Moderated mediating effect of appearance satisfaction on the relationship between academic major satisfaction, self-esteem, and employment stress by airline service major students

*Introduction.* Airline service major students choose their academic major to be flight attendants after graduating from secondary education. They are therefore likely to be satisfied with the airline service major, as students can learn qualified airline service-related knowledge and skills. However, they also have higher employment stress than students majoring in other majors. This is because physical appearance is an important aspect of the job interview. It is therefore necessary to study academic major satisfaction, self-esteem, and appearance satisfaction to reduce employment stress among airline service major students.

*Methods.* The participants in this study were 339 airline service major students from four universities. Data were collected from freshmen (31%), sophomore (14.7%), junior (28%), and senior (26.3%) students majoring in airline service. This study used SPSS Win.21.0 statistics programs to conduct the frequency test, reliability and correlation tests. For the moderated mediation analysis, ‘Model 14 of PROCESS macro ver.4.0’ was used as the statistical method.

*Results.* First, employment stress had negative correlations with both academic major satisfaction ($r = -.326$, $p<.01$) and self-esteem ($r = -.401$, $p<.01$), while academic major satisfaction had a positive correlation with self-esteem ($r = .433$, $p < .01$). Second, appearance satisfaction was found to have conditional indirect effects on the relationship between academic major satisfaction and employment stress through self-esteem that were significant ($p < .01$) when the appearance satisfaction values were 4.0 ($-.2218$ to $-.0776$) and 5.0 ($-.3775$ to $-.1505$), respectively. Therefore, the moderated mediation effect of resilience was verified.

*Conclusions.* This study found that airline service major students with high appearance satisfaction have decreased employment stress. The results of this study indicate that students’ appearance satisfaction should be fostered and reinforced with the goal of increasing improving airline service major students’ self-esteem and decreasing their employment stress.

*Keywords:* academic major satisfaction, self-esteem, appearance satisfaction, employment stress, airline service major

For Reference:
United Nations (UN) stated equitable quality education for all students in the world [1]. According to the European Expert Network on Economics of Education (EENEE) analytical report [2], one of the significant factors affecting quality of school life perceived by students is encouraging and enhancing students' personal development through learning (i.e. academic major satisfaction). Academic major satisfaction is formed in the process by which students evaluate their current academic major compared to their own career or employment standards. In this evaluation process, the more students match the criteria for their future career or employment, the more satisfied they are with their academic major [3]. Academic major satisfaction is important because it positively affects college life adaptation and career (employment) after graduation [4]. Many students select the airline service major to be a flight attendant after graduation. However, employment stress is relatively higher among airline service major students than it is among students in other majors, which is attributed to the high employment competition (an employment rate of 1 out of 100) [5].

Employment stress accounts for a large proportion among the typical stresses (schoolwork, family relationships, interpersonal relationships, career-related problems, etc.) experienced by college students. Students are more likely to experience stress during the college years, as they fear that they will not be able to get a job for which they have prepared [6]. If students do not properly adapt to employment stress, they may experience anxiety and tension due to the physical and emotional imbalance derived from stress. Therefore, to mitigate the maladaptive effect of employment stress, it is necessary to identify variables that can buffer it [7].

Previous studies have shown that airline service major students with high academic major satisfaction engaged less in employment anxiety [5], and that higher academic major satisfaction was associated with less employment stress [7]. In the educational context, airline service major students learn various types of knowledges and practical skills in which airline flight attendants must be qualified. This means that airline major students tend to be more prepared to become a flight attendant, thus resulting in less employment stress. Based on the above studies and their applicability to practical matters, it is necessary to continue exploring the link between academic major satisfaction and employment stress.

Thus, in this study, self-esteem was applied as a mediating variable whereas appearance satisfaction was used as the moderating variable to elucidate the elaborate mechanism between academic major satisfaction and employment stress.

