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# Collegiate Aviation Students Perceptions of Female Representation in Collegiate Aviation and the U.S. Aviation Industry

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## Introduction

The aviation industry has had more men than women working. Throughout time, the exceptionally male dominated industry has experienced many changes to incorporate more women; however, the numbers are small by comparison (Women in Aviation International [WAI], 2019). The exact reason for the lower number of women represented in aviation cannot be pinpointed to one instance, rather research suggest it is a culmination of instances throughout history.

Currently, and throughout history, various forces and organizations have helped initiate a stronger acceptance and presence of women in aviation. However, it hasn't been an easy road for these women. Overtime, women in the aviation industry have faced challenges and adversity. As a result, it has affected women's overall representation and active growth in the U.S. aviation industry. This research provides the perceptions of collegiate aviation students and aims to identify if students perceive that underrepresentation exists and if female aviation students encounter any difficulties based on gender at the collegiate aviation level. This identification has the potential to help the aviation industry and collegiate aviation institutions recognize any associated gender problems to help insure the adequate growth and representation of women in aviation. This recognition provides an opportunity to create new standards, protocols, and inclusionary efforts to increase female representation in both sectors to ensure a diverse future aviation workforce.

## Review of Literature

To accurately understand the representation of women in aviation, it is essential to understand the historical evolution of women in aviation. The birth of the U.S. aviation industry took place on December 17, 1903, when two *men*, Orville and Wilbur Wright, accomplished the

great feat of "manned" powered and sustainable flight in Kittyhawk, North Carolina (Smithsonian National Air and Space Museum, 2019). This inaugural flight is credited to giving birth to the development of the U.S. aviation industry.

The Wright Brothers' inaugural flight could not have been possible without the help of a woman, however. The Wright brothers' sister, Katherine Wright, made financial contributions to her brothers so they could purchase materials to construct their fragile planes (Holden & Griffith, 1992). Although it is primarily what is portrayed in history books, it is important to remember that men were not the only individuals that were captivated by flight after the Wright's accomplishment. Women also showed great interest in the development and innovation of the aviation industry and played a significant role in U.S. aviation history. However, faced with adversity and setbacks, many aspiring female aviators found establishing careers and gaining recognition in the aviation industry a difficult and almost impossible task. Multiple women throughout aviation history such as the Women Air Force Service Pilots (WASPs) of WWII, Amelia Earhart, and WWII "Riveters" encountered challenges that have had lasting effects on the optimal growth and overall representation of women in aviation. Throughout history, gender bias and barriers have played a critical role in the pursuit and success of women in aviation. The very definition of gender bias is considered giving preference or prejudice toward one gender over the other. In addition to gender bias, a gender barrier is what society has conditioned everyone to recognize as being either male or female. One of the major barriers for female representation in aviation is what society has historically considered as appropriate roles for women. According to Luedtke (2011), society believed a woman could not uphold her domestic responsibilities and a professional role in aviation simultaneously. Although there has been improvement of lifting society's beliefs of women's role in domesticity, according to Mills,

Neal-Smith, and Bridges (2016) *Absent Aviators: Gender Issues in Aviation,* many women in aviation today still face and must overcome similar issues as their female aviation predecessors. In their book, Mills et al. (2016) depict challenges encountered in aviation specifically for women, with an emphasis on female pilots. In summary, the book provides insight of challenges women in aviation face, including stereotypical attitudes toward women in aviation starting from adolescence, cockpit concept and design historically based on male composition, and industry and organization culture dominated by masculine views and practices.

Over the past several decades, the number of women involved in the aviation industry has increased, but is still small in comparison (WAI, 2019). Specifically, according to WAI, female pilots only represent 7% of the 609,306 total pilot population nationally (WAI, 2019). WAI (2019) also gives the industry-wide number of women involved in other aviation-related careers, and, according to their website data, less than 30% of women were recorded in other various aviation related careers. As a point of comparison, the Federal Aviation Administration (FAA) collected data from the years 2010 to 2019 regarding women's involvement in aviation. According to their data, there was a 1% increase of women in the total pilot population. In addition, there was also a notable increase of 8% of women recorded in other various aviation related careers from the years 2010-2019 (Federal Aviation Administration [FAA], 2020).

