were as follows: interpersonal relationships (M=4.74), occupational attitude (M=4.63), self-directedness (M=4.58), problem solving (M=4.51), professional knowledge (M=4.41), and international sensibility (M=4.37). The performance rankings were as follows: interpersonal relationships (M=4.75), self-directedness (M=4.49), problem-solving (M=4.45), occupational attitude (M=4.44), professional knowledge (M=4.34), and international sensibility (M=4.15).

Overall, there was a statistically significant difference in the importance-performance gap for self-directedness, occupational attitude, and international sensibility at both the core competency and sub-factor levels ($p<.05$). The importance was relatively higher than the performance, indicating areas where improvement is needed. Specifically, sub-factors such as Applying specialized knowledge strategically to solve problems, Being self-motivated, Regularly checking and adjusting goals for goal achievement, Discarding vague thoughts about the profession and investigating the practical skills needed for the actual job, Accumulating experience and abilities for the profession through internships in related fields, Thinking about the skills needed for the desired profession, Understanding and developing the abilities required for the given job, Being able to communicate in languages of other countries, and Learning or having learned the language of the country for smooth communication with foreigners showed statistically significant differences in importance-performance gaps ($p<.05$), with importance being relatively higher than performance.

Aviation service major university students recognize the importance of understanding the job of an airline cabin crew and acquiring the competencies demanded by companies. They are also aware of the significance of language skills, especially when applying for a position as a flight attendant and express their intention to set learning goals and make efforts in this regard. However, in this context, importance was derived with higher significance compared to execution. To strengthen this aspect in the curriculum, it is essential to implement additional extracurricular programs beyond the regular courses to address the identified needs.

The third conclusion is based on the IPA results for the sub-factors of core competencies for

flight attendants. The ‘keep up the good work’ area, where both importance and performance are high, is represented by interpersonal relationships and self-directedness, indicating a consistently positive outcome that should be maintained. The ‘possible overkill’ area did not appear. Additionally, the ‘low priority’ area, where both importance and performance are low, includes factors such as professional knowledge, international sensibility, and problem-solving,' suggesting a need for gradual improvement. The ‘concentrate Improvement’ area, where importance is high but performance is low, is represented by occupational attitude,' indicating a need for focused improvement in this aspect.

The keep up the good work’ category emphasizes the importance of qualities such as listening, respect, and collaboration in interpersonal relationships, suggesting that these aspects should be continuously learned throughout the educational process. This finding aligns with the understanding that the role of flight attendants involves providing safe and comfortable travel to passengers on board, highlighting the significance of positive interpersonal relationships. Moreover, the competency of self-directed learning, where individuals can set and execute goals, is consistently demanded from students in the aviation service major.

On the other hand, there is a need for students to accurately understand the job of a flight attendant and the practical skills required in that occupation. It is essential to provide students with diverse information during the educational process. School portal systems or relevant departments should offer students various career and employment information. Additionally, implementing internship programs to enhance practical skills is crucial. These measures would contribute to better preparing students for the actual demands of the profession.

Based on these results, developing an educational program to enhance the competencies required for flight attendants among students majoring in aviation services is crucial. This not only contributes to improving the quality of education through systematic strategies but also serves as foundational data for enhancing the competitiveness of the university.

It’s important to note that this study has limitations, as it focused on students majoring in aviation tourism at H University in Chungnam. Generalizing the research findings may be restricted to this specific group. Further research could compare the perceptions of flight attendants working in airlines with those of students majoring in aviation services. This comparative analysis could provide more concrete and effective suggestions for enhancing core competencies.

However, the current study’s results can be valuable for universities in formulating strategies to improve the quality of education, thereby enhancing competitiveness in the evolving competitive landscape. These findings serve as foundational information for universities to fulfill their educational purpose of nurturing talents needed for social development.

Conflicts of Interest

The authors declare no conflict of interest.

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