In Plain Sight: An Analysis of Factors That Influence the Recruitment and Retention of Black Aviation Professionals

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Racial minorities remain significantly underrepresented in aviation. To gain the advantages of broader representation and to address the workforce needs of the industry, aviation must attract and retain the best possible talent from a broad workforce pool. The purpose of this research is to examine the factors that influence the recruitment and retention of Black aviation professionals. A survey of members of the Organization of Black Aerospace Professionals was conducted. Results show youth outreach is essential and the industry must address creating a more inclusive culture. Evidence showed racism, discrimination and sexism remain and negatively impact the ability to recruit and retain the Black aviation workforce. Results also reveal the intersectionality between race and gender leads to unique challenges for retention of Black women who are more likely to leave the industry than Black men, requiring the need to focus on bias, pay equity, and advancement of women. Access to career guidance resources and mentors are also identified needs. The results establish the factors that positively and negatively influence the recruitment and retention of Black aviation professionals, leading to strategies to address workforce needs through attracting a talent pool in plain sight.

Racial and gender diversification has experienced a positive trend within the general United States workforce over the past 20 years, but the same cannot be said within the transportation sector, specifically the aviation industry (Bureau of Labor Statistics [BLS], 2021). For instance, only 3.4%, 10.8%, and 6.8% of pilots, maintenance technicians, and aerospace engineers, respectively, identify as Black/African American (Lutte, 2021). The industry's gender disparity is bleak as women make up less than 20% of the workforce in most aviation occupations (Lutte, 2021). If not disparate enough, female airline pilots identifying as Black comprise 0.5% of the entire airline pilot population (Sisters of the Skies, 2021). These statistics illuminate the backdrop of the workforce development issue from a racial and gender lens. The statistics underscore the notion aviation has been and will continue to be white male dominated unless recruitment/retention issues are quelled.

There have been numerous outreach efforts made by prominent aviation entities such as Organization of Black Aerospace Professionals (OBAP) and through the establishment of pathways programs such as the United Aviate and Southwest Destination 225 programs to connect with individuals from underrepresented groups (United Aviate Academy, 2022; Southwest, 2022). Despite these efforts, racial minorities remain significantly underrepresented. This signals negative factors undergirding the recruitment/retention of underrepresented groups within the industry. Identifying and addressing these factors will create the opportunity to attract the best possible talent from a wider workforce pool.

Review of Literature

Dire Straits - Aviation Workforce Forecast

The acquisition of a diverse workforce yields diverse representation of thought and perspective, which can be advantageous for organizational problem solving. Additionally, organizations benefit from enhanced safety, innovation, and profitability (FAA, 2022). To meet the workforce needs for the future, a wider and more inclusive talent pool must be targeted (Lutte, 2021). The Boeing forecast predicts a need for 612,000 new civilian pilots, 626,000 new maintenance technicians, and 886,000 new cabin crew members worldwide over the next 20 years (Boeing, 2021). This statistic denotes the dire straits the industry is in and warrants the topic of workforce demand being cause for concern despite the financial impact of the pandemic. The overarching goal remains the same: Recruit and retain the highest level of talent for the future of the industry, specifically leveraging untapped sources of talent that have been in 'plain sight' within underrepresented groups. Doing so is a clear method to meet the aviation workforce demand.

Societal Black Advancement

The need to track and monitor the progression of racial minorities and women in the contexts of higher education, aviation, and collegiate aviation programs is something several scholars and aviation experts contend should occur (Ison et al., 2016; Ison, 2018; FAA, 2022). This need is justified as there has been relatively little data collected on these underrepresented groups within the industry, which is compounded by the scarcity of extent research and literature written about them. Historically, participation rates of racial minorities and women in STEM-

fields such as aviation, has been low. Despite low participation rates, research by Ison et al., (2016) demonstrated rates of non-White students who completed professional pilot collegiate aviation programs increased from 17.3% to 27.3% between 2004 and 2014, exceeding the participation rates within the industry. Such a statistic denotes increased improvement over the years and signals a high probability of continued advancement of these groups within the industry. This positive trend, however, cannot be said for those specifically identifying as Black as their professional pilot degree completion rates remained relatively unchanged (.29%) during the same period (Ison, 2016). Such staggering data implies barriers may exist within the pathway between aviation higher education and the industry that is adversely impacting minority recruitment/retention.

While there has been an increase in research focused on women in aviation, historically, there has been little concern in understanding the lived experiences of the Black workforce in aviation, potentially exacerbating the diversity disparity. Research by Harl and Roberts (2011), elucidates factors underpinning some of these lived experiences, asserting the fear of being unsuccessful in the industry due to financial and social barriers and lackluster representation in positions in which they are being recruited for are endemic to the Black experience in a white-male dominated industry, which may help explain the racial and gender disparity.

Many organizations are now implementing more diversity, equity, and inclusion initiatives within the workplace. Consequently, an opportune platform for the sharing of lived experiences has been created. This is beneficial as it may allow for previous obscurations of racial and gender barriers hindering underrepresented groups from participating in aviation to be expounded upon. The most common and prominent of these barriers identified to date consist of difficulty navigating academe (Murillo, 2020), social isolation (Evans, 2013), and financial burden (e.g., flight training costs) (Harl & Roberts, 2011).

