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Career Choice Motivation for Commercial Pilots

Brett Watts
Embry-Riddle Aeronautical University, wattsb@erau.edu

CAREER CHOICE MOTIVATION FOR COMMERCIAL PILOTS

By

Brett Michael Watts

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Degree of
Doctor of Philosophy in Aviation Business Administration

Tamilla Curtis, DBA.
Committee Chair

Scott Ambrose, DBA.
Committee Member

Hari Adhikari, Ph.D.
Doctoral Program Coordinator, College of Business

Timothy Holt, Ph.D.
Committee Member

Shanan Gibson, Ph.D.
Dean, College of Business

Margaret Klemm, Ph.D.
Committee Member (External)

Kelly M. Austin, Ph.D.
Senior Vice President for Academic Affairs & Provost

Date

ABSTRACT

Researcher: Brett Michael Watts

Title: Career Motivation for Commercial Pilots

Institution: Embry-Riddle Aeronautical University

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Career choice motivation research studies the factors involved during a person's decision-making process regarding which career to pursue (Skatova & Ferguson, 2014). These factors are often studied in individuals who have not yet entered the workforce, such as students. Although there is a significant amount of research on career choice motivations for doctors, dentists, and other related fields, research on career choice motivations for pilots is sparse.

As air traffic is expected to grow at approximately 4.7% per year for the next 20 years (Federal Aviation Administration, 2022), a key factor in the aviation industry's growth is the availability of pilots to operate the increased number of flights. Therefore, pilot training institutions need to find ways to attract students to become pilots and train in their programs to satisfy the demand for qualified pilots.

This study aimed to identify the key motivational factors of current flight training students to better understand how individuals are motivated to pursue a career in aviation. The theoretical framework used in this study is based on self-determination theory (SDT), as originally introduced by Deci and Ryan (2000). The central foundation of SDT is that humans are motivated by intrinsic and extrinsic factors. These factors can be

classified into one of three types of motivation: autonomy, competence, or relatedness. Further application of SDT breaks career motivation down into three potential sources of career choice motivation: influence, job rewards, or status.

Cultural background was another key area of focus for this study as data was collected from two different populations of students: American and foreign. The purpose of adopting this cross-cultural approach was to identify whether students from different nations are led to a career in aviation by different key motivational factors.

This study implemented a semi-structured interview research approach where students were asked eight questions on foundational sources of career motivation designed to categorize their responses into the theoretical framework of SDT. The responses from the participants were then analyzed using NVivo, which aids in identifying common themes among verbal qualitative response data.

Twenty interviews were conducted with 10 American and 10 foreign students. The foreign participants originated from Myanmar, Taiwan, South Korea, Germany, Zimbabwe, France, Malaysia, and Qatar. Each participant was asked eight questions, which they could answer in any way they wanted. The questions aimed to better understand how each participant became interested in the industry, took their initial steps toward pursuing the career field, and what sources of motivation affected their decision. Finally, the students were asked about the effect of COVID-19 on their motivation to become commercial pilots.

The results showed that both populations were affected by similar sources of motivation but with different emphases on them. They were highly motivated by the influence of other individuals in the industry and the job rewards of being pilots.

However, the pipeline process between the two populations varied greatly: most of the American participants had access to training opportunities before going to college, while the foreign participants did not. Furthermore, the results indicated that a majority of the participants showed little amotivation resulting from COVID-19. In fact, half of the studied population experienced a positive impact on motivation.

Keywords: Career choice, motivation, pilot, flight training

DEDICATION

To my wife: Thank you for your constant patience, your willingness to always pick up my slack, and for being the keystone of our family.

To my children: You can do great things. If something is hard, there is a good chance you are on the right path. Endure.

To my family and friends: Thank you for consistently believing in me, for pushing me to be better, and for stepping in when help is needed.

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CHAPTER I

INTRODUCTION

"The pilot shortage could become a permanent feature of the airline industry… It is basic math. If there aren't enough trained pilots, customers suffer from loss of service and high-ticket prices "

- Mesa Airlines CEO Jonathan Ornstein (Murphy, 2022)

Global air traffic is expected to grow between 3.2% to 5.3% per year for the next 20 years (IATA, 2020), and the aviation industry relies on qualified personnel to operate expensive and dangerous equipment. Thus, as the applications of aviation become increasingly popular, the need for qualified pilots also increases. However, the current certification of pilots does not meet this increased demand. The estimated figures reflecting the demand for new pilots vary, with CAE (2020) estimating that 260,000 new pilots will be needed between 2020 and 2029. This figure represents both the replacement of existing pilots, as well as a significant increase in the total number of pilots, needed. In 2019, 387,000 pilots were needed, and it is projected that 484,000 will be needed in 2029. The Bureau of Labor Statistics (2021) forecasted that companies will seek to hire 18,100 new pilots annually between 2021 and 2031, which will amount to a total of 181,000 new pilots. While experts disagree on whether there is currently a shortage of pilots, it is evident that a robust pipeline is necessary to meet the demand for qualified pilots in the global aviation industry in the future. Therefore, the question of how to motivate young people to pursue aviation careers to meet this demand is becoming increasingly relevant (Wood, 2022).

Within the United States, the military is also competing for pilots from the same pool of candidates interested in pursuing careers in aviation. Metsker (2019) discussed how those interested in becoming pilots must decide whether to consider military service as an option for entering the career field. The major advantage the military can offer a prospective candidate is financial sponsorship of flight training in exchange for a service commitment. However, personnel retention is a challenge for the military because trained pilots often serve only their required commitment time before leaving for higher-paying jobs in the commercial airline industry. Those interested in becoming pilots may also choose to train at civilian flight training organizations or universities. However, this route typically requires candidates to secure their funding for flight training, which is often a significant challenge. With both the military and civilian organizations competing for the same candidates, training institutions need to fully understand why individuals want to become pilots so they can employ suitable methods to target candidates effectively. By ensuring that the pilot training pipeline is consistently filled with candidates, air service operators can continue to grow and meet the increasing global demand for air travel.

The global nature of aviation requires a cultural approach to understand the career motivation factors that potential candidates may face when considering the pilot career path. However, “culture” is a term with many different definitions and perspectives. In this study, the term “culture” is defined as “an amalgamation of potentially related and relatively durable societal characteristics that describe an identifiable human population, such as a nation or ethnic group” (Minkov, 2013). More specifically, in the current study, culture is determined at the national level, with the unit of analysis set as U.S. students versus foreign students. Psychologists have long recognized the contrast principle: we

gain greater clarity through making comparisons (Cialdini, 2007). As such, the aggregated responses of U.S. students can be better understood through the lens of their comparison to the aggregated responses of foreign students.

The global aviation industry is expected to grow significantly over the next decade, particularly in developing nations. The International Civil Aviation Organization (ICAO) predicts that the total global passenger traffic will increase by 4.3% per year until 2030, with traffic in the Asian region growing at a rate of 7.2% per year until 2030 (ICAO, 2021). Although global growth is significant, the increased growth rate in some developing regions will exacerbate the need for pilots from various cultural backgrounds. Therefore, this study aims to identify key motivational themes that drive individuals from diverse cultural backgrounds to pursue careers as professional pilots. The study employed qualitative semi-structured interviews with questions designed to highlight motivational sources based on SDT. The population studied includes students from several countries to gain a better understanding of how culture influences career choice motivation for aspiring professional pilots.

Career motivation research has a rich history. London (1983) defined the domain as a "set of individual characteristics and associated career decisions and behaviors that reflect the person's career identity, insight into factors affecting his or her career, and resilience in the face of unfavorable career conditions." Career motivation research has been conducted in a variety of fields, such as medicine (Pagnin, et al., 2013), athletics (Albion & Fogarty, 2005), and education (Bastick, 1999). However, scholarly research conducted specifically on the sources of motivation in the piloting career field is sparse, especially from a cultural comparison approach. Cross-cultural comparison will provide

additional insight into the motivation factors of individuals from various backgrounds who may or may not have had the same access to the aviation industry as those raised in the United States.

Some studies posing similar questions to this research have been conducted. However, they vary in terms of the specific area of the industry, or the candidate pool studied. Hence, this research is unique in its aim to identify the key motivational themes of individuals across multiple cultures pursuing the pilot career path in the aviation industry.

This study contributes to the understanding of different areas of inquiry for practitioners and academics. The first is the aviation industry itself. With the increasing demand for air travel worldwide, industry leaders need to better understand the fundamental motivational factors that individuals analyze when considering the pilot career path. Additionally, this study aims to assist businesses involved in training foreign pilots, as the current business model of American flight schools relies on a steady stream of individuals from other countries becoming the industry's next commercial pilots.

The second area of inquiry this study contributes to is how motivation to pursue aviation careers develops in individuals from countries outside the United States. This study provides a baseline understanding of the key motivational factors in making a career choice, with a particular focus on how the country of origin and culture affect both the career choice motivational factors and the process candidates from a foreign country follow to pursue the pilot career path.

Finally, this study will address the effect of a major world crisis on career motivation, as measured by the reactions of the participants to the COVID-19 pandemic.

The pandemic had a significant effect on the aviation industry's health. With the long training lead times to get pilots fully qualified to fly for commercial airlines, the negative effects of the pandemic may have a corresponding trickle-down effect on career choice motivation.

Before the outbreak of COVID-19, global air traffic had grown yearly by an average of 5.7% for the previous 10 years (Statista, 2020). However, with the onset of the global pandemic, the aviation industry suffered dramatic consequences. Specifically, in 2020, the aviation industry saw 2.893 billion fewer passengers than in 2019, which equated to a total aviation industry deficit of $391 billion USD globally (ICAO, 2021). As a result, the pilot shortage was seemingly temporarily solved: fewer pilots were needed to meet air travel demand. In response, the commercial aviation industry offered retirement incentives to senior pilots, a cost-cutting measure aimed at reducing overhead quickly. This reaction to the pandemic caused the early retirement of more than 3,000 pilots (Hardee, 2023). Since then, however, the industry has reversed its course and is now looking to allow pilots to work until an older age. By 2022, airlines were once again on a hiring spree to bring on thousands of new pilots (Britton, 2022). This back-and-forth management of pilot recruitment may have future repercussions as the current wave of new hires look to retire at a similar time in the future as their predecessors.

Throughout 2022, airlines struggled to return to pre-pandemic passenger levels. However, the ICAO has forecasted that air passenger demand will rapidly recover throughout 2023 to pre-pandemic levels, with the 2019 passenger traffic growth projections being back on track by the end of 2023 (ICAO, 2023). This progressive

rebound positively indicates that the aviation industry is in full recovery, and the flight training industry is ramping up to meet the training demands of the post-pandemic world.

Flight schools in the United States have reported post-pandemic enrollments, suggesting that the industry is in recovery. In a 2021 article, Flight Global reported that Embry-Riddle Aeronautical University's (ERAU) flight program is at full capacity, training approximately 1,200 students at any given time (Hemmerdinger, 2021). Many past industry downturns had significant effects on the incoming stream of student pilots, but the COVID-19 pandemic did not slow the stream of student pilots to many flight schools. Furthermore, by 2022, ERAU reported that their capacity would be increased while also reporting the highest number of enrollments in the university's flight training program in the history of the institution (Cavaliere, 2021) (McMillin, 2022).

Although COVID-19 had a significant impact on the aviation industry, the aircraft pilot career is still in high demand, and the negative effects of the pandemic will be overcome in the near future. Therefore, this study will focus on the demand for pilots in the post-COVID-19 period. However, in an attempt to understand the effects of COVID-19, this study will include the aspect of amotivation, or the reduction in motivation, of student pilots as related to the effect of the cyclical nature of the industry, particularly in relation to the pandemic.

The dramatic increase in the demand for air travel, matched with the capability of the aviation industry to meet it, has created the need for a study to be conducted to better understand why individuals choose to become pilots. Identifying the key career choice motivation factors that individuals analyze and consider when pursuing the pilot career path will provide an approach to solving the pilot supply and demand problem. In

addition, the results of this study will provide academics with a better understanding of career choice motivation, its application to aviation, the effect of culture, and the impact of a major world crisis.

CHAPTER II

REVIEW OF THE RELEVANT LITERATURE

This chapter will provide a review of the literature in the fields of related theory, career choice motivation, and aviation-related motivation. The pilot training industry dates back to 1910 when Orville and Wilbur Wright introduced the world's first flight school (Ennels, 2007). By 1912, the fledgling aviation industry had begun to grasp the attention of the United States military, which would become the primary source of most flight training activities through the end of World War I (Cameron, 1999). While early American aviation training programs typically involved the military, civilian pilot careers began to gain traction with the introduction of the Kelly Act and the Watres Act in 1925, which brought the airline industry into existence and opened up the piloting career field to more people around the United States (National Research Council, 1997).

The flight training industry has experienced dramatic periods of growth. For example, in 2010, there were 119,119 student pilots in the United States. By 2019, that number had grown by 40% to 197,665 student pilots (Federal Aviation Administration, 2019). Moreover, despite the significant impact of COVID-19 on the industry, the number of student pilots increased by 12% in 2020, reaching a total of 222,600 in 2020 (Statista, 2022).

Overseas, there is also an increase in demand for pilots and the number of students in pilot training. The United States is a flight training hub for students from all over the world due to its wide open airspace, active general aviation industry, and wide variety of flight training organizations to choose from. Students from countries with fewer flight training opportunities often come to the United States to train to be pilots.