Self-esteem is the degree to which one respects and values oneself; it is synonymous with self-worth, and it has been treated as an increasingly critical variable in the fields of student education, student development, and mental health [8]. However, few studies have verified the mediating effect of self-esteem between students’ academic major satisfaction and employment stress. Lee [9] found that psychological factors such as self-confidence or self-efficacy were increased with academic major satisfaction, which eventually reduced employment stress. In other words, positive psychological factors serve as mediators between students’ academic major satisfaction and employment stress. It can therefore be inferred that self-esteem is a positive psychological variable that links the two variables in this study. Appearance satisfaction is the result of a subjective judgment wherein one
compares their perceived appearance with those of others, and it can be considered as a feeling or attitude that an individual has toward his or her body or face [10]. Airline service major students who aim to obtain a job through an airline interview recognize the importance of appearance for employment in this area, and if they are not satisfied with their appearance, their self-esteem will decrease and their employment anxiety and stress will increase. As such, previous studies have tended to recognize appearance satisfaction as a preceding variable on self-esteem and employment stress, but they have not examined it as moderating the effect on two variables. However, appearance satisfaction is a more fundamental belief in airline service major students, and that it moderates the degree or direction of the causal relationship between the academic major-related variable and the career decision variable [11]. Thus, students with high satisfaction with their appearance can reinforce the effect of less employment stress that results from their high self-esteem.

The purpose of the current study is to identify the moderated mediation effect of appearance satisfaction in the impact of academic major satisfaction on employment stress through self-esteem. Given the results of the studies referenced above, this study is expected to provide a model wherein appearance satisfaction can be used to reduce airline service major students’ employment stress.

THEORETICAL BACKGROUND

1. Relationship between academic major satisfaction and employment stress

Academic major satisfaction can be defined as ‘a student’s overall satisfaction with their field of study, including enjoyment of classes, experiences with faculty, advisors, and peers, and any other interactions related to their academic department’ [12]. Moreover, satisfaction with one’s academic major is the result of evaluating and judging the academic major department to which one belongs. The degree to which one’s chosen academic major matches one’s aptitude and interest affects their degree of satisfaction with their academic major while attending school. Satisfaction with one’s academic major occurs when one’s major matches the standards they pursue for their future career or job [6].

Employment stress means ‘unemployment stress syndrome’, which refers to the mental stress or physical pain caused by repeated employment failure or prolonged unemployment [13]. During college, students go through the process of choosing and preparing for their future careers or jobs. After COVID-19, the rapidly changing social environment, uncertain future, and fierce competition has caused employment stress among college students. As such, it has become unavoidable for college students to experience job-seeking stress in the process of preparing for employment. Employment stress is not felt only by senior students expecting graduation, but that freshmen have even come to experience career-related worries and pressure for employment [14].

Previous studies have indicated that academic major satisfaction is one of the important variables reducing employment stress. The negative relationship between college students’ academic major satisfaction and employment stress [15]. Han [16] also found that tourism students with high academic major satisfaction had less employment stress. In other words, higher academic major satisfaction was associated with less employment stress. Nursing students’ academic major satisfaction was negatively correlated with employment stress [17]. Thus, it can be assumed that airline service student’s academic major satisfaction will relieve their employment stress in this study.
2. The mediating effect of self-esteem

Self-esteem is ‘one’s positive or negative attitude toward oneself and one’s evaluation of one’s own thoughts and feelings overall in relation to oneself’ [18 p. 1; 19]. This means that it differs depending on how individuals make decisions when they face certain situations in their daily lives. If someone has low self-esteem, they will feel inferiority, depression, helplessness, etc., and they will view everything in life negatively [20]. Meanwhile, if one has high self-esteem in school life, they will respect themselves and believe themselves to be worthy [21].

The relevant variables prejudicing self-esteem are various types of satisfaction [22], and one of the key indicators for students’ self-esteem is academic major satisfaction [20]. Many studies have shown that academic major satisfaction and self-esteem had a significant positive correlation, while high academic major satisfaction increased self-esteem [23; 24]. It was also found that nursing students’ self-esteem was increased by academic major satisfaction [25]. Kwak [26] found a positive relationship between academic major satisfaction and students’ self-esteem majoring in optometry and optic science. Yu [27] argued that variables that protect individuals from stress are called stress buffer resources; self-esteem is one such resource. Self-esteem is an internal resource that plays an important role in buffering the negative effects of stress in stressful situations [28]. The negative correlation between self-esteem and employment stress among nursing college students was verified [29]. In another study, airline service major student’s low self-esteem increased employment stress [13].

Although there have been few studies showing that self-esteem mediates students’ academic major satisfaction and employment stress, Lee [9] verified that positive psychosocial attitude and emotional state such as self-efficacy can mediate the effect of academic major stress on employment stress. In other words, as students come to be satisfied with their academic major, students grow more confident and consider themselves to be more worthy, which can eventually become an important stress-buffer factor for employment.