Barriers to Persistence of Black Students and Aviation Professionals

Navigation of the academy. Navigating the academic environment can prove difficult for seasoned students but can pose what seems like an insurmountable barrier to minority students. This can cause an overwhelming feeling, especially for those who identify as Black/African American and/or first-generation. Murillo (2020) found these students feel as if they must figure everything out on their own, including tasks such as locating integral departments (e.g., Financial Aid) or finding academic support services (e.g., the writing center). Albeit generalizable to one's college experience, underrepresented students may experience enhanced difficulty with some of these tasks. If these students are experiencing difficulties navigating their own campus, then it is not farfetched for them to struggle with finding scholarship information or career opportunities.

Social isolation. The pressure from wanting to do well academically coupled with life stressors that apply external pressure enhance the difficulty of navigating academe for many students. When students struggle to find a sense of belonging or a community of students they can relate to, social isolation is likely to occur (Murillo, 2020). The social isolation and lack of community bestows its own pressures for Black students and professionals, including feeling the need to represent the entire Black race to White individuals (Evans, 2013; Harl & Roberts,

2011). Those that succumb to these pressures are usually forced to assimilate to the dominant culture. This is done to make their time easier or to lessen the barriers to advance their careers, which has been the practice of underrepresented groups for hundreds of years (Mattson et al., 2018).

Financial burden. A widely understood barrier to advancement in aviation is the high cost of flight training. This is supported through research by Murillo (2020), who suggests the costs of collegiate flight training programs require students to pay $50,000-$80,000, excluding traditional tuition and fees. Such a steep cost poses a significant entry barrier to students whose families are unable and/or unwilling to help with flight training costs. This is of especial applicability for students from low socioeconomic households or parents on fixed incomes, and at the age of 18/19 years old, many students are unable to acquire private loans on their own to offset the costs. Simply, the inability of these students to pay such a large amount of money is the reality for many aviation students and tends to be the final nail in the coffin for their aviation career before it starts. This is supported by Depperschmidt and Bliss (2018), who found 33% of students felt the cost of flight training at their collegiate flight school impacted their ability to pursue an aviation career (i.e., become a professional pilot) within their university.

Positive Factors Influencing Black Students and Aviation Professionals

Mentorship. A mentor supports, guides, and counsels the mentee as he/she accomplishes personal, professional, and/or academic goals. Mentors operate in two main areas: Career Development and Psychosocial Support. These areas work in tandem to assist the mentee in navigating and/or acclimating to the work environment and enhancing their competence and self-confidence (Cline, 2018). Individuals experience significant career advancement, psychosocial support, and other salient benefits such as increased job satisfaction, higher wages, and enhanced self-confidence (Cline, 2018). Black/African American students and aviation professionals that obtain a mentor, especially an informal mentorship, with someone they can identify with and/or relate to in terms of race, ethnicity, or gender aids in the recruitment and retention of Blacks in aviation (Murillo, 2020; Evans & Feagin, 2012). The presence of mentors can serve as a source of personal support that is necessary for their success, providing a positive factor and influence on their decision to stay the course despite social, financial, emotional, and institutional barriers that are endemic to both higher education (for Black collegiate aviation students) and the white-male dominated aviation industry (for Black aviation professionals).

Minority organization support. Minority Organization Support is another positive influence aiding in the success of Black students and aviation professionals. Prominent organizations include OBAP and Sisters of the Skies. The integral role these organizations play can be undervalued because many are unaware of their existence, let alone joining, which is accentuated in Murillo (2020), as the consensus of several participants is that they wished they would have known about these entities and their aim to help minorities earlier in their collegiate career.

The existence of these organizations has been the cornerstone and/or 'life support' for an innumerable number of underrepresented students struggling to find the funding, support, and the will to continue their aviation endeavors. This is adduced via research by Murillo (2020), in

which several of the participants mentioned they received support from aviation minority organizations. More specifically, these organizations satisfied the basic needs (e.g., physiological and love/belonging) of minority students (Murillo, 2020), that were not being met in other facets of their life due to mandatory financial obligations (e.g., living expenses) and family members that were unsupportive of their decision to pursue aviation in college. The needs of these students were also met through attendance at university gatherings and minority organization sanctioned activities such as OBAP barbeques. For instance, one of Murillo's interviewees stated if it had not been for their attendance at the OBAP barbeques, they would have been hard pressed to feed themselves and more importantly, remain steadfast in their aviation endeavors due to lacking socio-emotional support and belonginess.

Contribution

The literature review provided an overview of the dire straits the industry is experiencing by leveraging workforce forecast data, described the barriers to persistence of Black students and aviation professionals, and expounded upon the positive factors that influence these individuals to enter and/or remain in aviation. This study seeks to address a gap in the literature regarding the dearth of information surrounding underrepresented participation in aviation, specifically Black students and aviation professionals. This is accomplished via explicating reasons why Black aviation professionals pursue careers in aviation and highlighting barriers that impact the recruitment/retention of these individuals. Of significance, this study strives to provide extensive insight that can be beneficial to/for aviation entities in terms of improving their organization, promoting inclusiveness, and rectifying barriers that stymie Black aviation students and professionals.

Purpose of the Research

The purpose of this research is to gain knowledge on influencing factors that draw people who are Black into aviation careers and the challenges experienced in the pursuit of aviation careers. Gaining an understanding of these factors and experiences may assist with the development of pointed strategies to recruit and retain individuals who identify as Black to the field.

Research Questions (RQs):
RQ#1: What factors positively or negatively influenced Black aviation professionals to pursue a career in aviation?
RQ#2: What barriers exist within the aviation industry that negatively influence Black aviation professionals from pursuing an aviation career?
RQ#3: What factors positively or negatively influenced Black aviation professionals to remain in a career in aviation?