For example, as of 2019, China only had 12 accredited flight schools nationwide, which spurred intensive demand for the training of Chinese pilots in overseas facilities (Myers, 2019). Chinese students began regularly training in flight schools in the United States and Australia. This also allowed the students to work on their English language skills, a requirement for international flying pilots. This growth in demand for pilot training from both domestic American students, as well as international foreign students, caused a boom in the training industry and the number of flight training schools and spurred forecasts suggesting the flight training industry would grow by 12.43% between 2020 and 2025 (Report Linker, 2020).

Theoretical Foundation

Many theories on human motivation exist. Research has been conducted on a variety of motivation-related topics, such as goal setting, self-efficacy, educational achievement, and career choice and planning, among others. This study focuses on career choice motivation and applies theories developed in past literature to provide a foundation upon which to build this study. Before introducing the chosen theory for this research, a short synopsis of other related theories will be provided.

Motivation has been a subject of interest among researchers for many decades, with many foundational and widely accepted theories pertaining to it. Maslow's Hierarchy of Needs theory (1954) categorizes human needs into five basic groups: physiological, safety, belongingness, esteem, and self-actualization. This organization of human needs became a very popular method for researchers to classify motivation as it relates to human needs. Later, researchers further broke down human needs into eight categories ordered from the most basic to the most aspirational: physiological,

safety/security, belongingness, esteem, cognitive, aesthetic, self-actualization, and self-transcendence (Huitt, 2007). In basic terms, Maslow believed that the higher up the hierarchy of needs a person rises, the more content they become.

A major theory of motivation is McClelland's Need Theory (1987). This theory proposes that a person's source of motivation stems from their need for affiliation, achievement, or power (Serhat, 2021). McClelland (1987) suggested that a person's motivation, decisions, choices, and even health can be directly attributed to how these three needs manifest themselves in their life. This foundational theory, like Maslow's, seeks to organize needs and, therefore, motivation into clear categories. This type of categorization is key to this study as it allows the researcher to uncover core sources of motivation and is critical to understanding the decision process undertaken when choosing a career path.

Another foundational theory related to this study is Competence Motivation Theory, which suggests that people make decisions in their lives and are drawn to participate in activities that make them feel that competent or successful (White, 1959). Competence Motivation Theory may help this research further identify how prospective pilots become interested in the piloting career field and the effect of perceived success in the field.

While many aspects of the motivation theories mentioned above apply to this research, this study primarily builds upon the work of Ryan and Deci (2000) in SDT. While many theories relate to how humans are motivated, SDT was developed in a way that allows motivational sources to be broken up into subcategories and sources of motivation.

Self-determination theory gained considerable recognition in the 1980s and has been used as the foundation for research on motivation since then (Flink, Boggiano, & Barrett, 1990; Austin & Vancouver, 1996; Brown, Ryan, & Creswell, 2007). Self-determination theory is based on empirical data that focuses on human motivation and the different types of motivation a person may have, rather than just the strength of their motivation (Deci & Ryan, 2008). The theory is defined as a theory of human motivation and personality that suggests that people can become self-determined when their needs for autonomy, competence, and relatedness are fulfilled (Lopez-Garrido, 2021). The core tenets of SDT are the three primary feelings a person experiences during the motivation process:

- Autonomy: The feeling of willingness, choice, or volition when making decisions and acting.
- Competence: The feeling of being effective and confident in behavior and goals.
- Relatedness: The need to be accepted and significant to others and to feel care toward and from the surrounding people. (Deci & Ryan, 2014)

Self-determination theory presents these three human needs as the primary sources of motivation that guide individuals through the decision-making process in everyday life. Furthermore, these basic needs are believed to be the key sources of motivation and decision variables for individuals making major decisions in their lives, such as choosing a career path.

Self-determination theory was initially introduced as a deep look into intrinsic motivation, or the idea of wanting to do something for the personal enjoyment and

satisfaction of doing it (Gagne, 2014). Gagne (2014) explained how the theory was taken a step further by looking into how individuals would respond to being rewarded for doing tasks that they would have willingly done without external rewards. Thus, rather than focusing solely on internal sources of motivation, three extrinsic sources of motivation, which can change people's motivation to engage in an activity due to positive or negative motivational inputs from external sources, were also considered (Gagne, 2014). Gagne (2014) also identified that while the source of motivation could be either internally or externally based, the reasons for being motivated by those sources fell into categories: autonomy, competence, and relatedness. The evolution of this theory took several decades, and is arguably still incomplete, with many researchers, including Ryan and Deci, still refining and adding to the understanding of SDT and its applications to daily life.

A follow-up study looked at the application of SDT to work motivation (Gagne & Deci, 2005). This study provided a comparison between SDT in work motivation and past theories that involve extrinsic and intrinsic human motivation (Gagne & Deci, 2005). The research addressed how SDT differs from past theories, including those of Maslow, Herzberg, and Alderfer by providing researchers with a theory that incorporates a more comprehensive examination of the different types of extrinsic motivation factors a person may have in a work environment, leading to a fuller and more useful approach to understanding organizational behavior in a workplace (Gagne & Deci, 2005).

Another study on the application of SDT conducted research into the motivation of athletes (Lonsdale, Hodge, & Rose, 2009). Studies on how athletes become successful have been conducted profusely, many with a focus on how the athlete's motivation and

determination for success led to greater results in their respective sports. Lonsdale et al. (2009) found that SDT has practical application in explaining athlete burnout. In particular, the researchers found that the respondents who were identified as more self-determined were less susceptible to burnout when compared to those who were less self-determined (Lonsdale et al., 2009). The researchers found that autonomy and competence varied significantly between athletes experiencing burnout and those who were not (Lonsdale et al., 2009). Lonsdale et al.'s (2009) findings are critical to the present study as they can be related to how the students seeking to become pilots were motivated to not only be interested in pursuing aviation in the first place but also to avoid amotivation or the lack of motivation in the face of adversity.

Self-determination theory will provide the theoretical foundation for the current research, while a scale developed by Angel (2017) on the motivating factors for a career choice in nursing will be used to further apply the theory. The Nursing Motivation Measure (Angel, 2017) used SDT and its identified types of motivation (autonomy, competence, and relatedness) to further break down the origin of motivation into three potential types of sources:

- The influence of others could include sources of motivation such as parental expectations and the influence of friends or role models.
- Status refers to the internal positive gain a person gets from external forces and the admiration or positive perception of the person's respective field.
- Job rewards, which are the direct positive effects of holding the position, such as salary, benefits, or stability.

These three subscale categories help to break down potential sources of motivation into three measurable origins, thus allowing for the grouping of interview data into separate categories of motivation sources and, consequently, clear comparisons when analyzing motivation between different populations. By employing this scale, this research will be able to rank which of the three sources of motivation most affected the participants, thus creating a quantitative dataset and allowing for comparative statistics.

The following sources and constructs were developed for use in this study from the theoretical and scale development literature.

Table 1

Theoretical Sources and Constructs

Theoretical Source	**Construct**	**Definition**
Extrinsic	Influence	External experiences or factors that caused the subject to become interested and motivated towards pursuing a specific career (Angel, 2017; Ryan & Deci, 2000).
Extrinsic	Job Rewards	Motivating factors stemming from the external rewards of a job, such as earning potential (Angel, 2017; Ryan & Deci, 2000).
Extrinsic	Status	Motivating factors stemming from external perception, such as prestige or career respect from others (Angel, 2017; Ryan & Deci, 2000).
Intrinsic	Job Rewards	Motivating factors that are a result of internal rewards gained from being associated with the career, such as a sense of accomplishment (Angel, 2017; Ryan & Deci, 2000).
Intrinsic	Status	Motivating factors stemming from an internal desire to increase status (Angel, 2017; Ryan & Deci, 2000).
Both	Amotivation	For the purpose of this study, crises such as pandemics are investigated as amotivation factors.

Career Choice Motivation

Career choice motivation refers to the underlying motivational themes and reasons that lead a person to choose a particular career. The decision-making process is complex, and individuals often need to consider various factors before making an informed decision. This section reviews past research on the career choice motivation process and how it relates to career choice motivation in aviation.

This study builds upon the topic and applies the scale developed by Angel (2017) to investigate the aviation industry. In Angel's study, the career choice motivation of nursing students was measured and analyzed to identify key motivational themes. Angel (2017) aimed to develop a new and concise categorization of career choice development factors and proposed three categories: influence, job rewards, and status. The study's primary goal was to determine whether it was possible to build upon many theories of motivation while also emphasizing cultural background (Angel, 2017). By employing the use of a questionnaire given to a total of 486 students, Angel (2017) validated that the developed scale provided a robust and unique approach to analyzing career choice motivation data from a culturally diverse population. The study revealed that job rewards were the most important career choice development factor category in the studied population, while influence was the least important.

In contrast to Angel's (2017) findings, Lambert (2018) conducted research on the key motivational themes among young Hispanic women choosing careers in science, technology, engineering, and mathematics (STEM) fields. Lambert (2018) interviewed two focus groups with multiple participants per group and conducted seven individual one-on-one interviews. The findings differed greatly from that of Angel's (2017) in that

the primary motivational theme observed was the women's family members, rather than the specific job rewards of a STEM career (Lambert, 2018). This may have been a result of the women's age or the generality of the field studied. However, the results do show that different groups of people will yield different primary themes of motivation, even if the industries being studied are similar. Lambert's (2018) research indicates that cultural background may affect how a person is motivated to participate in an activity.

The effect of culture on an individual's career choice motivation was also questioned and researched in an article by Fischer and Griggs (1995). Using data collected from 20 interviews, the researchers found that role models played a significant role in the career choice process of young African American and Latino undergraduates (Fischer & Griggs, 1995). The study also noted that critical experiences or events greatly affected individuals when they decided on which ultimate career path to take (Fischer & Griggs, 1995). As these young African American and Latino students went through the career choice process, they were highly motivated and influenced by external factors, such as role models and pivotal events (Fischer & Griggs, 1995).

Taimalu et al. (2021) also conducted research comparing career choice motivation between two groups of respondents from different countries. The researchers collected survey responses from 718 Estonian and 322 Finnish student teachers in training (Taimalu et al., 2021). The results showed that the students from Estonia showed higher levels of motivation stemming from satisfaction with choice, status, and salary than the students from Finland (Taimalu et al., 2021). These results indicate that even individuals from neighboring nations with similar cultures may be motivated by different factors when choosing a career field.

Kwa and Kim's (2022) study revealed the importance of influence on career choice motivation by interviewing 30 public school student teachers entering the profession of teaching humanities and social studies. The students described how past experiences with teachers who had taught them or experiences where they had had the opportunity to teach others were major factors in their decision to pursue teaching as a career (Kwa & Kim, 2022). Kwa and Kim (2022) also described how the students experienced motivation arising from sources other than influence. However, over time, the influence source of motivation built up and provided the students with the foundation needed to actively pursue their careers (Kwa & Kim, 2022).

Ferry et al. (2000) also researched the motivational theme of being highly influenced by surrounding people, such as mentors or family members. In a study published in the *Journal of Vocational Behavior*, the research team sought to answer the research question "What are the effects of family context and personal input variables on learning experiences, self-efficacy, outcome expectancies, interests, and goals?". Data collected from a questionnaire sent to 791 individuals showed that parental encouragement led to higher grades in math and science fields. Better grades in math and science would ultimately lead to greater opportunities and wider options when the individuals eventually make career choice decisions. Interestingly, their findings indicate that the input (parental encouragement) was not directly related to the career choice of the individuals. Rather, parental encouragement had a greater impact further along in the pipeline process: the source of motivation would manifest later.

The key sources of motivation behind an individual's career choice can stem from various factors, such as interest, pay, convenience, etc. In some cases, the motivation can

be traced back to familial expectations, support, or exposure. In other cases, the motivation can stem from personal or practical reasons. By studying the differences in career choice motivation between doctors and dentists, Crossley and Mubarik (2002) showed how individuals in similar fields can have two different primary sources of motivation. From the data collected through a questionnaire answered by 80 dental and 80 medical students attending the same university, it was found that, on average, doctors were highly motivated to pursue the career due to personal beliefs and reasons, such as altruism and the "challenge" of the field (Crossley & Mubarik, 2002). Dentists, however, had a much more pragmatic and practical primary theme of motivation: financial gain (Crossley & Mubarik, 2002). The research findings indicate that even individuals interested in similar fields may be motivated toward a specific area of that field, thus differentiating them from others in that same field.

To better understand job rewards, Kyriacou and Coulthard (2010) researched a group of students' interest in considering teaching as a profession. By interpreting the data collected through a questionnaire answered by 298 students, the findings showed that both students who would consider teaching and those who would not consider teaching still rated "a job that I find enjoyable" as the most critical reason to choose a career field (Kyriacou & Coulthard, 2010). However, the students who indicated that they would consider teaching as a career were more interested in the non-teaching aspects of a teacher's role, such as "a job in which I can contribute to society" and "job mobility," and indicated that those aspects were highly important when choosing which career to pursue after their studies (Kyriacou & Coulthard, 2010). This indicates that individuals can be

motivated to choose a career not only because of what the career does but also because of how it affects their lifestyle.