Based on these prior results, it can be predicted in this study that academic major satisfaction may decrease employment stress through self-esteem in addition to the direct impact between academic major satisfaction and employment stress.

3. Moderating effect of appearance satisfaction

Appearance satisfaction can be defined as a positive perception of one's own body image that is expressed externally and which is recognized by other people [7]. Among college students, appearance satisfaction has become an important issue for employment. This is because students believe that attractive appearance in job interviews has an impact on getting a job. According to the results of a study on job interviewers in the companies, the majority of interviewers thought that the external image of an applicant during an interview had an impact on employment evaluation [30]. In a survey on ‘reason for having or wanting to have plastic (cosmetic) surgery’ targeting college freshmen, 12.7% (41 out of 323) students responded “for a job,” thus indicating that appearance affects employment competitiveness [31]. As the importance of appearance for employment becomes increasingly emphasized, it is obvious that students' satisfaction with their appearance is not only closely related to their self-esteem, but that it also affects their stress about employment. Thus, in an educational context, appearance satisfaction has attracted attention as one of the key factors for effectively increasing self-esteem [32] and alleviating employment stress. The higher the appearance satisfaction of students, the better they are able to increase or improve their self-esteem [6], and the lower their employment stress [33].
Despite the academic attention that has already been given to student’s appearance satisfaction for seeking a job or employment, there have been few studies verifying the moderating effect of appearance satisfaction in the relationship between self-esteem and employment stress. Thus, based on the literature review above, this study aims to verify the moderating effect of appearance satisfaction between self-esteem and employment stress. It also aims to identify whether appearance satisfaction moderates the mediating effects of self-esteem in the link between academic major satisfaction and employment stress.

**RESEARCH METHOD**

1. **Research model**
   The research model, which is shown in Figure 1, was established to verify the moderated mediating effect (conditional indirect effect) wherein appearance satisfaction moderates the path of academic major satisfaction → self-esteem → employment stress.

   ![Conceptualized research model](image)

   **Figure 1** Conceptualized research model

2. **Data Collection and Samples**
   The respondents were airline service major students that were freshmen (31%), sophomores (14.7%), juniors (28%), and seniors (26.3%) in South Korean universities. Online survey questionnaires were used to collect data from students at three universities between May 31st and June 15th, 2023 in South Korea. After obtaining study consent, 339 students majoring in airline service responded to this study in total. Following data collection, this study conducted frequency analysis for demographic information. The ratio of female to male students was 90% to 10%, respectively, which is similar to the actual proportions of female and male flight attendants in South Korea [34].

3. **Research tools**
   3.1. **Academic major satisfaction**
       The measurement of academic major satisfaction adapted by Hong [35] and Park & Park [36] includes popularity, high opportunity for employment, matching aptitude, appropriate curriculum, and general satisfaction with academic major. The scale has a total of six items that are all rated along 5-point Likert-type scales, ranging from 1 point for ‘strongly disagree’ to 5 points for ‘strongly agree’. The reliability [Cronbach’s α] of academic major satisfaction was .907.

   3.2. **Self-esteem**
       Recent studies have used a scale of self-esteem that is self-rated by airline service major students [36; 37]. This study derived five positive self-esteem items based on the studies listed above. In this study, a single dimension with five questions was adopted from Jeon’s
study [47]. The questions were responded along 5-point Likert scales ranging from 1 (strongly disagree) to 5 (Strongly agree). Higher scores indicated higher levels of self-esteem. The reliability of self-esteem in this study according to Cronbach’s α was .877.

3.3. Appearance satisfaction

In this study, a single dimension of appearance satisfaction adopted from Back & Kim’s study [11] was used, which includes physical attractiveness, confidence with one’s appearance, a perception of a good image, and general satisfaction with one’s appearance. The items in the self-report questionnaire by airline service major students were measured using 5-point Likert scales ranging from 1 (strongly disagree) to 5 (Strongly agree). Higher scores were associated with higher appearance satisfaction. The reliability of employment preparation behavior in this study according to Cronbach’s α was .882.

3.4. Employment stress

The measurement of employment stress perceived by airline service major students was developed by Park & Jeon [34]. The measurement items of employment stress consist of ‘employment anxiety’, ‘employment worry’, and ‘employment fear’. There are five items in total, all of which are rated using 5-point Likert-type scales; the higher the score, the higher the employment stress. Cronbach's α of employment stress in this study was .863.