Methodology

Survey research was selected to provide a quantitative description of attitudes or opinions of a specified group (Creswell & Creswell, 2018). To address the identified challenge of gaining access to participants in aviation survey research (Rice et al., 2017), the authors worked in

collaboration with OBAP to conduct a purposive sample survey distributed to the OBAP database (included current members, lapsed members, and prospective members). Questions for the survey focused on demographics, recruitment, retention, and challenges or perceived barriers to entry to address the specific research questions. Question development was informed through previous research on factors, which influence career decisions in aviation. For example, Anderson and Purcel (2003), identified factors that influence the decision to become a professional pilot. Those factors also informed further research specifically targeted to women in aviation, but to a broader range of aviation occupations (Lutte & Morrison, 2022). For this survey, both studies were reviewed, and questions were drafted using the previously identified factors as a basis to create a survey specifically targeted to the research questions. A combination of closed-ended and open-ended questions were included. Question groups were designed to measure whether identified factors positively or negatively influenced career decisions related to recruitment and retention. A pretest of the survey was conducted, which resulted in minor revisions. Cronbach's alpha was applied to the recruitment and retention categories of questions. Results were .865 for recruitment and .892 for retention indicating internal consistency. Open-ended questions were coded using NVivo software to identify the primary themes. The survey received Institutional Review Board approval (IRB #135-21) and was delivered online and distributed by OBAP.

Results

The total number of responses was 573. The respondents reported gender as 73% male, 24% female. Respondents' aviation occupations covered a wide range of areas with most in the category of airline pilot (46%). Additional occupation areas included student (11%), military pilot (9%), and the categories with less than 5% representation included occupations such as human resources, flight attendant, airline management, engineering/technical operations, maintenance technician, air traffic controller, and dispatcher. Experience levels varied but the most often reported category (31%) was "employed in aviation for more than 20 years". The targeted population was Black, yet the demographics revealed that 54% of respondents were Black, 21% White/Caucasian, and 9.2% Hispanic or Latino. The full results are provided in Figure 1. To address the research questions, results presented in the recruitment, retention, and greatest barriers/challenges section of this paper were filtered to only include Black respondents. The unexpected wide range of race/ethnicity resulted in expanding the analysis to include a comparison of Black to non-Black respondents including disaggregating by gender. Those results are included at the end of this section.
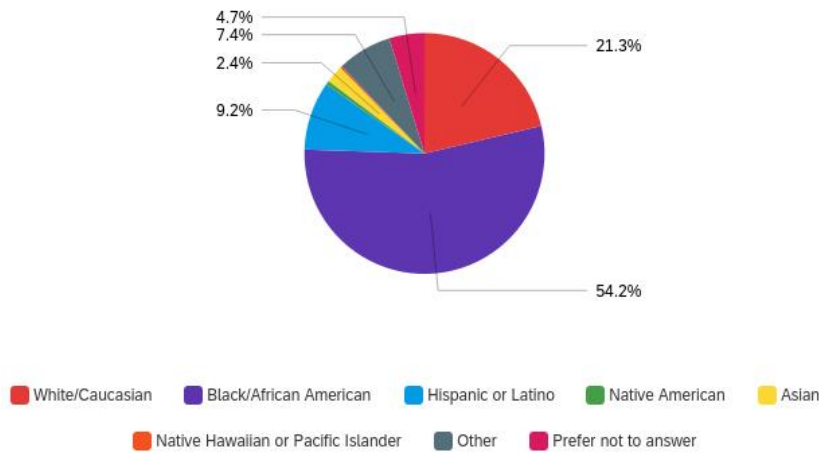
Figure 1. Total respondent demographics.

Recruitment of Black Aviation Professionals

One of the first questions posed targeted recruitment by identifying the age at which Black aviation professionals first became interested in aviation. The results (Figure 2) clearly show that the younger than 10 age group is the primary age (42%). A total of 77% reported becoming interested in aviation at the age of 20 or younger.
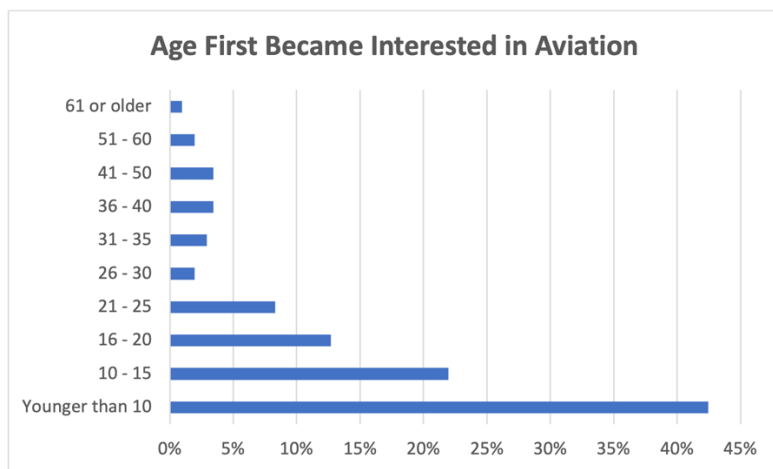

Figure 2. Age first became interested in aviation (Black respondents).

An additional question asked about participation in youth outreach programs. 39 percent of respondents did not participate in any such program, making this the most often selected response. Of those that did participate in youth programs, the most often indicated program was an OBAP program (24% participation). A further breakdown of participation rates in OBAP revealed that of the 24% who participated in an OBAP program, the most often attended program

was Aerospace Career Education (ACE) Academy followed by a career event, spring meeting, Aerospace Professionals in Schools (APIS) visit, Solo Flight Academy, and Girls LAUNCH.