Since college is the traditional starting point for aspiring female aviators in the U.S., a good origin to investigate the representation gap is to identify if female aviation students encounter any difficulties at the collegiate aviation level. According to the online *Digest of Education Statistics* (U.S. Department of Education, 2016), 4,711 students received a bachelor's degree in an aviation-related field in 2015. Of those students, 578 (12%) were women. Numerous researchers have dedicated considerable amounts of time exploring the reasons behind

the low number of women involved in collegiate aviation and the U.S. industry. In the mid-90s Luedtke investigated reasons for the lower number of women in the U.S. collegiate aviation education system. In her study, Luedtke found that history has shown that it has always been a struggle for women to break into a male-dominated field and that aviation has no exception (Luedtke, 1994). Similarly, Luedtke and Bowen (1993) sought the determinants of the underrepresentation of women in aviation education. Their study analyzed the similarity between the number of female pilots and the number of female faculty in the University Aviation Association (UAA). They discovered that higher education is an area that is experiencing gains toward achieving a proportionate rate of men and women, but not pilots (Luedtke & Bowen, 1993). In 2001, Karp et al. examined how aviation educators can retain women in collegiate aviation by implementing learning style considerations. Findings of this study suggested that aviation academic providers must design their curriculum and delivery to meet the needs of specific learning styles for not only women, but both genders to better prepare and retain them to enter the aviation industry (Karp et al., 2001). In 2009, Depperschmidt and Bliss surveyed female flight students to determine if barriers and gender biases are the cause of underrepresentation of women in collegiate aviation flight programs. Their study found that female flight students do not believe negative biases or barriers exist at their colleges and that female flight students believe that the underrepresentation of female flight students should be a concern for collegiate aviation programs (Depperschmidt & Bliss, 2009). In 2010, Ison evaluated the trends of participation by women in postsecondary aviation programs in the U.S. at the student and faculty levels. Ison found that the rates of participation for women in education were higher than those among the pilot population in the aviation industry in general, particularly for female faculty (Ison, 2010). Through their extensive research, many of these researchers

identified significant concerns about female representation in aviation and the necessity for more women to enter the field. Unlike the previously mentioned studies, this research focused on perceptions from both male and female collegiate aviation students from all academic aviation degrees. To see if students perceive the following: women are underrepresented in aviation, if problems exist for female aviation students, and if so, are these problems affecting the growth and representation of women pursuing professional careers in aviation.

## Methodology

This study sought the perceptions of collegiate aviation students at the collegiate level concerning the following:

1. Do collegiate aviation students perceive women are underrepresented at the collegiate and industry levels?
2. Do collegiate aviation students perceive gender biases or barriers exist for women in the aviation environment?

### Research Population

To answer these research questions, this study sought the perceptions of collegiate aviation students, enrolled at 2- or 4-year collegiate institutions offering comprehensive aviation curriculum that are institutional members of the UAA. At the end of October 2018, the author sent out personal emails to over 50 aviation faculty at 40 institutions inviting them to participate with a provided electronic survey link to forward to their collegiate aviation students. After approximately 30 days, the survey was deactivated, and data were analyzed for this study. Because of the anonymity of the electronic survey, institutions that participated were not identified.

**Research Instrument**

The research instrument began with an introduction to the study. In the introduction of the electronic research instrument, it listed information about participants' voluntary consent, survey instructions, and the purpose of the study, along with the definitions of gender bias and gender barriers. The research instrument defined gender bias as a preference or prejudice toward one gender over the other. The research instrument defined gender barrier as what society has conditioned everyone to recognize as being either male or female. The research instrument was composed of three sections. The first section sought demographic information about the participants concerning gender, grade classification, and student and faculty gender population at their institution. The second section of the research instrument offered participants a set of Likert-scale statements in an ordinal measurements pattern that offered respondents the options of *Strongly Agree, Agree, Disagree, or Strongly Disagree*. For this study, the author used a 1-4, forced response, Likert-Scale. The forced-response Likert-scale does not offer a central or neutral choice and forces the respondents to agree or disagree with the statement (Trochim, 2006). The last section of the research instrument was an open text box for participants to summarize their personal experiences, comments, concerns, and observations. Permission to conduct this study and solicit this research instrument was approved by the Institutional Review Board at Oklahoma State University (approval # ED-18-148).