4. Data analysis

In this study, data were analyzed using two major statistical software: First, SPSS Win version 21.0 was used for three statistical methods: the frequency test for the descriptive statistics, the reliability test for internal consistency, and Pearson correlation analysis for the strength and direction of the linear relationships among the variables. Second, PROCESS macro version 4.0. was used to verify the mediation and moderation analyses, while the moderated mediation effect was analyzed by the bootstrapping test. The bootstrapping was tested at the confidence level of 95% with 5,000 samples and three conditions (16th, 50th, 84th] for the conditional effect [38].

RESULTS

1. Correlation analysis

Pearson’s correlation analysis was conducted to characterize the linear relationships among four variables of this study. As shown in Table 1, there was a statistically significant relationships among appearance satisfaction, self-esteem, academic major satisfaction, and employment stress.

Academic major satisfaction was positively correlated with self-esteem ($r = .433, p<.01$), and it was negatively associated with employment stress ($r = -.326, p < .01$). There was a positive correlation between academic major satisfaction and appearance satisfaction ($r = .369, p < .01$). Self-esteem had a negative correlation with employment stress ($r = -.401, p<.01$), and it had a positive correlation with appearance satisfaction ($r = .608, p<.01$). There was a negative correlation between appearance satisfaction and employment stress ($r = -.309, p < .01$). Academic major satisfaction had an average value of 4.1972, which was the highest among the variables.
Table 1

<table>
<thead>
<tr>
<th></th>
<th>Academic major satisfaction</th>
<th>Self-esteem</th>
<th>Appearance satisfaction</th>
<th>Employment stress</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Academic major satisfaction</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td>4.1972</td>
<td>0.76428</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.433**</td>
<td>1</td>
<td></td>
<td></td>
<td>4.1186</td>
<td>0.75415</td>
</tr>
<tr>
<td>Appearance satisfaction</td>
<td>.369**</td>
<td>.608**</td>
<td>1</td>
<td></td>
<td>3.8805</td>
<td>0.83078</td>
</tr>
<tr>
<td>Employment stress</td>
<td>-.326**</td>
<td>-.401**</td>
<td>-.309**</td>
<td>1</td>
<td>3.3717</td>
<td>0.93487</td>
</tr>
</tbody>
</table>

**p < .01

2. Moderated mediating effect of appearance satisfaction

The procedure of Model 14 of the PROCESS macro for SPSS created by Hayes [38] was adapted to analyze whether appearance satisfaction moderates the mediating effect of self-esteem on the link between academic major satisfaction and employment stress. The moderated mediation effect was examined using the bootstrapping method with 5,000 samples and a 95% confidence interval.

Table 2 shows the results of the moderated mediation effect. The direct effects among academic major satisfaction, self-esteem, and employment stress were found to be significant. Specifically, academic major satisfaction had a significant positive effect on self-esteem (β = .4278, p = .0000), and self-esteem had a significant negative effect on employment stress (β = -.7159, p = .0081), thus showing that self-esteem played a mediating role in the link between academic major satisfaction and employment stress. The interaction term between self-esteem and appearance satisfaction had a significant effect on employment stress (β = -.2627, p = .0002), and the increase in R² (ΔR² = .0324, p = .0002) according to the interaction term was also significant; therefore, it was found that appearance satisfaction moderated the relationship between self-esteem and employment stress.

The conditional effect of self-esteem according to the value of appearance satisfaction was significant when appearance satisfaction was in the 50th percentiles (−.3349, p = .0000) and the 84th percentiles (−.5975, p = .0000), but it was not significant in the 15th percentiles (−.00722, p > .05). Specifically, the effect of self-esteem on employment stress was significant when the value of appearance satisfaction was between 4.0000 (middle group) and 5.0000 (high group), and not when it was 3.0000 (low group). In other words, the conditional effect of the self-esteem on employment stress decreased when airline service major students’ appearance satisfaction was at higher levels of around 4.0000 (middle group) and 5.0000 (high group) on 5-point Likert scale. However, self-esteem did not affect employment stress when students’ appearance satisfaction was low, 3.000 (low group).