Respondents were asked what social media outlets they use regularly. The question was included to identify potential outreach sources, but it is noted that the social media sources may also be useful for retention efforts. The results showed that the top five media sources (in rank order) used on a regular basis included Facebook, Instagram, YouTube, LinkedIn, and Twitter.

The primary question used to address research question one, was a Likert scale listing of 31 factors with the question "to what degree do you believe the following factors influenced your decision to pursue a career in the aviation industry". The full results are presented in Appendix A. The top five positive factors (Figure 3) included perceived as a fun profession, perceived as an adventurous profession, passion for aviation, perceived travel benefits, and perceived lifestyle.

Top 5 Factors: Positively Influenced the Decision to Pursue a Career in Aviation
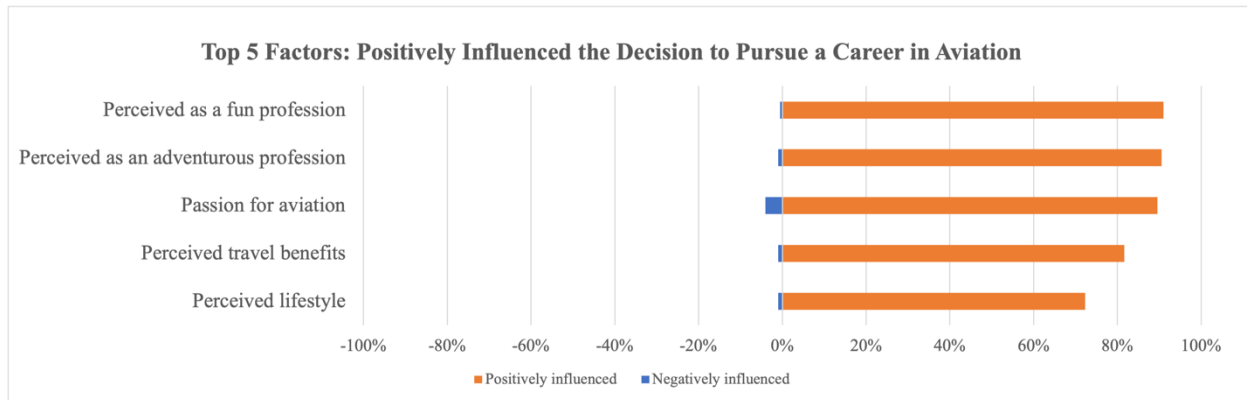
Figure 3. Top 5 positively influencing factors on decision to pursue a career (Black respondents).

The top five negative factors (Figure 4) included cost of required training/education, perceived existence of good ole boy network, perceived existence of bias, perceived family life impact, and high school counselor.

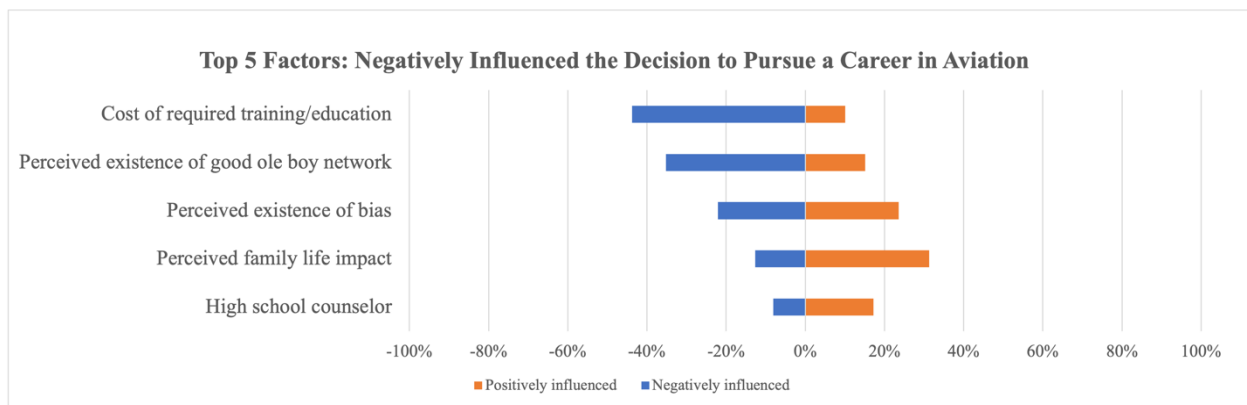

Top 5 Factors: Negatively Influenced the Decision to Pursue a Career in Aviation

Figure 4. Top 5 negatively influencing factors on decision to pursue a career (Black respondents).

Retention of Black Aviation Professionals

To explore retention amongst Black aviation professionals, the survey asked to what degree respondents had considered leaving the aviation industry. 72 percent indicated they had *not* considered leaving aviation. Only 8% indicated they strongly considered leaving and 19% indicated somewhat considered leaving. A follow up open-ended question was asked for those who did indicate they had considered leaving. The question asked for the primary reasons. The most often given reason, 25% of responses, related to workplace culture challenges. Comments in this category primarily included comments about racism, bias, sexism, and an overall lack of diversity. The next categories were nearly identical in number of responses (difference of 1 response) and included impact on family life and financial challenges including pay and pay equity concerns. Additional categories with fewer responses (13%) included the instability of the industry and lack of advancement opportunities.