**Analysis**

The Likert-scale statements were analyzed using Cronbach's alpha (α) reliability test to measure internal consistency. To measure internal consistency, Cronbach's α determines how all items on a test are related to all other items and the total test (Gay, Mills, & Airasian, 2006). George and Mallery (2003) established the following Cronbach's α acceptance scale: " ≥ .9 –

*Excellent*; ≥ .8 – *Good*; ≥ .7 – *Acceptable*; ≥ .6 – *Questionable*; ≥ .5 – *Poor*; and ≥ .5 – *Unacceptable*" (p. 231). The overall Cronbach's alpha value of .703 representing a level of acceptable based on the George and Mallery (2003) scale. This study also applied descriptive statistics. Descriptive research helps describe, show or summarize data using percentages, rates, ratios, graphs, and frequency distributions (Laerd Statistics, 2015). The benefits of using descriptive statistics are to help researchers effectively describe and communicate patterns that might emerge from the data. The descriptive statistics in this study were summarized by using frequency distributions and percentages. In addition, an independent samples t-test was used to evaluate gender biases and gender barriers for females by gender (i.e., male and female) with a Bonferroni adjusted alpha of .025 (.05/2) to control for Type I error rate for the two t-tests (i.e., biases and barriers).

**Limitations of Study**

Limiting to this study was the volunteer nature of participation for the respondents. Results of this study reflect the 124 participation respondents who were available and willing to complete the electronic research instrument. Further, results to this study are the perceptions of most respondents being male collegiate aviation students. In addition, some results of participants Likert-scale responses shows a disparity from participant's personal comments.

## Results

This study provides the perceptions of 124 collegiate aviation students.

**Collegiate Aviation Students' Demographic Information**

The first section of the research instrument sought demographic information about participants and their institutions. The first question of the research instrument asked participants to identify their gender. This demographic question sought to identify the ratio

between male and female students surveyed to illustrate the fewer number of women represented in collegiate aviation. Of the total 124 students that responded, 96% identified as male aviation students and the remaining 4% were female. Table 1 *Collegiate Aviation Student Gender Identification* shows the results from demographic Question One. Question Two of the demographic section asked participants to identify their grade classification. Twenty percent (20%) identified as freshman, 20% identified as sophomore, 20% identified as junior, and 40% identified as seniors.

Table 1

*Collegiate Aviation Student Gender Identification*

| **Students' Gender** | **Percentage of Responses** |
|---|---|
| Male | 96% n = 119 |
| Female | 4% n = 5 |

To better understand the difference in gender population and to see female representation at participating respondents' institutions, Questions Three and Four of the demographic section asked participants to identify if most of their students, faculty, and instructors are men or women. When asked about the gender majority of the aviation student population enrolled at their institution, 95% identified that males make up the majority of their student population at their institution. Additionally, 98% of respondents also identified that the majority of aviation faculty and instructors at their institution are also male (see Table 2).

Table 2

*Gender Majority at Respondents' Institution*

| **Demographic Question** | **Percentage of Responses** |
|---|---|
| The majority of students enrolled at my institution are? | 95% Male n = 117<br>5% Female n = 7 |
| The majority of aviation faculty and instructors at my institution are? | 98% Male n = 122<br>2% Female n = 2 |

## Collegiate Aviation Student Perceptions

The second section of the research instrument was composed of Likert-scale interpretative statements that sought collegiate aviation student's perceptions over the following: female representation at the collegiate and industry level, treatment of female collegiate aviation students, and the existence of gender barriers and biases in collegiate aviation. Table 3 *Female Representation at the Collegiate and Industry Level* shows the results to five Likert-scale interpretative statements.

Table 3

*Female Representation at the Collegiate and Industry Level*

| Likert Statement | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| Gender "biases" for females exist in the U.S. aviation industry. | 17%<br>n = 21 | 44%<br>n = 54 | 24%<br>n = 30 | 15%<br>n = 19 |
| Gender "barriers" for females exist in the U.S. aviation industry. | 14%<br>n = 17 | 33%<br>n = 41 | 32%<br>n = 40 | 21%<br>n = 26 |
| There is equal representation of gender diversity (male/female) in the U.S. aviation industry. | 4%<br>n = 5 | 17%<br>n = 21 | 44%<br>n = 55 | 35%<br>n = 43 |
| Overall, the U.S. aviation industry is male dominated. | 54%<br>n = 67 | 45%<br>n = 56 | 0%<br>n = 0 | 1%<br>n = 1 |
| Overall, U.S. collegiate aviation is male dominated. | 43%<br>n = 53 | 51%<br>n = 63 | 4%<br>n = 5 | 1%<br>n = 1 |

The second section continued with Likert-scale statements concerning the treatment of female collegiate aviation students and the effects of their success in collegiate and professional aviation. These statements included the perceptions of female students' ability to relate and identify with same gender faculty and peers, female students' abilities, female students' success and failures, and the relationship between female students and their male peers and male faculty. Table 4 *Treatment of Female Collegiate Aviation Students* shows student perceptions on these issues.