The Johnson-Neyman method, a type of floodlight analysis [39], was used to verify the area in which the moderating effect was conditionally significant according to the value of moderating variable. The moderating effect was significant in the area where the value of appearance satisfaction was above 3.3361, showing 70.4142% of the respondents.
Table 2
Analysis of the moderated mediation effect of appearance satisfaction on the relationship among academic major satisfaction, self-esteem, and employment stress

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>SE</th>
<th>t-value</th>
<th>p</th>
<th>LLCI*</th>
<th>ULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mediating variable model (DV: Self-esteem)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.3221</td>
<td>.2073</td>
<td>11.2036</td>
<td>.0000</td>
<td>1.9144</td>
<td>2.7298</td>
</tr>
<tr>
<td>Academic major satisfaction</td>
<td>.4278</td>
<td>.0486</td>
<td>8.8057</td>
<td>.0000</td>
<td>.3323</td>
<td>.5234</td>
</tr>
<tr>
<td>Dependent variable model (DV: Employment stress)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>2.0683</td>
<td>1.1165</td>
<td>1.8526</td>
<td>.0648</td>
<td>-.1279</td>
<td>4.2645</td>
</tr>
<tr>
<td>Academic major satisfaction</td>
<td>-.1703</td>
<td>.0656</td>
<td>-2.5953</td>
<td>.0099</td>
<td>-.2994</td>
<td>-.0412</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>.7159</td>
<td>.2686</td>
<td>2.6651</td>
<td>.0081</td>
<td>.1875</td>
<td>1.2443</td>
</tr>
<tr>
<td>Appearance satisfaction</td>
<td>.8674</td>
<td>.2971</td>
<td>2.9195</td>
<td>.0037</td>
<td>.2830</td>
<td>1.4518</td>
</tr>
<tr>
<td>Self-esteem × appearance satisfaction</td>
<td>-.2627</td>
<td>.0693</td>
<td>-3.7901</td>
<td>.0002</td>
<td>-.3990</td>
<td>-.1263</td>
</tr>
</tbody>
</table>

Test of highest order unconditional interaction

<table>
<thead>
<tr>
<th>Appearance satisfaction</th>
<th>R²</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem × appearance satisfaction</td>
<td>.0324</td>
<td>14.3646</td>
<td>.0002</td>
</tr>
</tbody>
</table>

Conditional effects of self-esteem at values of appearance satisfaction

<table>
<thead>
<tr>
<th>Appearance satisfaction</th>
<th>Effect</th>
<th>se</th>
<th>t</th>
<th>p</th>
<th>LLCI*</th>
<th>ULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0000</td>
<td>-.0722</td>
<td>.0917</td>
<td>-.7870</td>
<td>.4318</td>
<td>.2526</td>
<td>.1082</td>
</tr>
<tr>
<td>4.0000</td>
<td>-.3349</td>
<td>.0799</td>
<td>-4.1935</td>
<td>.0000</td>
<td>.4919</td>
<td>.17778</td>
</tr>
<tr>
<td>5.0000</td>
<td>-.5975</td>
<td>.1181</td>
<td>-5.0590</td>
<td>.0000</td>
<td>-.8299</td>
<td>.3652</td>
</tr>
</tbody>
</table>

Johnson-Neyman’s conditional effect significant area Appearance satisfaction value below (%) above (%) 3.3361 29.5858 70.4142
Conditional effects of self-esteem at values of appearance satisfaction