To further explore the retention question, once again, a Likert scale question was used with a list of 26 factors with the question "to what degree do you believe the following factors influenced your decision to remain in your career in the aviation industry". Appendix B includes the full results. The top 5 factors that positively influenced retention (Figure 5) included passion for aviation, fun profession, adventurous profession, lifestyle, and travel benefits.
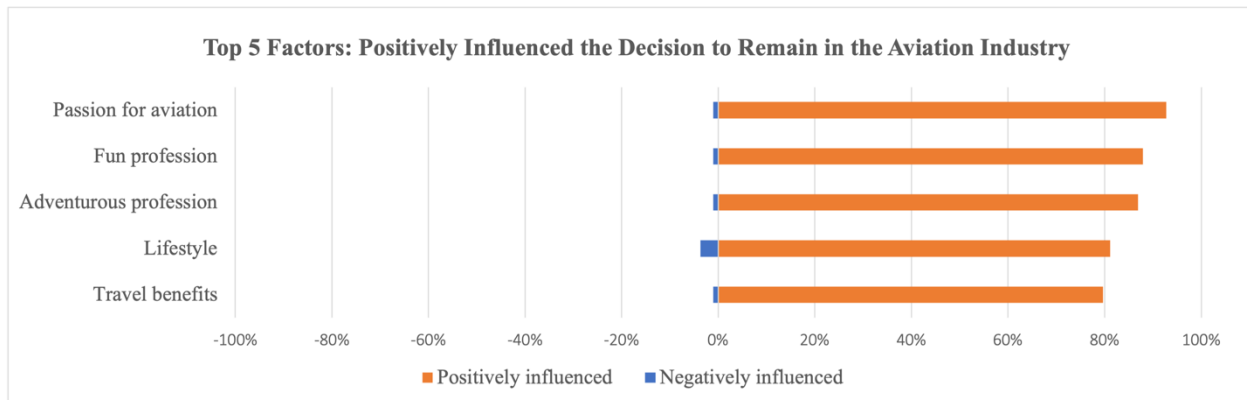

Figure 5. Top 5 positively influencing factors on decision to remain in aviation career (Black respondents).

The top 5 factors that negatively influenced retention (Figure 6) included existence of good ole boy network, cost of required training/education, bias in the workplace, family life impact, and pay equity between employees.
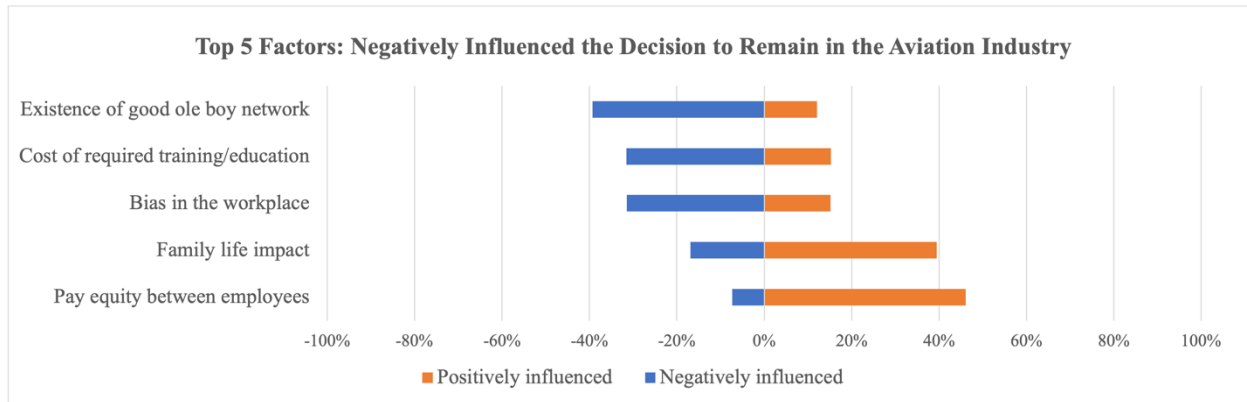
Figure 6. Top 5 negatively influencing factors on decision to remain in aviation career (Black respondents).

Barriers to Entry

An open-ended question was used to identify the respondents greatest challenge or barrier experienced in the pursuit of an aviation career. A total of 180 out of 206 respondents replied to this question. The top categories are presented in Figure 7. The most often noted challenge was financial (38% of responses), which primarily included cost of required training. The second most often noted challenge was the racism, bias, and sexism (19%) experienced by Black aviation professionals. Ability to navigate the career and training challenges tied for the third category. Ability to navigate the career primarily included struggles to gain information about pursuing a career in aviation and understanding the career pathway. Training challenges varied and included time management and finding a reliable flight school/instructor.

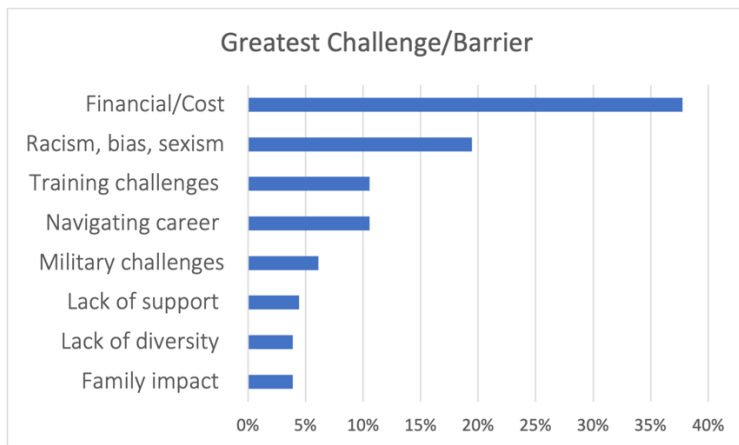*Figure 7*. Greatest challenge/barrier experienced in pursuit of aviation career (Black respondents).