In another study investigating lifestyle design as a primary factor in career choice, Feldman and Bolino (2000) aimed to answer the question of the primary career anchors, or primary motivation themes, of those who have chosen to be self-employed or small business owners. The data collected from 153 self-employed individuals and small business owners' survey responses showed that the top three reasons they decided to be self-employed or own small businesses were "greater control over my life," "use my skills and abilities," and "live where/how I like" (Feldman & Bolino, 2000). All three of these top responses have a direct relation to autonomy and personal life design. In particular, the first and third top responses focus specifically on lifestyle design and the effect of a job's suitability on an individual's personal life. This may relate to those choosing to pursue a career in aviation, as the lifestyle of a pilot is unique and may or may not suit the personal lifestyle of the current study's participants.

Expectations and the perpetuation of gender, as it relates to career choice motivation, were researched by Sim-Sim et al. (2022). In a study surveying 74 midwifery students, it was found that gender and ancestral ties contributed to commitment to the profession (Sim-Sim et al., 2022). Furthermore, it was found that the pride gained from job competence and care perpetuation was linked to gender. These findings show that in some cases, career choice motivation can be linked back to the expectations an individual feels are upon them due to their background or gender.

Amotivation, or the lack of motivation when it comes to choosing a career, is another area of inquiry in this research. In a study aimed at better identifying why people

burn out while training for their chosen careers, Pagnin et al. (2013; Shin, Rachmatullah, Roshayanti, Ha, & Jun-Ki, 2018) found that the primary motivational factors for medical students' pursuit of careers in medicine were intellectual curiosity, professional autonomy, altruism, and interest in human relationships. These core themes were highly correlated with many of the 277 students questioned in the study (Pagnin et al., 2013). However, they also found that many of the students were motivated to pursue the career by emotional reasons, such as experience with a sick family member or personal interaction with a doctor who helped them. The researchers found that for these types of students, burnout or amotivation was much more present as the students were emotionally and personally invested in the career field. These findings might be relevant to the aviation industry as many people choose to be pilots because their family members or other people they respect were also pilots.

Career Choice Motivation in Aviation

There is very limited research about career choice motivation in the aviation industry, with essentially no analysis of the effect of different cultures on it. However, some studies on related topics have been conducted. This section will introduce past studies that have researched career choice motivation in the aviation industry.

Nikle (2019) conducted a study aimed at identifying when individuals from one career field switch to the aircraft pilot career field. The study used a mixed methods approach to collect survey data from pilot trainees who recently transitioned from a different career field (Nikle, 2019). The results showed that the primary motivations behind these individuals changing careers were to increase their self-fulfillment, obtain better compensation, and reduce the dissatisfaction they experienced in their previous

career field (Nikle, 2019). The topic of this study is similar but different from that of the current study in that Nikle's (2019) respondents had already trained for an initial field and then decided to change careers. While this is related to career choice motivation, it may produce different results due to the participants experiencing dissatisfaction with a previous career.

One area of related research is program choice for individuals looking to enroll in aviation higher education programs. This topic is related to career choice motivation in that it seeks to identify the factors that make students choose a particular aviation program. However, this research differs from aviation career choice motivation in that many of the identified factors have to do with the features of the institution and not the motivation to enter the program at the onset.

Clark (2004) sought to identify the factors involved in choosing a program for incoming aviation students. By surveying students from 23 different programs, Clark (2004) found that primary decision factors included quality of education, location, class size, university reputation, quality of equipment, student-to-faculty ratio, program characteristics, and the distance of the university to the students' homes. These findings are relevant to career choice motivation because the students were choosing an educational program that would lead them toward a future career, essentially making the program choice the first step in career choice.

In a separate study, Allen and Barnhart (2006) sought to identify the influencing factors for the degree selection of aviation majors at a large university. The researchers developed a survey that was designed to identify student motivation for aviation programs (Allen & Barnhart, 2006). The 95 responses received showed that students

were primarily motivated to choose the aviation major at the university because they had aviation-related experience, such as having flown in an airplane, visited an airport, or watched an aviation-related movie (Allen & Barnhart, 2006).

The findings from both Clark's (2004) and Allen and Barnhart's (2006) studies demonstrated that the students were making informed decisions about their education programs based on past experiences with aviation. The features and characteristics of the program are motivational factors further down the decision chain than the original motivational factor of being interested in the career in the first place. However, as seen in Allen and Barnhart's (2006) study, the students did revert to their original experiences of the aviation industry when faced with the decision of choosing their aviation degree programs.

Gagliardo (2020) sought to answer the question of how educational and social experiences sparked young females' interest in pursuing a career in aviation. This study conducted interviews with 11 female airline pilots to identify how female pilots were initially introduced to the career field (Gagliardo, 2020). The findings demonstrated that aviation-based events, relevant extracurricular activities, or friends and family were the primary reasons the interviewees chose a career in aviation (Gagliardo, 2020). The interviewees also reported significant influence from parents, teachers, other aviators, and the media. Prior to Gagliardo's (2020) study, Zoltsky and Beckman (2011) conducted a study to identify the motivational factors for women joining the aviation industry. Their findings explained that women were significantly influenced by parents and other significant adults to pursue aviation as a career (Zoltsky & Beckman, 2011). Furthermore, in an attempt to identify a strategy for solving the pilot shortages, Opengart

and Ison (2016) suggested that methodically recruiting women would alleviate the shortage and provide more diversity in the field. In their study, the researchers identified that women respondents valued the need to be supportive of each other, the need for parental and family encouragement, and the desire for challenge and excitement as key areas of importance for women when choosing a career (Opengart & Ison, 2016). These articles focusing on the motivations for females to work in the aviation industry provide useful insight into how different groups of people in society consider different key motivational factors when choosing a career in aviation.

Meanwhile, Ateş (2016) sought to identify the career starting points of Turkish students enrolled in aviation programs. By interpreting survey data collected from 10,800 students, it was found that Turkish students enrolled in aviation programs chose the career field due to familial expectations and the acceptable status of having a job in aviation (Ateş, 2016). This topic is closely related to that of the current study, but it does not compare how this characteristic of career choice in Turkey compares to other cultures and groups of students. Nevertheless, the findings provide useful insight into possible motivational themes that may be present within a global representation of students. The primary deficiency of this study is that it only focuses on students from Turkey. If the researcher had also surveyed students in Turkey who originated from a different country, it may have been found that status and familial expectations were not the primary motivational factors of all the students enrolled in the program.

Pendergrass (2008) studied the relationship between the reasons for undertaking an educational program focused on the aviation industry (pilots and mechanics) and the ultimate success of the student in that program. Interviews were conducted with 57

students enrolled in aviation programs (Pendergrass, 2008). The results of the study indicated that students who had started their educational program well-informed about the industry and had previously been introduced to aviation were much more likely to succeed in their training than those who had not (Pendergrass, 2008). Pendergrass (2008) sought out key motivational themes and took the research a step further by analyzing how those themes affected success. However, Pendergrass' study did not take into account culture and the effect of cultural diversity on the motivational reasons for choosing the career field.

Gibb et al. (1986) developed an inventory of possible reasons for a naval aviator choosing to either stay in the career field or leave it. The development of this inventory was initiated by a sharp decline in the number of naval aviators staying in the career field through to retirement (Gibb et al., 1986). While the inventory was not used by Gibb et al. (1986) to research the issue, the fact that motivation was a crucial element in determining how to keep individuals in the aviation industry shows that knowledge of motivational factors affects the decision-making of major organizations in the aviation industry.

As seen from past studies, career choice motivation is an area of inquiry with a thorough foundation; however, it has not been widely applied to the aviation industry and pilot training field. Through the application of these widely studied foundations, this study seeks to create a better understanding of how individuals decide to choose aviation as a profession.

Table 2 provides a chronological summary of the studies related to career choice motivation in aviation that were reviewed in this chapter.

Table 2

Summary of the Reviewed Literature on Career Choice Motivation in Aviation

Year	Author	Title	Findings/Limitations
1986	Gibb et al.	Development of a Naval Aviation Career Motivation Inventory	Developed an inventory of possible reasons why a naval aviator would choose to either stay in the career field or leave. Inventory not tested.
2004	Clark	A Descriptive Research Survey Study That Examined Factors Influencing Selection of Four-Year Post-Secondary Commercial Aviation Programs	Identified the primary reasons students chose a particular aviation program. Results focused on the features of the program, not the career field.
2006	Allen and Barnhart	Influencing Factors in Degree Selection for Aviation Majors at Indiana State University	Identified motivations for undergraduates to choose an aviation major. Results included both aviation industry-related motivation factors as well as program-specific factors.
2008	Pendergrass and Franklin	A Study of the Career Choice Factors and Students' Academic Success at an Aviation School	Studied the relationship between initial reasons for choosing an aviation program and the effect of those reasons on finishing the program. Did not take into account student background or culture.
2011	Zoltsky and Beckham	Factors Influencing Female Aviation Professionals Choice of Career	Focused on identifying female motivational factors to work in the aviation industry. Focused on gender as a differentiating factor in motivation.
2016	Ates	The Affecting Factors Of Career Start in Institutions of Higher Education: Application with Turkish Aviation Students	Studied reasons Turkish students enrolled in aviation programs. Found that familial expectations were a major factor. Focused only on Turkish students.
2016	Opengart and Ison	A Strategy for Alleviating Aviation Shortages Through the Recruitment of Women	Identified a strategy to increase the number of female pilots. Focused on the reasons why females would be

			motivated to be pilots. Focused on gender as a differentiating factor in motivation.
2019	Nikle	Career Change Theory: An Analysis of Second Career Pilots Pursuing the Aviation Profession	Identified the reasons why individuals left an initial career to pursue aviation instead. Found that self-fulfillment, compensation and reducing dissatisfaction were primary. Only focused on career change, not initial motivation.
2020	Gagliardo	Against the Wind: A Study on Aviation as a Female Career Choice	Focused on how past social experiences influenced females to pursue aviation. Focused on gender as a differentiating factor in motivation.

In summary, past research on career choice motivation in aviation has attempted to answer questions similar to those posed by this study. However, none of the studies conducted accounted for cultural differences among a diverse group of pilot candidates. Furthermore, past studies focused heavily on the features of a university flight training program and their effect on motivation, rather than the personal motivational factors that may have spurred an individual to pursue a career as a pilot. Finally, past studies did not consider major world events that affected the aviation industry and how these events affected motivation.

CHAPTER III

METHODOLOGY

This study is framed within the constructivist philosophical research domain. Honebein (1996) described this domain as one in which individuals process and learn about the world through their own experiences and by reflecting on their memories of those experiences. Phenomenological research focuses on learning from and about the experiences that occur throughout a human's lifetime (Armstrong, 2005). This area of research enables a qualitative approach to answering complex questions by utilizing data derived from human experiences.

This study employed a phenomenological qualitative approach and utilized semi-structured interviews to identify the key career motivational sources for both American and foreign students enrolled in aviation programs in the United States. This approach allowed the students to convey their experiences and sources of motivation in their own words, enabling them to explain their unique perspectives and thus allowing for the greatest variety of possible motivation sources.

The qualitative approach used in this study compares two different student groups, both of which are pursuing a professional pilot career. The data collected from the foreign students provides the first baseline understanding, as this topic has not been researched before, of what motivates foreign students, who may have limited or no access to the aviation activities available in the United States, to pursue this career. These activities may include experiencing general aviation company services, public airshows, and having personal connections with those who fly for pleasure, etc. This data will then

be used to further describe how someone in a different environment and with varying levels of access to aviation went about entering the pilot training pipeline. The research will then proceed to compare the motivational themes of students from various foreign countries to those of students from the United States to determine whether there are shared underlying motivational factors or whether the different populations are motivated to become professional pilots for different reasons.

Research Questions

RQ1: What are the key factors motivating individuals to pursue careers as professional pilots? (Rodriguez, 2019)

RQ2: How do the career motivational factors for pilots differ between two different cultural groups (American and foreign)? (Shin, Rachmatullah, Roshayanti, Ha, & Jun-Ki, 2018)

RQ3: How does the pipeline process (interest through to participation in a training program) for students from a foreign country pursuing careers as professional pilots differ from that of students from the United States? (Bornholt, 1998)

These research questions were designed to identify the three major areas of this study that will contribute to both academia's and the industry's understanding of the pilot training process. The first research question addresses the foundational motivational factors, presented through an SDT framework. The second research question investigates how individuals from different cultural backgrounds may be influenced by different motivational factors when choosing to become pilots. Finally, the third research question seeks to clarify how individuals from nations with aviation industries that are dramatically different from that of the United States go about turning their motivation

into the actual career path of a professional pilot. The answers to these research questions will provide a greater understanding of how pilots are motivated and actively pursue a career in aviation.

Data Collection

The sources of data for this study were students enrolled in the Aeronautical Science (professional pilot) program at ERAU. Embry-Riddle Aeronautical University is a worldwide leader in aviation education, with over 30,000 enrollments in 2021 (ERAU, 2022). In addition, ERAU conducted over 100,000 hours of flight training in the 2019–2020 academic year. The student body of ERAU features a highly diverse student population, with 110 countries represented in the 2021–2022 academic year. After the United States, the top represented nations in the ERAU student body are the Republic of Korea, India, Saudi Arabia, China, and the United Arab Emirates. This diversity, combined with the aviation-centric education programs, makes ERAU an advantageous setting for this study's data collection. Embry-Riddle Aeronautical University has two residential campuses, one in Daytona Beach, Florida, and one in Prescott, Arizona, and a large virtual campus for distance learning. Furthermore,

The recruitment of study participants involved working with university leadership to obtain a list of all flight training students enrolled at both campuses. An informational flyer was created and approved for mass distribution among these students. The flyer included information about the study and the required type of involvement from participants. The flyer was emailed to all applicable students, and participants were identified through their responses to the email. All flight training students at ERAU were invited to participate, regardless of their nationality, type of piloting they were training

for, or the stage of flight training they were currently enrolled in. Participation in this study was completely voluntary, and all interviews were conducted via a web conferencing platform and recorded for future analysis.