<table>
<thead>
<tr>
<th>Appearance satisfaction</th>
<th>Effect</th>
<th>se</th>
<th>t</th>
<th>p</th>
<th>LLCI*</th>
<th>ULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.8421</td>
<td>.2320</td>
<td>.1509</td>
<td>1.5376</td>
<td>.1251</td>
<td>-.0648</td>
<td>.5288</td>
</tr>
<tr>
<td>2.0395</td>
<td>.1801</td>
<td>.1393</td>
<td>1.2931</td>
<td>.1969</td>
<td>-.0939</td>
<td>.4542</td>
</tr>
<tr>
<td>3.3361</td>
<td>-.1605</td>
<td>.0816</td>
<td>-1.9671</td>
<td>.0500</td>
<td>-.3209</td>
<td>.000</td>
</tr>
<tr>
<td>3.4211</td>
<td>-.1828</td>
<td>.0799</td>
<td>-2.2876</td>
<td>.0228</td>
<td>-.3399</td>
<td>-.0256</td>
</tr>
<tr>
<td>4.2105</td>
<td>-.3902</td>
<td>.0847</td>
<td>-4.6068</td>
<td>.0000</td>
<td>-.5568</td>
<td>-.2236</td>
</tr>
<tr>
<td>4.4079</td>
<td>-.4420</td>
<td>.0911</td>
<td>-4.8499</td>
<td>.0000</td>
<td>-.6213</td>
<td>-.2627</td>
</tr>
<tr>
<td>4.6053</td>
<td>-.4939</td>
<td>.0991</td>
<td>-4.9853</td>
<td>.0000</td>
<td>-.6887</td>
<td>-.2990</td>
</tr>
<tr>
<td>4.8026</td>
<td>-.5457</td>
<td>.1081</td>
<td>-5.0460</td>
<td>.0000</td>
<td>-.7584</td>
<td>-.3330</td>
</tr>
<tr>
<td>5.0000</td>
<td>-.5975</td>
<td>.1181</td>
<td>-5.0590</td>
<td>.0000</td>
<td>-.8299</td>
<td>.3652</td>
</tr>
</tbody>
</table>

As shown in Figure 2, the result of visualizing the conditional effect of self-esteem was presented by dividing appearance satisfaction into groups with values of low, meddle, and high. Employment stress decreased as self-esteem increased in a directly proportional manner. In the group with a low (3.0000) appearance satisfaction, employment stress rarely decreased, whereas the group with a middle (4.0000) and high (5.0000) appearance satisfaction, employment stress decreased more. The group
with the sharp decrease in employment stress was the group with the high appearance satisfaction. In other words, as self-esteem increases, employment stress deceases, and even if self-esteem increases the same, employment stress of the group with a high appearance satisfaction decreases more.

Figure 2 The moderating effect of appearance satisfaction on the relationship between self-esteem and employment stress

Table 3 shows the results of analyzing the direct effect and conditional indirect effect on the path from academic major satisfaction to employment stress. The direct effect between academic major satisfaction and employment stress was -.1703 (-.2994 ~ -.0412), which was significant because 0 was not included between the bootstrap lower limit (BootLLCI) and the upper limit (BootULCI) within the 95% confidence interval. The conditional indirect effect was significant because 0 was not included between the lower and upper bounds of bootstrap within the 95% confidence interval at 4.0000 (-.1433, -.2218 ~ -.0776) and 5.0000 (-2.556, -.3775 ~ -.1505) when appearance satisfaction was middle and high. Therefore, the moderated mediating effect was verified. However, the conditional indirect effect was not significant when appearance satisfaction was low, so the moderated mediating effect was not verified. Also, the moderated mediating index was -.1124 (-.1783 ~ .0519), which was significant. Based on the results, the moderated mediating effect of appearance satisfaction on the path from academic major satisfaction to employment stress is verified.
Table 3

<table>
<thead>
<tr>
<th>Effect</th>
<th>se</th>
<th>t</th>
<th>p</th>
<th>BootLLCI*</th>
<th>BootULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.1703</td>
<td>.0656</td>
<td>-2.5953</td>
<td>.0000</td>
<td>-.2994</td>
<td>-.0412</td>
</tr>
</tbody>
</table>

Conditional indirect effects (academic major satisfaction → self-esteem → employment stress)

<table>
<thead>
<tr>
<th>Appearance satisfaction</th>
<th>Effect</th>
<th>BootSE</th>
<th>BootLLCI*</th>
<th>BootULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.0000</td>
<td>-.0309</td>
<td>.0374</td>
<td>-.1088</td>
<td>.0399</td>
</tr>
<tr>
<td>4.0000</td>
<td>-.1433</td>
<td>.0366</td>
<td>-.2218</td>
<td>-.0776</td>
</tr>
<tr>
<td>5.0000</td>
<td>-.2556</td>
<td>.0578</td>
<td>-.3775</td>
<td>-.1505</td>
</tr>
</tbody>
</table>

Index of moderated mediation

<table>
<thead>
<tr>
<th>Appearance satisfaction</th>
<th>Index</th>
<th>BootSE</th>
<th>BootLLCI*</th>
<th>BootULCI**</th>
</tr>
</thead>
<tbody>
<tr>
<td>-.1124</td>
<td>.0321</td>
<td>-.1783</td>
<td>-.0519</td>
<td></td>
</tr>
</tbody>
</table>

DISCUSSION

This study was conducted for the first time with students majoring in airline service using an integrated research model (moderated mediating effect), and its significances are follows.