Comparison of Identified Groups

As noted, the broad range of respondents' demographics allowed the researchers to explore additional parameters, comparisons of the influencing factors on retention and recruitment across different demographic groups. Tables 1 and 2 present detailed information of

the positive and negative factors. The highest ranked factor for each group is in bold. When it comes to pursuing a career in the aviation industry, passion is the most important positive factor for all respondents, while fun profession is the most important positive factor for Black respondents. On the other hand, cost of education is the most significant negative factor across all the groups. When it comes to remaining in the aviation industry, passion is the most important factor for all groups, while good ole boy network is the most significant negative factor for most groups and is higher for females.

Table 1. Top positive/negative factors that influenced the decision to pursue a career in the aviation industry

Factors	Subgroups	All	Black	All Male	Black Male	All Female	Black Female
Positively Influenced (% positive)	**Passion**	**89.3%**	89.5%	**91.9%**	90.1%	81.1%	87.2%
	Fun profession	89.2%	**91.0%**	91.2%	**90.8%**	**84.5%**	**91.5%**
	Adventurous profession	87.9%	90.5%	90.5%	90.2%	80.9%	91.3%
	Travel benefits	80.9%	81.6%	80.6%	79.7%	79.8%	87.2%
	Lifestyle	72.9%	72.3%	77.0%	73.4%	56.7%	68.1%
Negatively Influenced (% negative)	**Cost of education**	**47.5%**	**43.7%**	**44.1%**	**44.1%**	**47.7%**	**43.5%**
	Good ole boy network	34.0%	35.2%	30.5%	34.9%	40.9%	34.8%
	Family life impact	23.5%	22.1%	21.4%	10.6%	23.9%	19.6%
	Existence of bias	20.5%	12.6%	18.0%	21.7%	26.1%	23.9%

Table 2. Top positive/negative factors that influenced the decision to remain in the aviation industry

Factors	Subgroups	All	Black	All Male	Black Male	All Female	Black Female
Positively Influenced (% positive)	**Passion**	**91.7%**	**92.7%**	**92.9%**	**93.3%**	**90.5%**	**90.9%**
	Fun profession	87.6%	88.0%	90.3%	89.2%	83.1%	83.7%
	Adventurous profession	86.3%	86.9%	87.3%	87.2%	85.6%	86.1%
	Travel benefits	80.7%	79.7%	81.0%	79.9%	78.3%	79.1%
	Lifestyle	79.3%	81.5%	82.8%	82.6%	68.3%	76.2%
Negatively Influenced (% negative)	**Cost of education**	34.5%	31.6%	**32.2%**	31.1%	41.5%	33.3%
	Good ole boy network	**34.8%**	**39.3%**	30.9%	**37.2%**	**47.6%**	**46.5%**
	Family life impact	27.8%	31.4%	27.3%	16.9%	30.9%	16.7%
	Bias in the workplace	28.3%	16.8%	24.5%	29.1%	40.2%	39.5%

The authors further conducted chi-square tests for each survey question to see if different groups' answers had significant differences. Table 3 presents the summary results of the chi-square tests. First, Black respondents were compared with all other respondents. Role models from the same identified group, participation in OBAP, and family life impact are more important for Black respondents than for other respondents in terms of pursuing a career and remaining in aviation. Mentors and role models from the same identified group and cost of education are also more important to Black respondents in their decision to remain in aviation. Also, significantly higher percentages of Black respondents think the existence of the good ole boy network may negatively influence their decision to remain in aviation.

Black males were compared with all other male respondents. The results were similar to the first comparison, as there were more male respondents than females. In addition, the percentage of Black males, who consider leaving the aviation industry, is significantly lower than other male respondents.

Third, Black females were compared with all other female respondents. There were not many differences between the two groups. In terms of pursuing a career in the aviation industry, more Black females think aviation is an adventurous profession than other female respondents. In terms of remaining in the aviation industry, family life impact is also more important to Black females than to other female respondents and positively influences their decision to remain in aviation.

Black males were compared with Black females. Results showed that more Black males noted that they became interested in aviation when younger than 10, while more Black females noted that they are considering leaving the aviation industry. To Black males, early exposure to aviation as a child is a more important factor that affects their decision to pursue a career in aviation. However, more Black females think that pay equity between employees, opportunities for advancement, and bias in the workplace negatively influence their decision to remain in aviation.