A total of 20 students volunteered over a recruitment period of approximately six months, in which regular reminder emails were sent out and recruitment flyers (included in Appendix C) were posted on campus. Initially, 10 American and seven foreign participants enrolled in the professional pilot program volunteered to participate in the study. An additional three foreign participants were selected through in-person recruitment to have an equal number of American and foreign participants. All the students who volunteered to participate in the study were selected for the interviews.

Within the grounded theory, phenomenology, and common qualitative research practices across multiple disciplines, the number of interviews to constitute a sufficient sample size is widely discussed and debated, but typically, it is suggested to range between 10 to 30 interviews. Thomson (2011) analyzed and compared sample sizes in qualitative interview data across a hundred research articles. The author found that 65% of the studies used between 10 and 30 interviews to collect data on the studied topic, 22% used more than 31 interviews, and 12% used less than 10 interviews (Thomson, 2011). Furthermore, a study by Vasileiou et al. (2018) discussed the justification of sample size, noting that the key to determining the appropriate sample size is to measure the point at which new information no longer sparks new theoretical insights or at which the data becomes saturated and common themes form. The study went on to uncover that across the 214 articles reviewed, the average number of interviews conducted was between 15 and 31 interviews, with the variance depending on the journal to which the article was

being submitted (Vasileiou et al., 2018). Therefore, due to the long recruitment lead time, the ongoing pandemic, which was quickly changing the industry, and the successful recruitment of 20 participants, the study proceeded to the interview stage.

Of the 20 students interviewed, 10 originated from the United States and 10 from foreign countries. The foreign participants' respective nations of origin were not targeted. All foreign students in ERAU's Aeronautical Science program were invited to participate in the study, and the following countries were represented by the foreign participants: Myanmar, Taiwan, South Korea, Germany, Zimbabwe, France, Malaysia, and Qatar. There were two participants each from both South Korea and Germany. Each interview lasted for approximately 20–30 minutes and was conducted using the Zoom web conferencing platform. The audio recordings were then transcribed and submitted to NVivo for coding and further analysis. Two methods of audio transcription were used to ensure accuracy. The voice transcription software HappyScribe was initially used to convert audio files into text documents. A manual review of the text outputs from HappyScribe was then conducted to ensure accuracy and resolve mistakes made by the automated system. The software performed well on the transcripts of the participants who were native English speakers. However, more manual transcription and corrections were needed for the transcripts of the participants who were not native English speakers.

Methods of Analysis

The data results from both populations were analyzed using NVivo, which is designed to process verbal responses and identify common themes, thus organizing and classifying the verbal data recorded in qualitative interviews (Richards, 2003). The software allows the researcher to conduct quantitative analysis, using descriptive coding,

which provides a more thorough and statistically analyzable answer to research questions. This study's interview questions were specifically designed to allow the participants to answer with keywords that could be tagged and categorized into major themes.

NVivo was used during the students' interviews to identify keywords in motivation themes. These keywords were tagged and coded in the software. In qualitative research, codes are "tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study" (Miles & Huberman, 1994). The coding then allowed common themes to be separated into nodes. After the interviews with the students were recorded, the software identified whether the same keywords were used among the students by applying the recordings and transcripts of the interviews to the nodes developed in the software. The participants from both groups (American and foreign) were asked the same foundational questions, which were designed to reveal the extrinsic, intrinsic, and amotivation motivational factors for their pursuit of the professional pilot career.

Once transcribed, coded, and organized in NVivo, spreadsheets were created for each interview question, and the corresponding analysis was performed in NVivo. This approach allowed for the comparison and presentation of each question side-by-side with another question and its respective results. All the spreadsheets of the data analysis are provided in Appendix A. Furthermore, each question was studied from the lens of a direct answer to the question as well as a larger expanded answer that would include details about the question and the participants' relationship and experience with that situation. This method of analysis allowed for both direct answers to the research questions and a

further and more in-depth analysis of the qualitative aspects of the topic discussed with the participants.

Research Approach and Instrument

The data were collected by recording audio during Zoom calls with the participants. Video recordings were not necessary for collecting the data required for this study and therefore, were not implemented. The questions asked during the interviews were developed based on existing research and adapted to the topic of pilot training. Each question asked during the interview was aimed at answering one or more of the stated research questions. Furthermore, each question was organized based on the type of motivation source that may have impacted the interviewee and their ultimate decision to pursue a career as a professional pilot.

Seven of the interview questions were directly related to the stated research questions, while the eighth question was intended to study the effect of COVID-19 on the students' motivation. A key open-ended interview question adapted from Lambert (2018) asked the students to identify their top three sources of motivation. The participants provided short responses that were tagged and qualitatively analyzed to find specific themes and sources of motivation. The interview instrument and related questions are presented in Table 3. Baseline questions are those designed to better understand the starting point of each of the participants' interest in an aviation career.

Table 3

Interview Questions

Number	Question	Purpose	Motivation Source
1	Please describe what you identify as the starting point of your interest in aviation.	Career Choice Motivation, RQ1,2,3	Baseline
2	What were the initial steps you took towards a career in aviation.	Career Choice Motivation, RQ1,2,3	Baseline
3	Please describe any individuals or external events that had an effect on your motivation to become a pilot.	Career Choice Motivation, RQ1,2,3	Influence
4	Please describe if any and which job rewards of being a pilot affected your desire to pursue a career in aviation.	Career Choice Motivation, RQ1,2,3	Job Rewards
5	What aspects of being a pilot, as related to your social status affected your interest in aviation?	Career Choice Motivation, RQ1,2,3	Status
6	Please list three sources of your motivation to be a pilot and explain why.	Career Choice Motivation, RQ1,2,3	Motivation Source Importance Ranking
7	Please explain the progression from interest to where you are now, and include any information you can provide on how individuals in your country (or US) go about becoming a pilot.	Pipeline Process, RQ1,2,3	Baseline
8	Has the global COVID-19 pandemic affected your motivation to complete this training and to become a commercial pilot?	Career Choice Motivation/ Amotivation	Amotivation

All the participants were asked the same questions in the same order. In some cases, clarifying questions or prompts were posed in addition to the listed questions, such as “Can you elaborate more on that?” or “That is interesting, please explain why you felt that way.” Finally, additional questions were asked between the primary questions if

further data was necessary, such as “Did you complete that training as a child, or did you wait until you got to the university?”

Chapter III provided a summary of how this study was organized and the methodological approach adopted to answer the research questions. Chapter IV will present the data collected from the interviews as well as the analyzed results of the study.

CHAPTER IV

RESULTS

The results from the interviews are organized into the following categories:

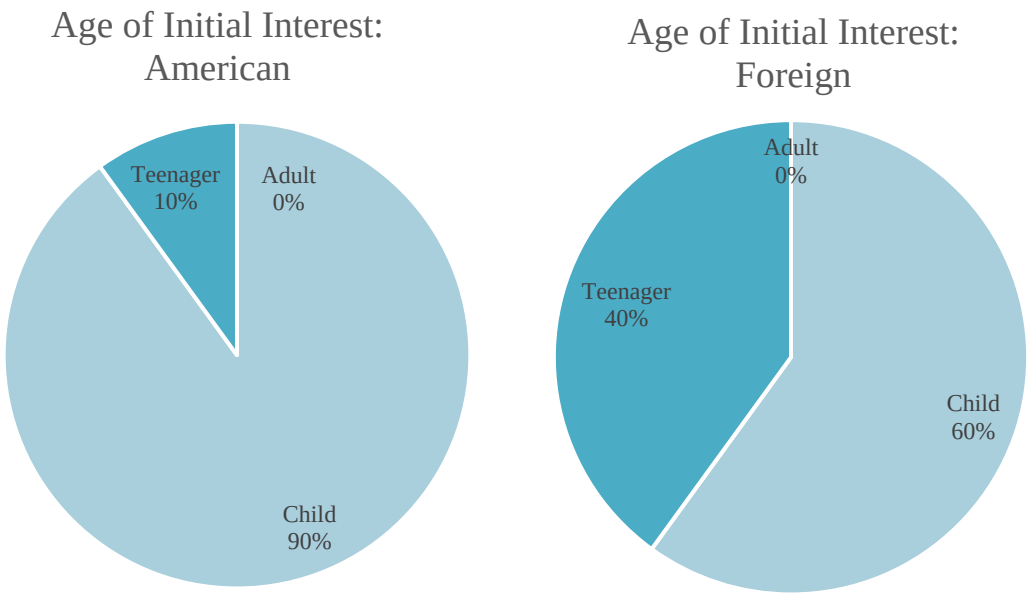
1. An analysis of the results from the baseline portion of the interview, identifying the participants' initial interest and initial steps toward flight training.
2. An analysis of the results from the career choice motivational factors part of the interview identified key motivational factors in the categories of influence, job rewards, and status.
3. An analysis of the results from the ranked motivational factors part of the interview identified the top three career choice motivation factors of participants.
4. A review of the results from the pipeline portion of the interview provides a foundational understanding of the differences between the steps American and foreign students take toward the pilot career path.
5. An analysis of the results of the amotivation part of the interview, identifying the effect of COVID-19 on the motivation of the participants.
6. A presentation of the answers to each research question.

The participants responded to the interview questions in their own words and used terms that are commonplace in the aviation industry. A glossary of commonly used aviation terms can be found in Appendix B.

Baseline Analysis. The baseline part of the interview was designed to identify the participants' initial point of interest in aviation: both the source of the interest and the age

at which the interest first arose. Additionally, the second baseline question sought to determine how the participants progressed from their initial point of interest to their first actionable step in pursuing aviation as a career. The age was classified into three categories: “Child,” indicating before 13 years old; “Teenager,” indicating between 13 years old and the age of enrollment of college; and “Adult,” indicating college enrollment age and later. The analysis of the age range obtained from the first baseline question is presented below.

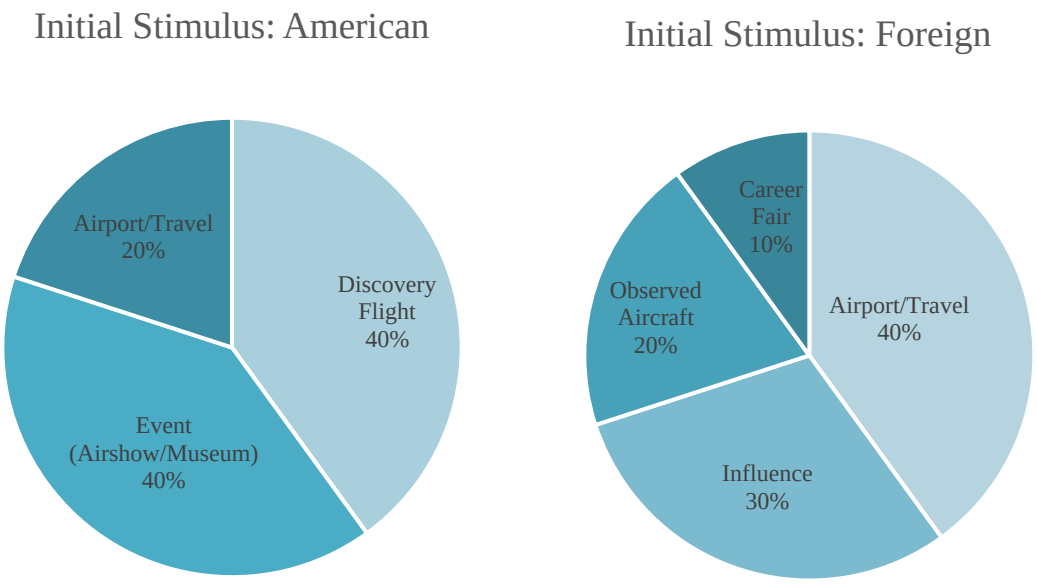
Figure 1: Age of initial interest in aviation, American and foreign response comparison



Among the American participants, 90% were interested in aviation as children, while only 10% were interested as teenagers. Among the foreign participants, 60% were interested in aviation as children and 40% were interested as teenagers. The results indicate that Americans, on average, become interested in the aviation career field earlier in their lives than foreign participants. However, both populations showed that all their respective participants were interested in the aviation industry before reaching adulthood.

The second part of the first baseline question aimed to identify the initial stimulus that sparked the participants' first interest in aviation. This measurement allows for the comparison between American and foreign students' initial sources of interest and describes how the different populations were exposed to the aviation industry differently. The results are described below.