Table 4

*Treatment of Female Collegiate Aviation Students*

| Likert Statement | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| Female aviation students have equal abilities in (flying, coursework, homework, assignments, etc.) as male aviation students. | 74%<br>n = 91 | 24%<br>n = 30 | 0%<br>n = 0 | 2%<br>n = 2 |
| As a result of the lower number of females in aviation, it is harder for female aviation students to succeed in collegiate aviation and the industry because it is difficult for them to identify with, relate to, seek advice, or engage with someone of their same gender. | 4%<br>n = 5 | 21%<br>n = 26 | 45%<br>n = 56 | 30%<br>n = 37 |
| Female aviation students feel discouraged and fail to succeed in the U.S. aviation industry as a result of the higher number of males in the U.S. aviation industry and collegiate aviation. | 1%<br>n = 1 | 12%<br>n = 15 | 52%<br>n = 64 | 35%<br>n = 43 |
| As a result of the lower number of female students, female instructors, and female faculty, female aviation students do not complete their aviation degree or pursue other academic majors outside of aviation. | 1%<br>n = 1 | 12%<br>n = 15 | 53%<br>n = 66 | 34%<br>n = 42 |
| Male collegiate aviation students treat female aviation students as equals at my institution. | 46%<br>n = 57 | 42%<br>n = 52 | 12%<br>n = 15 | 0%<br>n = 0 |
| Male faculty/instructors treat female aviation students differently than male aviation students at my institution. | 8%<br>n = 10 | 13%<br>n = 16 | 45%<br>n = 56 | 34%<br>n = 42 |

The last set of Likert-scale statements sought the perceptions of gender barriers and biases existence in collegiate aviation to identify if barriers and bias contribute to the underrepresentation of females in the U.S. aviation industry. Table 5 *Existence of Barriers and Biases in Collegiate Aviation* gives a detailed result of collegiate aviation student perceptions of gender barriers and biases existence in collegiate aviation.

Table 5

*Existence of Barriers and Biases in Collegiate Aviation*

| Likert Statement | Strongly Agree | Agree | Disagree | Strongly Disagree |
|---|---|---|---|---|
| Throughout the history of aviation, women have encountered gender biases and barriers. | 28% n = 35 | 53% n = 66 | 12% n = 15 | 7% n = 8 |
| Women are treated different at my collegiate aviation institution. | 3% n = 3 | 13% n = 16 | 37.5% n = 47 | 46.5% n = 58 |
| There have been times in my academic career I feel /or have witnessed female students treated differently because of gender. | 9.5% n = 12 | 22% n = 27 | 26.5% n = 33 | 42% n = 52 |
| Negative experiences in collegiate aviation associated with gender barriers and biases prevent females from pursuing professional careers in the U.S aviation industry. | 0% n = 0 | 25% n = 31 | 48% n = 60 | 27% n = 33 |
| Gender "biases" for female aviation students exists at my collegiate aviation institution. | 3% n = 4 | 22% n = 27 | 39% n = 48 | 36% n = 45 |
| Gender "barriers" for female aviation students exists at my collegiate aviation institution. | 1% n = 1 | 16% n = 20 | 47% n = 58 | 36% n = 45 |
| The primary reason for the lower number of females in the U.S. aviation industry is because of gender barriers and biases that exist at the collegiate aviation level. | 0% n = 0 | 20% n = 25 | 43% n = 53 | 37% n = 46 |

Presented in Table 6 *Male and Female Perceptions of Biases and Barriers* below are the results of the two t-test and Bonferroni. Males ($M$ = 2.59) perceived biases were significantly higher than females ($M$ = 1.86), $t(66) = 4.07$, $p < .001$ and males ($M$ = 2.89) perceived barriers were also significantly higher than females ($M$ = 2.14), $t(93) = 3.87$, $p < .001$.