Table 3. Results of the chi-square tests

Black vs. All Others		
Pursue a career in aviation	**Role model with whom I identify (same group/underrepresented group):**	Higher "positively influenced"
	Participation in OBAP	Higher "positively influenced"
	Perceived family life impact	Higher "positively influenced" Lower "negatively influenced"
Remain in aviation	**Role model with whom I identify (same group/underrepresented group)**	Higher "positively influenced"
	Mentor with whom I identify (same group/underrepresented group)	Higher "positively influenced"
	Participation in OBAP	Higher "positively influenced"
	Cost of required training/education	Higher "positively influenced" Lower "negatively influenced"
	Family life impact	Higher "positively influenced" Lower "negatively influenced"
	Existence of good ole boy network	Higher "negatively influenced"
Black Males vs. All Other Males		
Pursue a career in aviation	**Role model with whom I identify (same group/underrepresented group):**	Higher "positively influenced"
	Participation in OBAP	Higher "positively influenced"
	Perceived family life impact	Higher "positively influenced" Lower "negatively influenced"
Remain in aviation	**Role model with whom I identify (same group/underrepresented group)**	Higher "positively influenced"
	Mentor with whom I identify (same group/underrepresented group)	Higher "positively influenced"
	Participation in OBAP	Higher "positively influenced"
	Family life impact	Higher "positively influenced" Lower "negatively influenced"
Considering leaving the aviation industry		Lower than other men.
Black Females vs. All Other Females		
Pursue a career in aviation	**Perceived as an adventurous profession**	Higher "positively influenced"
	Family life impact	Higher "positively influenced" Lower "negatively influenced"
Black Males vs. Black Females		
At what age did you first become interested in aviation?		Male's "younger than 10" is higher.
Pursue a career in aviation	**Early exposure to aviation as a child**	Male's "positively influenced" is higher.
Remain in aviation	**Pay equity between employees**	Female's "positively influenced" is lower. Female's "negatively influenced" is higher.
	Opportunities for advancement	Female's "positively influenced" is lower. Female's "negatively influenced" is higher.
	Bias in the workplace	Female's "negatively influenced" is higher.
Considering leaving the aviation industry		Female's "somewhat considered" and "strongly considered" are higher.

Discussion

Research Question 1

Research question one focused on factors that influence recruitment of Black aviation professionals. It is clear that youth outreach is essential and must start at an early age. The critical age is under 10 and if not reached by the age of 20, the industry risks missing out on recruitment. The majority of respondents did not participate in youth outreach programs. This indicates an opportunity to expand youth outreach efforts. The OBAP programs had the highest participation rate (24%) of all programs listed, which is to be expected given the target group for the survey. The OBAP youth program participation rate is a reflection of the organizations success at implementing programs to engage members and potential members. The comparative results showed that early exposure to aviation and being introduced to aviation at an age younger than 10 had higher levels of influence for Black males than and it did for Black females. The authors suggest this is due to the lack of youth outreach and influences for young women (FAA, 2022) and recommend an increased emphasis on youth outreach for Black girls. Programs, such as OBAP Girls LAUNCH and Sisters of the Skies Girls Rock Wings are primary examples of such efforts.

The results show additional factors encouraging recruitment of Black aviation professionals include the overall appeal of the field including sense of fun, adventure, lifestyle, and travel. It is important to consider these variables when designing outreach. The primary barrier to recruitment, which was true for all groups, is cost of entry to include education and training. Cost of entry as an identified barrier supports the need for additional access to scholarships and financial aid opportunities. An additional key barrier is workplace culture to include bias, discrimination, racism, and sexism and the challenge to family life balance.

Research Question 2

Research question two focused on barriers for Black aviation professionals in the pursuit of an aviation career. The primary question used, the open-ended question, revealed themes consistent throughout the survey. The primary barriers include cost of entry, followed by experiences of racism, sexism, bias, and discrimination. An additional barrier was the challenge of navigating the career pathway. This included the struggle to "break in" to aviation and identify what opportunities exist. This result shows a need for enhanced career guidance not only through initial outreach but also career entry. One potential solution is also increased access to mentorship. The comparison data supports this by noting that mentors and role models from the same race/ethnicity group were more important to Black respondents versus non-Black respondents in their career pursuits. This also appears to support the literature on social isolation.

Some of the example responses from the open-ended question on "greatest challenge or barrier experienced" included the following.
- "My greatest challenge was finding support in my area of focus. Finding a mentor and finding my group for support. When you finally scale the wall and make it over, no one is there to meet/greet you, so you feel isolated until you find your group internally and externally. Once you do, there is no stopping how great the belonging is and can be."

- "The perception that because I was Black I didn't belong here."
- "I came into this game with no guidance. It would have been nice to be able to ask someone who looks like me questions."
- "Discrimination"
- "Racism, lack of support, funding"
- "Prejudice!"
- **"**Balancing work/home life."

Research Question 3

Research question three focused on factors that influence retention of Black aerospace professionals. The same top five positive variables for recruitment are reflected in retention showing the importance of the overall appeal of the field. It is important to note that on the negative factors influencing retention, the good ole boy network becomes the number one highest ranked negative factor on retention.

A relatively high number of respondents (72%) indicated they have not considered leaving aviation. In fact, data showed that Black males were less likely to consider leaving than non-Black males. However, the same cannot be said for Black women. Comparison data shows Black women are more likely to leave aviation than Black men due to higher negative influence of bias, lack of advancement, and pay equity. These results show the impact of intersectionality, being a "double only", on retention of Black women in aviation.

Conclusion

The overarching goal of this paper was to gain knowledge on the factors that influence the recruitment and retention of people who identify as Black into aviation careers and the challenges they experience in pursuit of said careers. The importance of youth outreach remains one of the salient strategies that must be leveraged more effectively and intentionally to recruit people identifying as Black to the aviation field. Specifically, exposure to aviation early-on in one's life (younger than 10) is paramount to showcasing the wonders of aviation and imparting the 'aviation bug' upon them. These youth outreach initiatives aid in creating a 'pipeline' that (Black) children and adults can flow through as they mature, beginning as early as grade school and continuing throughout high school. At the collegiate and career entry level, access to career guidance resources and the ability to connect with others in the industry they identify with (e.g., mentors), are identified areas of need. Consequently, the likelihood of individuals identifying as Black entering aviation once they are of age may be bolstered.