Figure 2: Initial stimulus, American and foreign response comparison

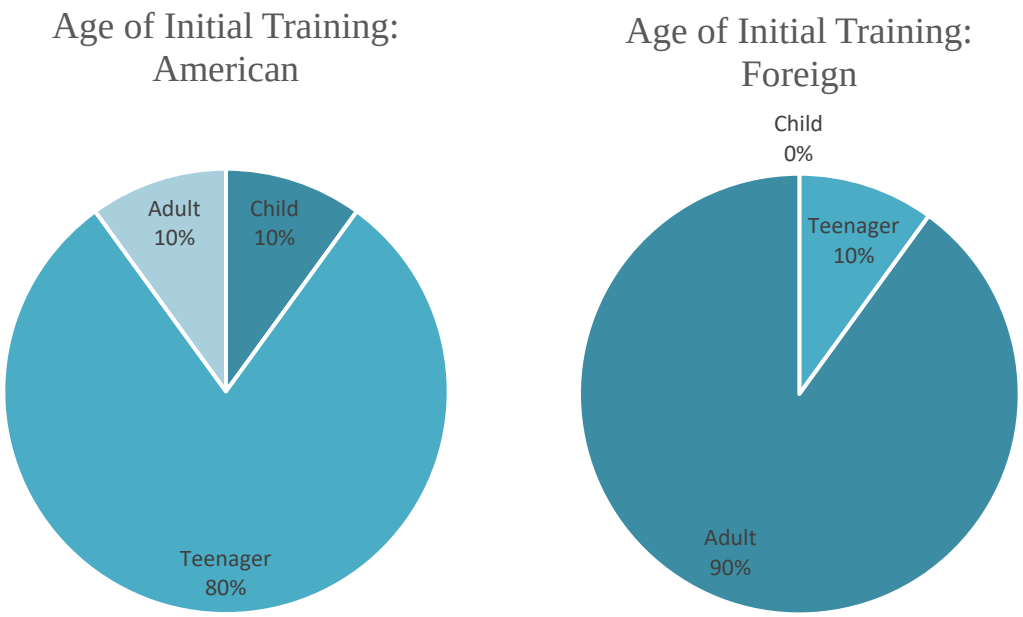


The initial stimulus of the American participants was predominantly split, with 40% of the total responses for each stimulus, between experiencing a discovery flight and attending an aviation event or visiting a museum. At 20%, going to an airport for a commercial flight was the third-ranking stimulus for the American participants. However, for the foreign participants, it can be seen that going to an airport for a commercial flight (40%) and influence from a third-party person (30%) were the predominant stimuli for

their initial interest in aviation. Observing aircraft from afar and going to a career fair were the third and fourth categories of initial stimulus, respectively.

The second baseline analysis question aimed to identify how the participants acted upon their initial interest and took their first steps toward turning their interest into a career path. The two different populations were again compared to better understand how an individual's environment affects the initial steps taken in pursuing a career. Furthermore, the second baseline question aimed to identify the age at which the participants took their initial step by starting pilot training. The results for the first and second parts of the second baseline question are presented below.

Figure 3: Age of initial career training, American and foreign response comparison

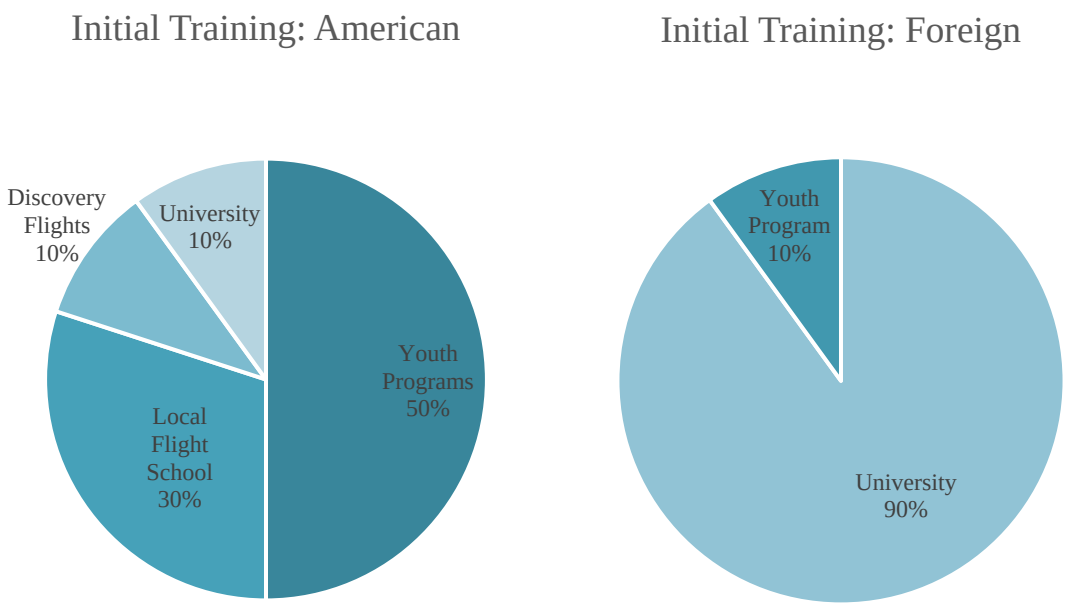


The data shows that 80% of the American participants were able to start training as teenagers. Only 10% were able to begin training as children, and 10% waited

until adulthood. However, the foreign participants had to wait much longer, with 90% starting their training as adults and only 10% starting as teenagers.

The intentional step that arises from interest and leads to the initiation of training for a career is a point of interest in the field of career choice motivation. In the case of some participants, they did not begin training until their enrollment in a professional pilot training program in college. However, other participants started training at local flight schools, in high school programs, in youth programs, or by receiving a discovery flight from a company or personal aircraft owner. The comparison of the populations is presented in the analysis of the second part of the second baseline question shown in Figure 4.

Figure 4: Source of initial training, American and foreign response comparison

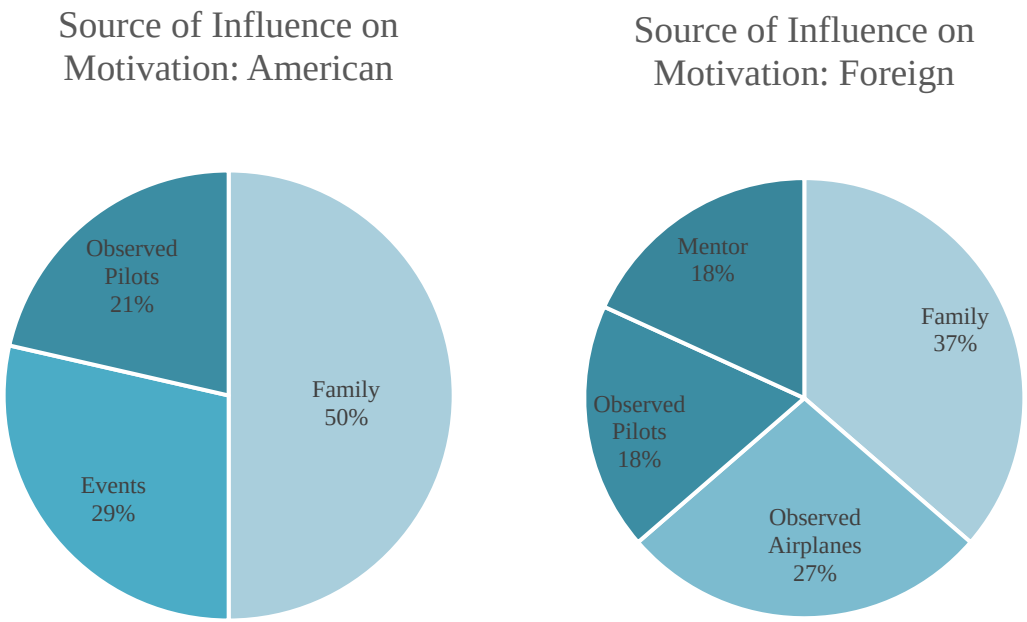


The results indicate that American participants had various options for their initial

training, including youth programs (50%), local flight schools (30%), discovery flights (10%), and university programs (10%). However, 90% of the foreign participants had to wait until attending their university program to begin training, with only 10% being able to start training before college through a youth program.

Career Choice Motivation Analysis. As described in the literature review, career choice motivation can be broken down into three major potential sources of motivation: influence, job rewards, and status. In the part of the interview pertaining to sources of motivation, the participants were asked about each of the three major sources and how they affected their motivation to pursue the professional pilot career. Three questions were asked, one for each of the potential motivation sources. The results from each question are presented in Figure 5. The first analysis describes who/what were the direct influences on the participants.

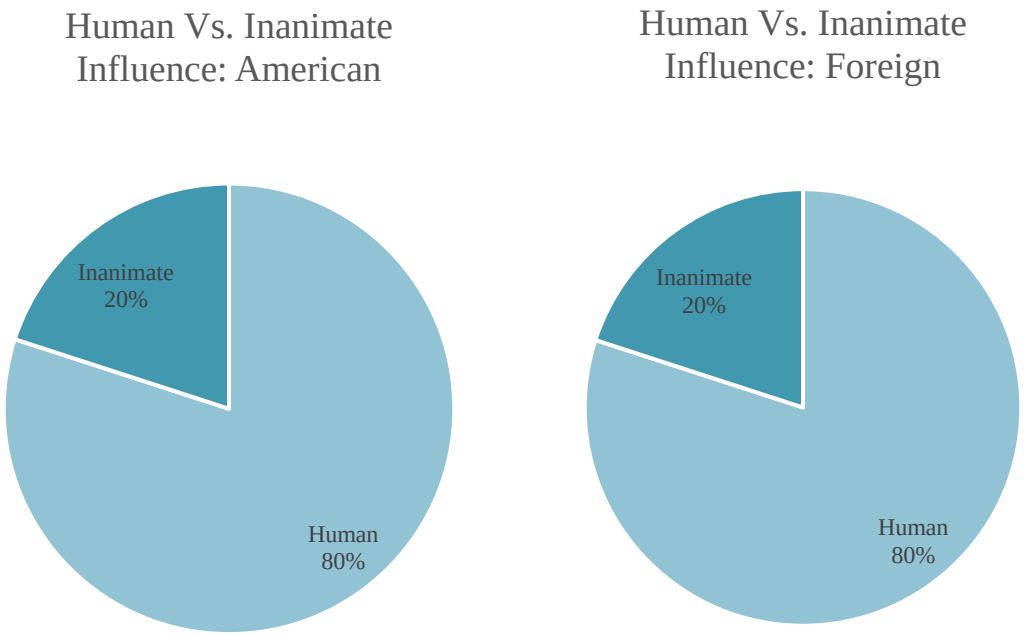
Figure 5: Source of influence on motivation, American and foreign response comparison



The data reveals that family members were the primary source of influence for both American (50%) and foreign (37%) participants. In addition, 29% of American participants were influenced by aviation events, while 21% were influenced by observing pilots. Foreign participants, on the other hand, were influenced by observing airplanes (27%), observing pilots (18%), and mentors (18%).

The second analysis aimed to determine whether the influence was from human sources, such as family members or mentors, or inanimate sources, such as events or movies (see Figure 6).

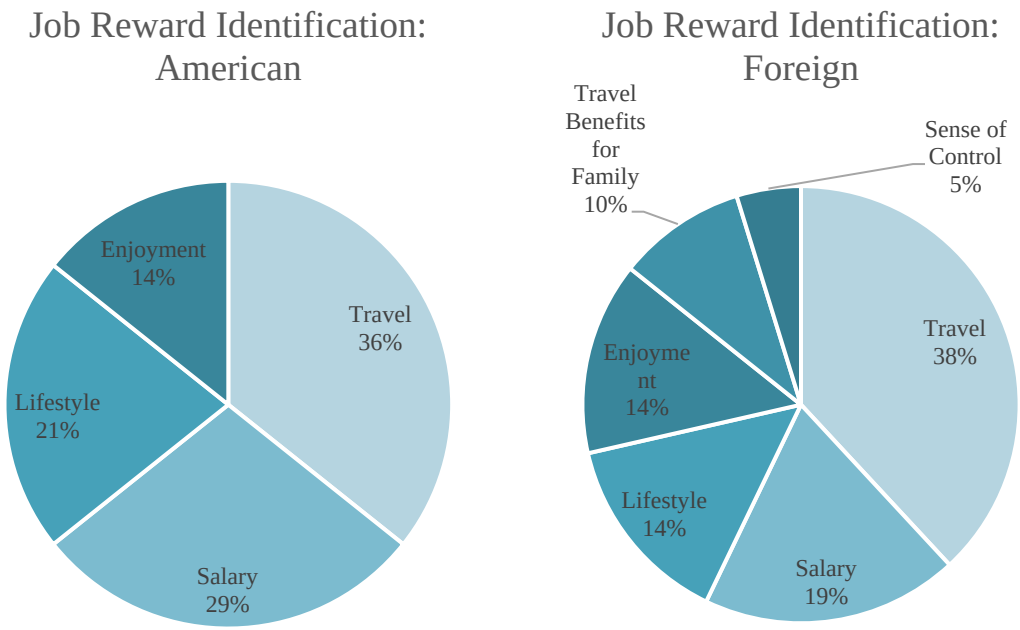
Figure 6: Human vs. inanimate influence, American and foreign response comparison



The data shows that both American and foreign participants had equal levels of influence from human and inanimate sources.

The second potential source of motivation is job rewards. These are motivational factors that are directly tied to the benefits or job-specific aspects of being a pilot, for example, salary, travel, and benefits, to name a few. Each participant was asked if job rewards were a factor in their career choice, and if so, which specific job rewards were the most motivating. The results from this inquiry are described in Figure 7.