First, academic major satisfaction was positively correlated with self-esteem and negatively correlated with employment stress. We agree with previous studies showing that the higher the students’ academic major satisfaction, the higher the self-esteem and the lower the employment stress. However, previous studies were conducted on the nursing students [21], and used with other variables such as job preparation behavior [27] unlike this study.

Second, self-esteem had a mediating effect on the link between academic major satisfaction and employment stress. These results are considered in the same context as the research results showing that academic major satisfaction increases self-esteem [24] and that self-esteem decreases employment stress [13; 15]. However, previous studies mostly focused on the direct effects among students’ academic major satisfaction and employment stress-related variables, and they individually identified the effect on the link between related variables.

Third, appearance satisfaction moderated the relationship between self-esteem and employment stress. In other words, the self-esteem perceived by airline service major students decreased their employment stress; however, in this process, the effect of self-esteem depends on the degree of appearance satisfaction. Students with high appearance satisfaction tend to be more confident in the job interview situations in airlines. By contrast, students with less appearance satisfaction are more likely to be stressed out due to a lack of confidence in employment compared to those with more appearance satisfaction [3]. There have been few studies so far examining the moderating effect of the appearance satisfaction, specifically targeting airline service major students.

Fourth, the moderated mediation effect of appearance satisfaction was verified in the path of academic major satisfaction and employment stress through self-esteem. In other words, the indirect effect of academic major satisfaction on employment stress via self-esteem depends on appearance satisfaction; in particular, as one’s degree of appearance satisfaction increases, the negative effect of self-esteem on employment stress gradually decreases. Appearance satisfaction serves as a mechanism by which academic major
satisfaction slows the negative path leading to employment stress through self-esteem, which was newly found the moderating effect of appearance satisfaction by this study

CONCLUSION

This study verified the moderated mediating effect of appearance satisfaction on the effects of academic major satisfaction and self-esteem on employment stress with a focus on airline service major students. Based on the results of this studies, we concluded the importance of academic major satisfaction, which increases self-esteem and decreases employment stress.

FM news [40] reported that the employment stress to become a flight attendant is very high in South Korea, because the employment rate of getting a job as a flight attendant is one in a hundred. This study provided the logic that academic major satisfaction increases self-esteem and eventually decreases employment stress. Thus, professors or faculty members in the airline service major may counsel students to improve their academic major satisfactions, and also need to develop major curriculums to prepare students for employment.

However, they are limited in developing curriculums for academic major. It may be more feasible and effective to provide airline service major students with image-boosting programs to improve appearance satisfaction as a factor that has been shown to reduce the negative relationship between self-esteem and employment stress. Students with high appearance satisfaction can just do their best in school life, rather than being stressed about employment, as they will be less likely to blame themselves for perceived shortcoming or experience stress about employment pressures. Thus, it is important to study the factors affecting appearance satisfaction and to develop appearance satisfaction programs that can help students enhance their self-esteem derived from academic major satisfaction.

Although this study produced significant research results, it has certain limitations that provide opportunities for further research. First, this study used a single dimension to measure airline service major students’ appearance satisfaction, although various dimensions likely exist. If future studies were to use an appearance satisfaction scale with multiple dimensions, it would lead to more diverse results. Second, this study collected data from four-year universities and junior colleges in South Korea; thus, these results cannot be generalized to populations in other countries. Future studies should be conducted with more varied samples to validate the moderating effect of appearance satisfaction on the mediating effect between academic major satisfaction and employment stress through self-esteem in different educational research contexts.

FUNDINGS

This work was supported by a 2023 Research Grant from Hanseo University

REFERENCES


**Information about the authors**

**Yoona Lee**  
(South Korea, Seoul city)  
Doctor Degree of Hospitality & Tourism Management  
Adjunct professor  
Airline Service  
Hanyang Womens University  
E-mail: yoona2189@naver.com  
ORCID ID: 0000-0001-8479-1257

**Aeeun Jeon**  
(South Korea, Seosan city)  
Doctor of Philosophy  
Professor  
Department of Aviation Tourism  
Hanseo University  
E-mail: 140368@daum.net  
ORCID ID: 0000-0003-0110-7048