Table 6

*Male and Female Perceptions of Biases and Barriers: Descriptive (Means, Standard Deviation, Sample Size per group and Inferential Statistics)*

| Variable by Gender | | *M* | *SD* | *n* | Δ*M* | *t* | *df* | *p* |
|---|---|---|---|---|---|---|---|---|
| Biases | Women | 1.86 | .74 | 29 | .729 | 4.07 | 66* | <.001 |
| | Men | 2.59 | .93 | 66 | | | | |
| Barriers | Women | 2.14 | .83 | 29 | .756 | 3.87 | 93 | <.001 |
| | Men | 2.89 | .90 | 66 | | | | |

Note: * = Equal variances assumption not met so corrected the degrees of freedom (*df*) was used.

The last section of the research instrument was a personal comment section where 40% of collegiate aviation students surveyed left personal comments about their own personal experiences, comments, concerns, or observations regarding the underrepresentation of women in aviation and existence of gender biases and barriers in collegiate aviation and the U.S. aviation industry. Participants' personal comments will be interpreted in the discussion.

## Discussion

Overall, findings of this study indicate that collegiate aviation students perceive women as underrepresented in both levels of aviation: collegiate and industry. According to the results of the last three Likert-scale statements on Table 3 *Female Representation at the Collegiate and Industry Level,* collegiate aviation students do not believe equal gender diversity exists in the aviation industry and perceive aviation as male dominated. When seeking to explain potential reasons why collegiate aviation students perceive low female representation in aviation, Table 4 *Treatment of Female Collegiate Aviation Students,* sought to determine specific circumstances encountered by female aviation students that could potentially result in low representation in

both levels of aviation. According to results from Table 4, respondents do not believe low representation of women is because of the treatment or experiences of females in the collegiate aviation environment. Rather respondents' personal comments suggest students perceive a combination of historical/societal ideologies as well as the majority amount of the population being males in aviation have an impact on the representation of women in aviation. As the results of this study portray, the underrepresentation of women at the collegiate aviation level starts with the limited number of female aviation faculty and instructors and continues into the student population. The first demographic question of this study illustrates the underrepresentation of women in aviation. Of the 124 respondents only 4% of respondents identified as women, which is significantly lower than the industry average previously given in the literature according to WAI (2019). Furthermore, 98% of students responded that the majority of instructors and faculty at their institution are men and 95% responded that the majority of the student body at their institution are men. These responses illustrate the significant representation gap for women in collegiate aviation. To further understand and explain why collegiate aviation students perceive underrepresentation at both levels for women in aviation, the researcher began to explore the personal comment section of the research instrument. Forty percent of total respondents gave meaningful insight in the personal comment section explaining their personal perceptions. A common theme students specifically expressed in the personal comment section was that they perceive that the lower number of women in aviation is a direct result of the history of the aviation industry being male dominated and societal views of what is acceptable as female roles. One student explained in the personal comment section that because of these issues "that females sometimes do not even consider aviation as a career or degree path." In addition to historical and societal perceptions, many

explained in the personal section that low female representation in aviation could be a result of the majority being men in aviation. Students expressed through personal comments that as a result of male dominance in aviation, that female aviation students could potentially feel discouraged from the lack of association from a female faculty/flight instructor or peer of the same gender. A female student responded in the personal comment section about her experience involving the underrepresentation of women during her collegiate aviation tenure. She wrote "Since I have been in college over the last three years, I have maybe had four or five female classmates in my aviation courses and no female professors or flight instructors." She continued by writing "this can be very discouraging to some females pursuing a degree in flight or aviation."

While most students agreed that low representation could be potentially discouraging for women through personal comments, one female student explained in the personal comment section that she views the underrepresentation as an advantage and motivator. She explained that "If you want to become a pilot, being underrepresented is not a strong reason for females to quit their flight training. As a female, I feel like I have an advantage in the aviation industry. Companies want to hire females to diversify, and universities want to accept as many female students as they can to balance out the ratio." She concluded by responding "If anything, the male to female ratio keeps me going! I've never been more determined to pursue my training. Like I stated previously, if a female really wants to be a pilot, then she'll let nothing stop her from achieving that."

As the results in the first Likert-scale statement in Table 5 *Existence of Barriers and Biases in Collegiate Aviation* depicts, 81% of collegiate aviation students that participated in this study believe that throughout history, women have encountered gender biases and barriers.