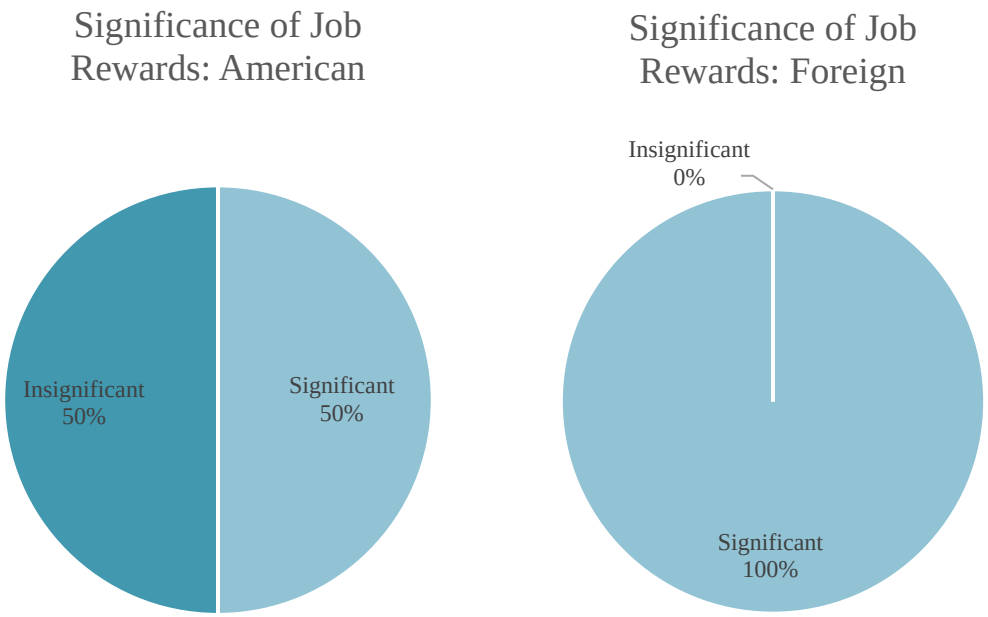
Figure 7: Job reward identification, American and foreign response comparison



Both populations showed similar results for two sources of motivation within the job rewards category: travel and salary were noted as being the most motivating job rewards. Enjoyment was also noted by 14% of the participants from both populations. However, the foreign participants also mentioned flight benefits for family members and a sense of control as motivating job rewards.

The second analysis performed on the job rewards category identified whether or not the participant felt that job rewards played a significant role in their career choice motivation. The results are presented in Figure 8.

Figure 8: Significance of job rewards, American and foreign response comparison

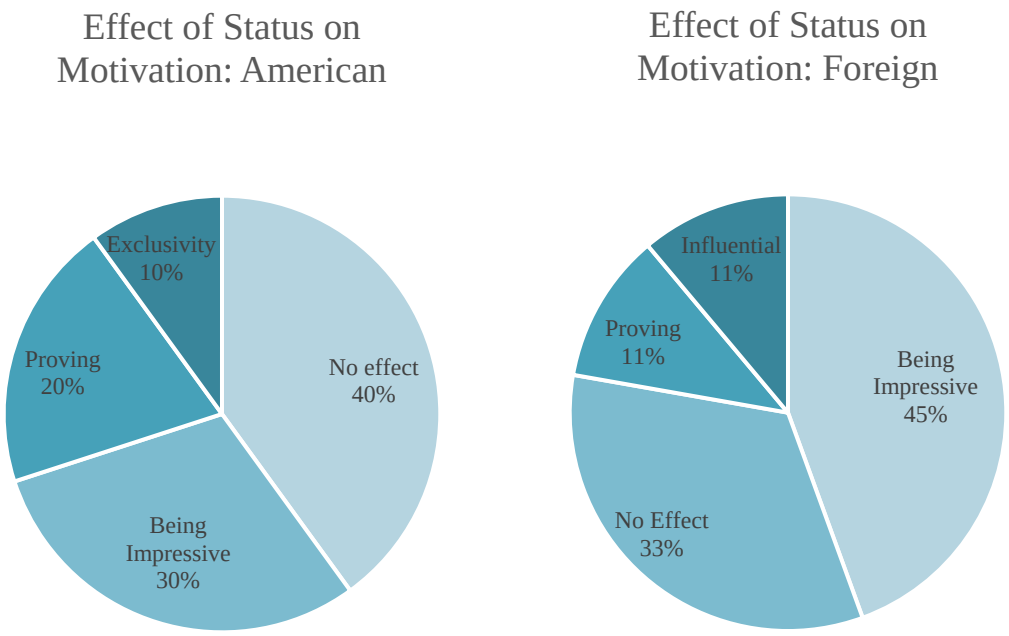


The results showed that when initially questioned on whether job rewards were a significant factor in their motivation to be a pilot, the American participants were split equally between responding that they were significant and insignificant. However, all of the foreign participants noted that job rewards were a significant motivating factor when choosing the aviation career field.

The third category for career choice motivation is status, which consists of motivation derived from a desire to positively impact one's social status. Examples include being impressive, proving to others that the career is achievable, being respected,

etc. The question on the status motivation source was also analyzed in two parts. The first part is an analysis of what specifically about the aspect of favorable social status motivated the participant, and the second part is a further qualitative explanation of the significance of that status effect to the participant. The results from the status category are presented in Figure 9.

Figure 9: Effect of status on motivation, American and foreign response comparison



The data showed that not all the participants were motivated to be pilots for social status, with 40% of the American participants and 33% of the foreign participants noting no effect. However, for the participants who did note that status was a motivating factor, the effect of being impressive to others was the highest response rate among both populations: 45% for the American participants and 30% for the foreign

participants. The remaining motivating factors were proving to others that they could do the job, being influential, and valuing the exclusivity of the position.

The table below provides a comparative list of the types of responses given by the two populations of participants. Repeated responses from multiple respondents were only included in the table once. Furthermore, participant responses were summarized into concise descriptions for brevity.

Table 4: *Qualitative Descriptions of Motivation Stemming from Status*

American Explaination of Motivation from Status	**Foreign Explanation of Motivation from Status**
Enjoys telling people he is a pilot and having them be impressed	Enjoys people seeing him at the airport and being impressed by his status
Proving to people that females can be professional pilots	Enjoys having people be impressed that she is a female pilot
Enjoys being looked up to by others	Enjoys being attractive to others
Enjoys telling people about their exclusive career	Likes to be an authority figure

Ranking of Career Choice Motivational Factors

Each participant was asked to rank their top three sources of motivation to pursue a career as a pilot. This question was included to allow the participants to reflect on the content discussed in the prior questions and then rank the primary reasons they chose the career field. In many cases, the participants had already described their primary sources of motivation but did not compare or prioritize them in order of importance. This

question allows the research to better understand how one source of motivation compares to the others and how the sources are prioritized between the two populations.

Tables 5 and 6 compare the American and foreign participants' responses. Furthermore, both Tables 5 and 6 categorize responses based on the three potential motivation source categories identified in the literature review.

Table 5: *American Top Three Career Choice Motivating Factors Ranked*

Participants	**Ranking #1**	**Ranking #2**	**Ranking #3**
American #1	JR (Travel)	JR (Salary)	S (Impressive)
American #2	JR (Meaningful)	JR (Travel)	JR (Enjoyment)
American #3	JR (Enjoyment)	JR (Purpose)	S (Proving)
American #4	I (Family)	I (Youth program)	I (Teacher)
American #5	I (Family)	JR (lifestyle)	JR (Salary)
American #6	JR (Travel)	I (Family)	JR (Salary)
American #7	I (Observed pilots)	JR (lifestyle)	JR (Salary)
American #8	JR (Travel)	S (Exclusivity)	I (Observed pilots)
American #9	JR (Enjoyment)	I (Family)	JR (Lifestyle)
American #10	I (Family)	JR (Travel)	S (Proving)

Note: JR= Job Rewards, I= Influence, S= Status

Table 6: *Foreign Top Three Career Choice Motivating Factors Ranked*

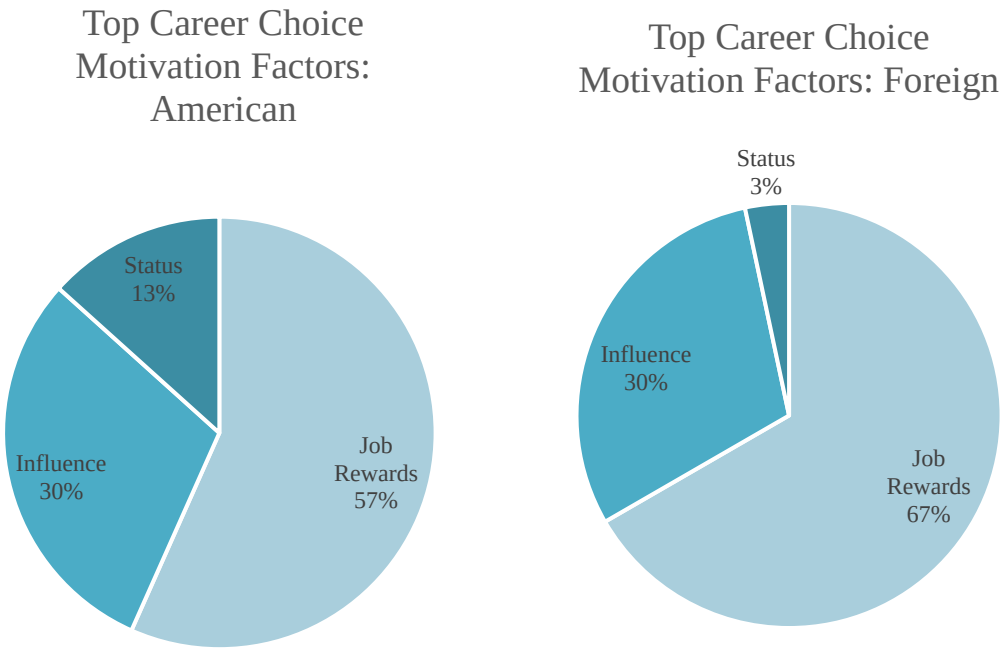
Participants	**Ranking #1**	**Ranking #2**	**Ranking #3**
Foreign #1	JR (Travel)	JR (Salary)	JR (Benefits)
Foreign #2	JR (Travel)	JR (Enjoyment)	I (Control)
Foreign #3	JR (Travel)	JR (Salary)	JR (Lifestyle)
Foreign #4	JR (Enjoyment)	JR (Salary)	I (Family)
Foreign #5	I (Mentor)	JR (Travel)	I (Past travel)
Foreign #6	I (Family)	I (Observed aircraft)	JR (Travel)
Foreign #7	JR (Enjoyment)	JR (Salary)	JR (Travel)
Foreign #8	JR (Salary)	S (Influential)	I (Family)
Foreign #9	JR (Travel)	JR (Enjoyment)	I (Family)
Foreign #10	JR (Enjoyment)	JR (Salary)	I (Family)

Note: JR= Job Rewards, I= Influence, S= Status

A visual representation of the information provided in Tables 5 and 6 are presented in Figure 10, which shows the specific source of motivation organized into one

of the three motivation categories and presented as a percentage of the total answers within each studied population.

Figure 10: Top career choice motivation factors, American and foreign response comparison



The data reveals that job rewards were the highest-ranking source category for participants from both populations, with 57% of American participants and 67% of foreign participants ranking it as #1.

Pipeline Analysis

The third research question in this study aimed to identify how the pipeline process for individuals motivated to pursue the career of a commercial pilot differs between those from the United States and those from foreign countries. The interview process allowed the participants to describe their own experience of pursuing the career

and/or how individuals from their country typically pursue the career, and the major steps in the pipeline process. The analysis below shows the major milestones for both American and foreign participants (Figures 11 and 12). Furthermore, each step in the figures shows the percentage of how many participants noted that step as being present in their respective country's pipeline process. The arrows between each step represent the typical progression noted by the participants. Note that not all participants experienced the same milestones (as represented by the corresponding percentages). However, they did describe the same progression, with different percentages of participants participating in each milestone.