Survey results revealed that an essential factor for the recruitment and retention of Black aerospace professionals is addressing discrimination, racism, and sexism in the aviation workplace culture. Creating zero tolerance policies and education and awareness initiatives are steps towards a more inclusive culture. Results also showed unique challenges because of the intersectionality that exists between race and gender. Specifically, unique retention concerns for Black women reveal a need for additional focus on issues such as pay equity and advancement. Based on the findings, there has been insight gained on the factors and elucidation of the lived experiences of Black aerospace professionals, which provides pointed strategies for aviation

industry leadership to improve their recruitment and retention efforts with emphasis on the creation of an inclusive climate. Such recognition and acknowledgement can lead to the evolution of an organization's diversity and inclusion management as society and transportation continue to diversify.
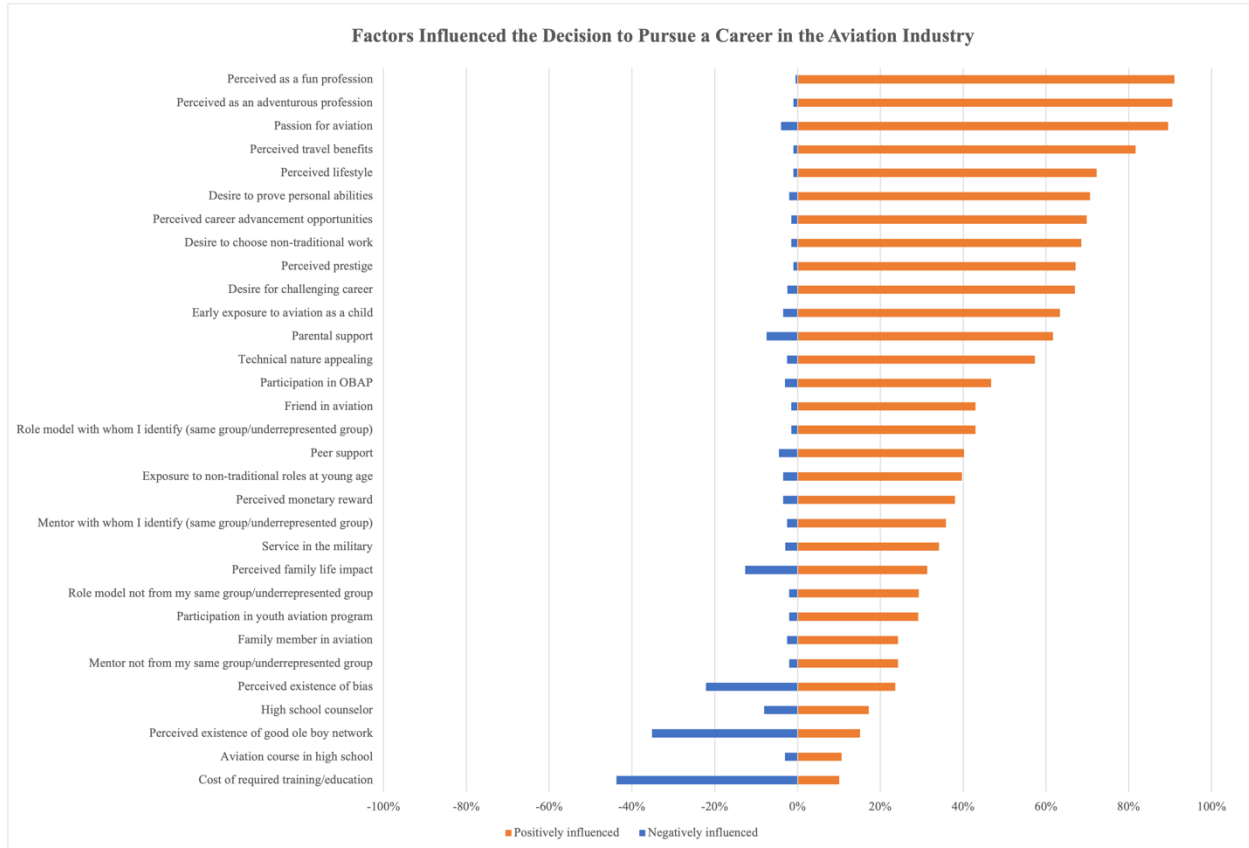
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Appendix A

Influence of factors on decision to pursue a career in aviation (Black respondents)

Factors Influenced the Decision to Pursue a Career in the Aviation Industry

Factor	Value
Perceived as a fun profession	
Perceived as an adventurous profession	
Passion for aviation	
Perceived travel benefits	
Perceived lifestyle	
Desire to prove personal abilities	
Perceived career advancement opportunities	
Desire to choose non-traditional work	
Perceived prestige	
Desire for challenging career	
Early exposure to aviation as a child	
Parental support	
Technical nature appealing	
Participation in OBAP	
Friend in aviation	
Role model with whom I identify (same group/underrepresented group)	
Peer support	
Exposure to non-traditional roles at young age	
Perceived monetary reward	
Mentor with whom I identify (same group/underrepresented group)	
Service in the military	
Perceived family life impact	
Role model not from my same group/underrepresented group	
Participation in youth aviation program	
Family member in aviation	
Mentor not from my same group/underrepresented group	
Perceived existence of bias	
High school counselor	
Perceived existence of good ole boy network	
Aviation course in high school	
Cost of required training/education	

-100% -80% -60% -40% -20% 0% 20% 40% 60% 80% 100%

■ Positively influenced   ■ Negatively influenced

Appendix B

Influence of factors on decision to remain in an aviation career (Black respondents)

Factors Influenced the Decision to Remain in the Aviation Industry