However, most of the remaining responses in Table 5 portrays that collegiate aviation students do not perceive that women have negative experiences at their collegiate aviation institutions because of their gender. When presented with the statement *"Gender biases for female aviation students exist at my collegiate aviation institution,"* 75% of students *Strongly Disagreed* or *Disagreed*. Similarly, when presented the statement "*Gender barriers for female aviation students exist at my collegiate aviation institution,"* 83% of students also *Strongly Disagreed* or *Disagreed*. Although the results overall from the Likert-scale statements elucidate students do not perceive gender bias or barriers exist for women in collegiate aviation. Notably, from the data collected from the personal comments section some students have varying perceptions. The overall consensus of personal comments made by students were the perceptions that gender barriers and biases exist in favor and in opposition of female aviation students. It is important to remember that the definition of bias was included in the introduction of the research survey in regards to this research question in hopes that students would not just assume a negative connotation. A bias is considered giving preference or prejudice toward one gender over the other. When presented with the statement "*There have been times in my academic career I feel /or have witnessed female students treated differently because of gender,"* over 30% of respondents *Strongly Agreed* or *Agreed*. Most of the personal comments were student perceptions of women being given preferential treatment or opportunities specifically because of their gender. However, some students responded that gender barriers and biases at their institution are in opposition of women. Interestingly, the perceptions of gender bias and barriers in collegiate aviation varied among male and female student respondents. Most male students responded in the personal comment section that gender biases exist in favor of women, while female student respondents expressed biases exist in opposition of females. One female student

gave her personal perception regarding her experiences with aviation faculty, she wrote "Some of my male instructors have been very rude and not willing to treat me as a female the same as their male students and it has significantly hindered my training." Another student wrote "I had a professor continuously talk down to two girls in my class. He continued to talk over them or even make fun of them on some level." Although some remarked negative barriers and biases exist for female aviation students in the personal comment section. A recurring observation in the personal comments suggests perceptions that female aviation students are given preferential treatment, afforded special opportunities, and have more scholarships available at their institution because of their gender. One male student wrote "I have witnessed gender bias in favor of women in my institution and in the industry." The student continued by writing "Women are afforded many special opportunities such as scholarships and clubs." Another male student explained "I have noticed that because there are so few female aviation students, the ones that are here are often times presented with good opportunities because they are women. In other words they may actually have an advantage because being a woman in aviation is something that can positively differentiate an individual from her peers."

Overall, collegiate aviation students that participated in this survey recognized the representation gap and barriers and bias for women in the collegiate aviation environment and the U.S. aviation industry. Notably, this recognition identifies that the future workforce in aviation is aware of the current gender dynamics in collegiate aviation and the U.S. aviation industry and because of their awareness, it will hopefully aid in more industry diversification in the future.

## Conclusion

According to the data collected, one of the major findings this study provided is that the majority of collegiate aviation students are aware that fewer females participate in collegiate aviation and the U.S. airline industry. The majority of respondents believe that the low representation of women in aviation is a result of collegiate aviation and the U.S. aviation industry being predominantly male currently and historically. The common perspectives expressed by students is that gender barriers and biases exist in favor and opposition of women in collegiate aviation and the U.S. airline industry. Collegiate aviation students believe that female students are sometimes treated differently than their male peers in the classroom both positively and negatively. Personal comments indicate perceptions that female students are sometimes treated negatively or afforded different or "special" opportunities in terms of scholarship or special treatment based on gender.

To conclude, according to this study, collegiate aviation students believe female representation is an important issue that needs to be addressed in aviation. It is encouraging that the future of the aviation industry, collegiate aviation students, which participated in this survey, believe in female aviators, consider them as equals, and see positive changes for women in collegiate aviation and the U.S. aviation industry. Their perceptions of optimism and equality ensure the necessity of growth for female representation in collegiate aviation and the U.S. aviation industry. Defining the exact problems and causes of low representation of women in aviation is very complex. Further research and efforts are needed to continue to find positive solutions to female representation in collegiate aviation and the U.S. aviation industry, to ensure a diverse future aviation workforce.

Based on the results and conclusions of this study, the author offers the following recommendation. A further study is recommended to survey the perceptions of industry level professionals in aviation as well as collegiate aviation students concerning female representation in aviation. This study could be used to compare if similarities or differences exists between the two populations perceptions to understand the causes for low female representation in aviation. This information could be beneficial in creating new standards, protocols, and inclusionary efforts to increase female representation in both sectors to ensure a diverse future aviation workforce.

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