Figure 11: American pipeline, personal experience

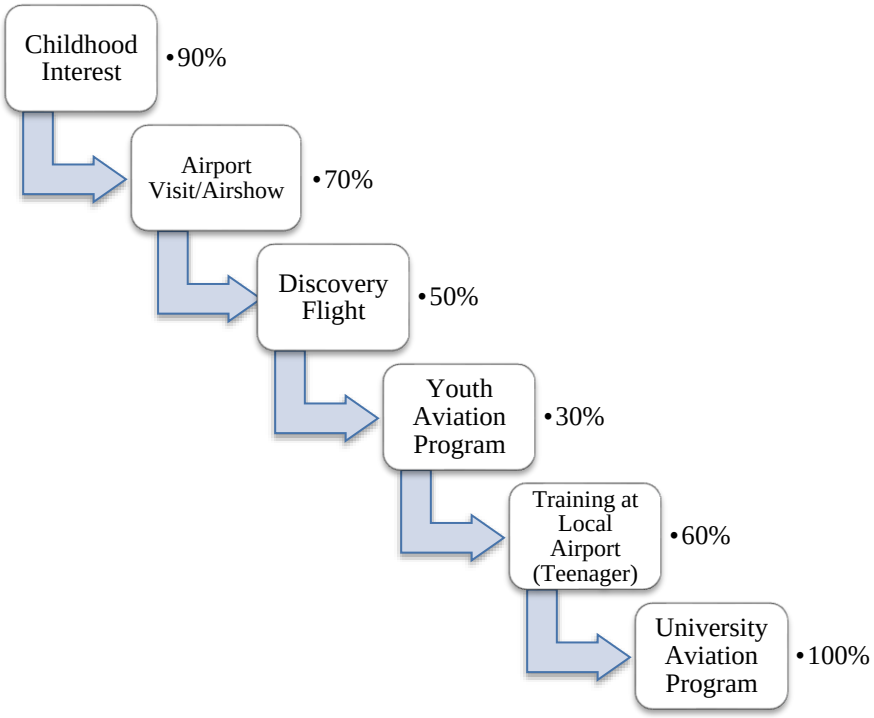
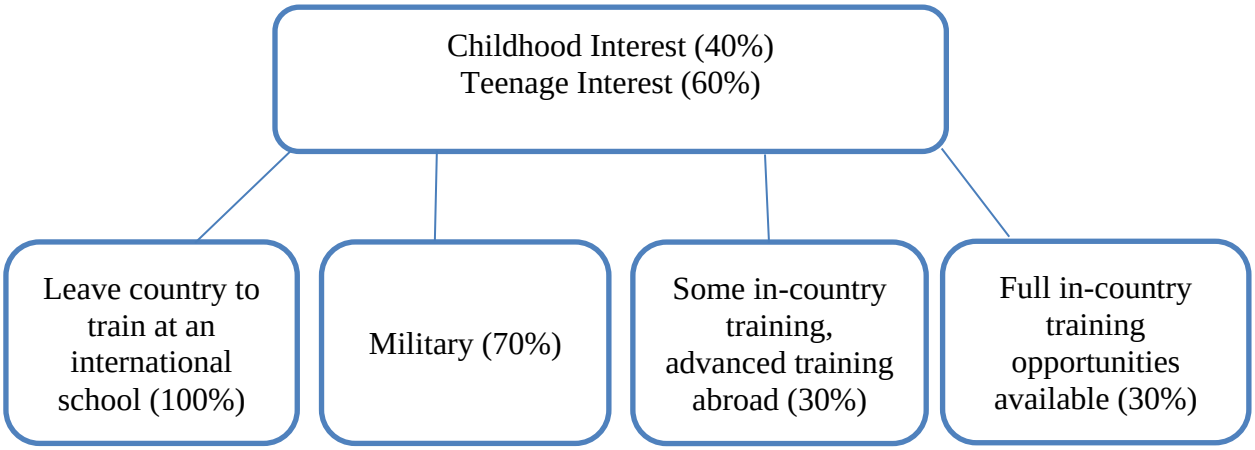


Figure 12: Foreign Pipeline, typical experience for individuals from their country



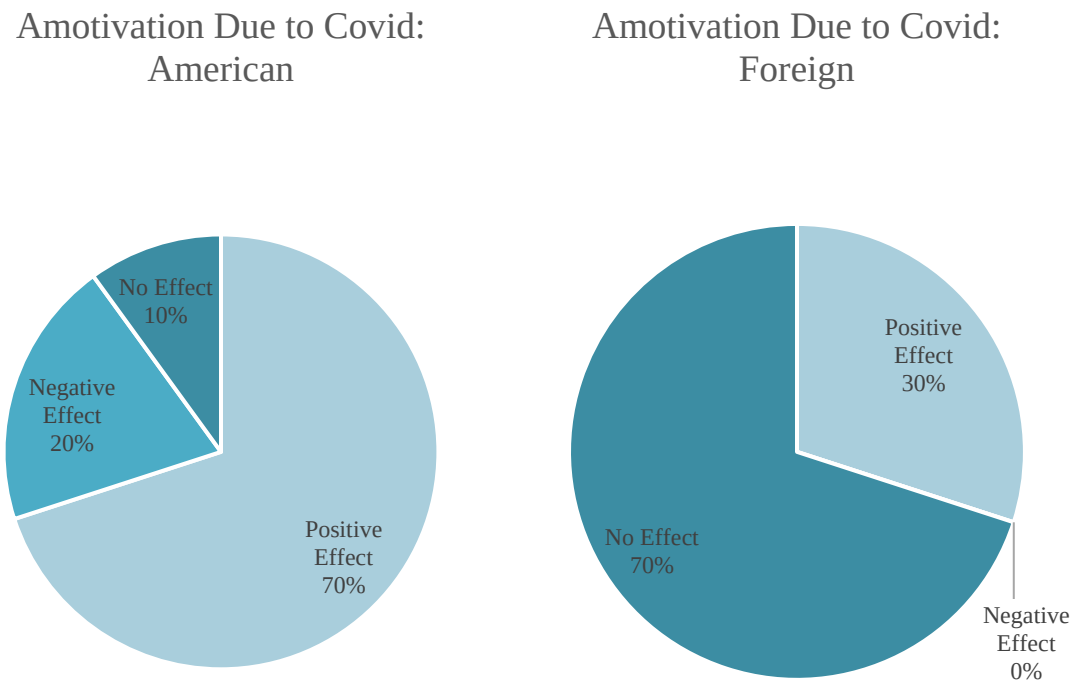
The figure above depicts how the foreign participants described the pipeline process for pursuing a career in aviation in their respective countries. In contrast to the multi-step progression seen in the American results in Figure 11, foreign participants noted that from the point of initial interest, individuals had four possible options: leaving their country to attend an international flight training school, joining their home-nation's military, starting initial training in-country then going abroad, or enrolling in an in-country professional pilot training program. The purpose of presenting this data in a different type of graph is to illustrate that the foreign pipeline process has fewer available milestones leading to a typical outcome compared to the American pipeline process.

Amotivation (COVID-19) Analysis

Amotivation caused by the COVID-19 pandemic was studied to better understand whether the participants' experience of going through pilot training during an extensive and historic shutdown of the aviation industry influenced their desire to continue training

for the career. The responses were categorized into three groups: negative effect, positive effect, and no effect. A negative effect indicates that the pandemic had a negative impact on the participant's motivation. A positive effect indicates that the pandemic made participants more motivated to pursue their careers. No effect indicates that the participants did not consider the pandemic a factor in their decision to pursue a career. The results from the question pertaining to amotivation and a qualitative description of each population are presented in Figure 13.

Figure 13: Amotivation due to COVID-19, American and foreign response comparison



The data showed that amotivation was not present among the majority of both populations' participants. Only 10% of the American participants experienced ongoing amotivation. Conversely, 70% of the American participants and 30% of foreign

participants experienced a positive impact on motivation due to COVID-19. Both groups had participants who described COVID-19 as not being a factor in changing motivation, either positively or negatively. Examples of the effect of COVID-19 on participant training for the professional pilot career are presented in Table 7.

Table 7: *Amotivation Examples Resulting From the COVID-19 Pandemic*

American Participants	Foreign Participants
Became worried during COVID that recession would make it hard to get a job	Initial effect, but short lived
Put a damper on the excitement of being a pilot for a career	Time and money is amotivation, not COVID-19
Wanted it long before COVID, didn't change mind	COVID-19 not a factor in motivation
Believes higher demand after forced retirements	
Realized cannot accept a career working inside	
Wanted to get out of the house and learn to fly	
Temporary negative effect, turned around to positive as COVID lessened	

Research Question Analysis

This section will outline a direct analysis of the data as it relates to answering the research questions. A greater discussion about the qualitative details and implications of the findings will be provided in Chapter V. The research questions and the related results from the interview data are presented below.

RQ1: What are the key factors motivating individuals to pursue careers as professional pilots? (Rodriguez, 2019)

The interviews supported the literature on SDT and related studies, showing that the primary career choice motivational factors can easily be categorized into three main sources: influence, job rewards, and status.

Within the influence category, the data showed that the primary sources of influence for the American participants were family members, aviation-related events, and observing pilots at airports. For the foreign participants, the primary sources of influence were family members, mentors, observing aircraft in flight, and observing pilots at airports.

Within the job rewards category, the primary motivational factors for the American participants were salary, travel, lifestyle, and enjoyment of flying. For the foreign participants, the primary motivational factors were the same as those of the American participants, but with the added factors of family travel benefits and a sense of being in control. One foreign participant noted, “I think I like the idea of being in control… I am in charge of the airplane.” This answer was unique among all the interviews.

Within the status category, both populations had participants who noted that they were not motivated to pursue a career by the social status that accompanies it. However, both populations also had participants who were motivated by it. In the American population, the participants were positively motivated to be pilots for the following reasons: being impressive to others, proving to others that they could accomplish the goal of being a pilot, and the exclusivity of being a pilot. The foreign population showed that they, too, were motivated by being impressive to others and proving to others that they could accomplish the goal of being a pilot, but they also noted motivation stemming from

being an influential person. For example, the foreign participants' comments regarding status included "Being a pilot is very respectable in society, that is why I choose this job" and "Whenever I tell someone I am a pilot, they get wide-eyed. They say, wait, you're a pilot? So, I like telling people that I am a pilot."

RQ2: How do the career choice motivational factors for pilots differ between two different cultural groups (American and foreign)? (Shin, Rachmatullah, Roshayanti, Ha, & Jun-Ki, 2018)

When comparing the data collected from the American participants to that from the foreign participants and categorizing the factors into the three motivation source categories (influence, job rewards, and status), the results initially appear similar. Both populations noted job rewards as the greatest source of career choice motivation, followed by influence as the second greatest, and status as the third greatest. Both populations had a similar distribution for each category, as presented in the "Ranking of Career Choice Motivational Factors" section of this chapter.

However, there are differences when the data within each category are observed. Travel opportunities, both personal and for family, were a greater source of motivation for the foreign participants than for the American participants. Furthermore, influence stemming from family members who were pilots was a greater source of motivation for the American participants than for the foreign participants, who were influenced by unrelated individuals, such as mentors, or experiences, such as visiting an airport. Comments from the foreign participants regarding this difference included "My family members were not pilots, but I was able to see pilots when I would go to the airport" and "I would see pilots in the terminal and think 'Wow, I want to be like them'."

RQ3: How does the pipeline process (interest through to participation in a training program) of students from a foreign country pursuing careers as professional pilots differ from that of students from the United States? (Bornholt, 1998)

This study was able to collect data and document significant differences between American and foreign individuals training to be pilots and how they pursued their careers and entered the field. In most cases, the American participants described personal experiences of how they became interested in flying and pursuing a professional pilot career. However, the foreign participants were able to share both their personal experiences and an overview of how individuals from their respective countries would typically pursue their careers. This is an important addition to the data as all the foreign participants study at ERAU, and thus, they may have similar stories. The foreign participants' description of a typical pilot training pipeline allowed for a better understanding of the local options available to individuals from foreign countries looking to pursue a career in aviation.

The first major difference between the two populations' pilot training pipeline lies in the initial point of interest in the field. Of the American participants, 90% became interested in being pilots as children (below 13 years of age), and 10% became interested as teenagers (between 13 years old and the age of enrolling in college). However, on average, the foreign participants became interested in becoming pilots later than the American participants: 60% became interested as children, while 40% became interested as teenagers.

The point at which individuals progressed from being interested in becoming pilots to starting their training was measured to better understand when individuals from

each population would typically take the first step toward training for this. The American population started their training significantly earlier than the foreign population. Specifically, 10% of the American population started training to become pilots as children, 80% started as teenagers and only 10% started as adults. On the other hand, none of the foreign participants started training as children. Only 10% started as teenagers and 90% started as adults. This data shows that a major difference between the two populations is the point at which individuals progress from mere interest in the field to taking the milestone step of beginning pilot training.

Most of the foreign participants noted that the primary reason for waiting until adulthood to pursue a career as a pilot was the lack of training opportunities in their respective countries. Furthermore, the majority of the foreign participants indicated that if had stayed in their respective countries, the only way they could have pursued a career as a pilot would have been through the military or, in some cases, through small and selective civilian pilot training programs.

In contrast, the American participants showed heavy involvement in youth programs and other easily accessible opportunities for young people to experience aviation, such as discovery flights. These types of opportunities were not observed to be available to any of the foreign participants. For example, one foreign participant stated, “When I was eight years old in my home country, I saw a metal bird flying. I had never seen anything like that. I asked my mother why its wings weren’t flapping. She told me it wasn’t a bird and that there were people inside of it flying it.” On the other hand, an American participant noted, “My uncle started taking me flying regularly when I was six

years old… Later, I was able to get a flight simulator at home and ended up enrolling in an aviation program in eighth grade."

While all the participants ended up attending a university flight training program, their exposure to aviation before their enrollment in ERAU was a differentiating factor between the two populations. In most cases, the American participants had direct access to aviation and participated in hands-on aviation activities before attending their respective university flight programs. In contrast, most of the foreign participants had enough exposure to make them interested in aviation but lacked the hands-on opportunities that the American population had. Comments from foreign participants regarding their access to aviation included: "So, I think if you want to be a pilot, you really have to go abroad and go to a flight school abroad… I don't think any of us have taken flight lessons in high school because we don't have the option to" and "If you want to be a pilot in my country, your only choices are to join the military, or leave to go study abroad."

Chapter IV presented the results from the data collected in the interviews in the form of combined responses to interview questions and direct answers to the research questions. Chapter V will provide further analysis of the results and draw conclusions based on these findings. In addition, Chapter V will provide future recommendations for both academia and the aviation industry.

CHAPTER V

DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

Discussion

This study aimed to identify the key motivational themes that lead individuals from a variety of cultural backgrounds to pursue careers as professional pilots. Three research questions were investigated to identify the key factors in the career choice motivation process for individuals pursuing the professional pilot career, compare the motivational factors between American and foreign individuals, and identify the career pipeline process for individuals from different countries.

The first research question aimed to identify the factors that motivate individuals to pursue careers as professional pilots. Based on the literature review, the motivational factors were ordered into three categories: influence, job rewards, and status. When reviewing the data from both populations studied, the answer to the first research question became clear: the primary source of motivation for individuals to pursue a professional pilot career stems from influence, mostly from family or close friends and mentors. This direct influence provides an example for interested individuals to follow and acts as a source of information and guidance. Within the influence category, the participants were also positively influenced by external events, such as visiting an airport or an airshow, going to an aviation event, or attending an aviation youth program. The impact of influence on the career choice motivation of pilots was the highest motivation source category for both populations studied.

The secondary source of motivation is job rewards, with a majority of the participants noting travel and salary as major motivational factors. However, other job

rewards, such as the enjoyment of flying, providing flight benefits to family, and the sense of being in control, were also noted by participants.

The least important source of motivation is status, which positively motivated less than 20% of the total participants. However, for those participants who were motivated by status, their reasons for doing so were to impress others or prove to others that they could become pilots.

The second research question sought to compare these motivational factors and their respective categories between the American and foreign participants. The participants from both populations showed significant career choice motivation stemming from influence. The specific sources within the influence category varied between the populations, but in both cases, many of the participants were influenced directly by individuals who were already pilots or in some way involved in the aviation industry (such as flight attendants, military members, etc.). Of the American participants, 70% had family members who were pilots, while all of the foreign participants relied on family members or mentors who had some access to the aviation industry but may not have been pilots themselves. In such cases, they found additional motivation by observing pilots who were not family members.

When the participants were asked to rank their sources of motivation, job rewards were ranked as the most impactful source of motivation by both populations. However, when job rewards were considered exclusively and not compared with other sources of motivation, it was found that the foreign participants placed much more emphasis on job rewards than the American participants. Of the American participants, 50% noted that job rewards were not a primary source of motivation. However, 100% of the foreign

participants immediately cited job rewards as a significant source of motivation. This difference may suggest that the American participants may like to perceive themselves as having made their career choice for less pragmatic reasons, such as the influence of a family member or the perceived status of being a pilot. However, when faced with ranking job rewards and other categories of motivation, they may reevaluate the importance of the job rewards of being a pilot.

The specific job rewards of being a pilot and the associated amount of motivation also differed between the two populations. The foreign participants placed great importance on travel benefits, both for themselves and their family members. While travel was also a popular source of motivation for the American participants, most of them described the pilot lifestyle as attractive rather than the opportunity for personal travel or to provide travel opportunities to their families. Furthermore, it is important to note that travel, salary, and enjoyment of flying were the three most popular job rewards and were noted by both populations. Other types of job rewards were generally not described, with the exception of one participant noting that they wanted to do a job where they could feel in control, which was the only instance in this study of control being associated with a positively motivating job reward.

The category of status as a source of motivation yielded very similar results between the two populations. The American and foreign populations both had significant percentages of participants (40% and 30%, respectively) who indicated that status was not a significant source of motivation. However, this portion of the study did yield some interesting qualitative results, including many of the participants enjoying the feeling of

being impressive, as well as several participants from both groups finding motivation from proving to others that they were capable of doing the job.

Regarding the motivation to impress others, 35% of all participants from both groups indicated that they enjoy being considered impressive by others. An additional 10% of the total population noted similar status-related sources of motivation, such as being part of an exclusive career field and being influential to others. Therefore, it can be concluded that although status may not affect the motivation of all participants, for those to whom status is a source of motivation, being impressive or receiving similar positive feedback from others is significant.

One participant from each population expressed that they were motivated by status due to being female and proving to others that females are capable of being pilots. This is an interesting result, especially since it showed up in both the American and foreign populations. In the analysis, this status-related source of motivation was tagged as "proving." While there are significantly more males in the piloting career, the rate at which women are entering the field is unprecedented. According to the Pilot Institute (Denton, 2022), a large ground school training company, the number of female student pilots in the United States increased by 151% between 2015 and 2021. While this is a significant increase in the number of females entering the career field, the results of this study show that there is still a sense of irregularity regarding females choosing to be pilots, as shown by the participants' desire to prove that women can be pilots. This area of research should be further examined beyond this study.

The ranking of the top three categories of motivation varied slightly between the American and foreign participants. Job rewards were ranked as the top source of

motivation by 57% of the American participants and 67% of the foreign participants. This is a relatively similar number, although it does show that job rewards hold more weight for foreign participants.

Interestingly, the 10% difference between the American and foreign participants' rankings noted above is attributed directly to the status category. The American participants who did not list job rewards as one of their top three sources of motivation listed status instead. This shows that while both populations place heavy emphasis on job rewards, some of the American participants place greater weight on status.

The third research question sought to better understand the pipeline process of how and when an individual becomes interested in becoming a pilot when they start their training, and how they go about training to become a professional pilot.

The part of the study pertaining to the pipeline process is where the largest differences between the two populations existed. The participants from both populations generally showed an early interest in aviation. However, the point at which they progressed from interest to beginning to train for their career was different for the foreign participants. In nearly every case, the foreign participants had to wait until they could enroll at ERAU before they could begin their pilot training. This suggests that there may be a barrier to entry into the career field for aspiring pilots living in foreign countries.

In addition, this part of the study uncovered that while most of the foreign participants had to wait until adulthood to pursue aviation as a career, it was also difficult for them to pursue this career in their respective home countries. In most cases, the foreign participants described limited or no in-country flight training opportunities outside of military service. Many of the participants noted that the military was the

primary option for pursuing a career in their respective countries. In some cases, there were small or difficult-to-access civilian training programs, but in most of these cases, the participants provided reasons why the in-country training programs were not a viable option. Therefore, although the foreign participants became initially interested at an early age, they had to wait until adulthood to seek training options, most of which involved joining the military or leaving their home countries. This is not an insignificant decision for youth to make. Joining the military is a major life-changing decision, as is moving away from one's home country, where one was raised, and leaving friends and family to train in a different country. This is a point of interest as it shows that if an individual from a foreign country wishes to pursue aviation as a career, their dedication to it must be strong.

Initial interest in the career field is an area that has surprising results. Both the American and foreign participants showed interest in the career field at very early stages in their lives. This similarity between the two groups may suggest that the initial spark of interest in the career field is more of a universal experience that isn't affected by the country one was raised in or resides in.

However, the point at which participants transitioned from interest to active pursuit of the career field varied greatly between American and foreign participants. In most cases, the American participants described their ability to pursue the career long before enrolling in a university training program. They accomplished this in several ways, including training for private pilot licenses at local flight schools, attending aviation summer camps, and receiving scholarships through youth aviation programs. In contrast, most foreign participants were interested in the career field at similar ages to the

American participants but lacked direct access to aviation beyond seeing aircraft from a distance or, in some cases, getting the chance to fly on a commercial aircraft. This lack of access to the industry was commonly reported among foreign participants.

The final portion of the study focused on possible amotivation caused by the COVID-19 pandemic, as the participants were enrolled in pilot training during that time. As discussed in Chapter I, COVID-19 had a major impact on the aviation industry due to the abrupt decline in travel as well as various rules and regulations regarding mask usage, vaccines, and travel bans. The effect of this sharp decline in travel resulted in a major reduction in the number of pilots needed in the industry. While this reduction in the labor force was relatively short-lived, it did cause a ripple effect in the piloting career field, leading to early retirements, layoffs, and hiring freezes.

Amotivation due to the steep decline in the industry would be expected among prospective professional pilots. However, the participants of this study surprisingly described themselves as having little to no amotivation. In fact, many described COVID-19 as having a positive motivational effect on their decision to continue training and become pilots.

Of the American participants, 70% described the COVID-19 pandemic as a positive motivator for various reasons, including the quick recovery of the industry, the forced layoffs and early retirements causing older pilots to vacate their positions earlier than expected, and the effect the pandemic had on their desire to get out of their houses and learn a difficult skill. Conversely, 20% of the Americans did describe feelings of amotivation due to being worried about getting a job immediately out of college and the

general negativity in the industry. The final 10% of the American participants described the pandemic as having no effect on their motivation.

The positive effect of COVID-19 on motivation was not felt as strongly by the foreign population as by the Americans. Only 30% of the foreign participants noted positive motivation stemming from the pandemic, for similar reasons as the American participants. However, 70% of the foreign participants noted that they felt neither motivation nor amotivation due to COVID-19. It is important to note that none of the foreign participants described ongoing amotivation from the pandemic.

Therefore, with only 10% of the total participants from both populations claiming amotivation due to the COVID-19 pandemic, it can be concluded that while the industry suffered during the pandemic, motivation to pursue the career field was only slightly affected. Notably, some participants from both populations had initial concerns, but these were quickly alleviated and no amotivation remained. In several cases, the participants described how the goal of becoming a pilot transcended the events happening at that time. Several of the participants felt that their dream of becoming professional pilots had started long before the outbreak of COVID-19 and would continue after the pandemic ended.

The final point of interest in the analysis of amotivation during COVID-19 is that several participants from both groups noted that the pandemic helped them achieve their goals. The description of this assistance varied among the participants but included a strong desire to get out of the house/out of quarantine, the amount of time the quarantine freed up for the participants, which allowed them to focus on their training, and the realization that working in an office wasn’t desirable, but the idea of flying as a

profession was exciting. These effects show that many of the participants took the opportunity provided by the pandemic and turned what could have been limiting factors in their training into positive outcomes.

Conclusions

This study identified and explained the career choice motivation of pilots and the training pipeline process for individuals from different countries. The first area of inquiry identified the factors that motivate individuals to become pilots. The second compared those career choice motivational factors between American and foreign individuals. Finally, the third analyzed and compared the typical pipeline process that American and foreign individuals would follow from initial interest through to training professionally to become a pilot. As a result, the following conclusions have been drawn.

Conclusion 1

Individuals interested in becoming professional pilots are greatly and primarily motivated by the job rewards associated with being a pilot. The influence of family, teachers, mentors, or other pilots ranks second in importance. In some cases, the social status that accompanies the piloting career field is also a motivational factor. This ranking of motivation source categories was similar among all the study's participants, whether American or foreign.

In many cases, the participants described initial interest stemming from the influence of another party. This interest was commonly sparked by a family member, friend, or acquaintance introducing the participants to the aviation industry. In some cases, the influence came from a stranger in the aviation industry whom the participants observed from afar. However, the impact of the participants being first introduced and

subsequently influenced by an aviation industry member is a key moment in the participants' pathway into the industry.

Moreover, in most cases, the participants applied the motivation gained through the initial influence to push themselves to investigate the career field further. At this point, many of the participants were introduced to the available job rewards of being a pilot, such as salary, travel benefits, and lifestyle. The results show that these job reward factors became the primary motivational factor for the participants' desire to become pilots. Therefore, the first conclusion of this study is that initial interest in the aviation career field may commonly be sparked by the influence of a third party. Later, the job rewards discovered by the participants ultimately become the driving force that motivates them to take actionable steps toward pursuing a career in aviation.

Conclusion 2

The American and foreign participants cited similar sources of motivation, with only slightly different levels of importance placed on them. Both populations equally prioritized the influence of others, but the foreign population placed nearly all the remaining importance on job rewards. While the American population still considered job rewards to be very important, they noted more motivation stemming from status.

This finding demonstrates that regardless of their background and the respective pipeline process for becoming a pilot, individuals pursue a pilot career for nearly universal reasons. Although some individuals may choose to become pilots for less pragmatic reasons, pragmatic and practical reasons are generally valued. Therefore, the second conclusion of this study is that both the American and foreign participants are

motivated to become pilots for the same reasons, with only slight differences between the populations in terms of the importance they place on those reasons.

Conclusion 3

The pipeline process for individuals from foreign countries differs significantly from that of American individuals and is considerably more limited. As discussed in the results section, access to aviation appears to be a highly limiting factor for foreign individuals. In most cases, the foreign participants in this study had no opportunities to pursue a career in aviation until they became adults and left their home countries. Furthermore, most of the foreign participants explained that, in their respective home countries, the military is the primary or only option for pilot training. Therefore, every foreign participant in this study left their respective home country to enroll in a professional pilot training program abroad.

This difference in pipeline processes is significant because it shows how motivated foreign individuals must be to be willing to leave everything they know to pursue their goal of becoming pilots. Therefore, the third conclusion of this study is that early access to pilot training is only available in a few countries, resulting in many interested individuals having to wait until adulthood to begin training and then drastically alter their lives to pursue a career in the aviation industry.

Conclusion 4

COVID-19 had a major negative impact on the aviation industry, but the results of this study suggest that it had very little negative effect on those training to enter the career field. Both studied populations showed that the pandemic had either no effect or a negative effect on a minority of the population. Interestingly, 50% of all participants from

both populations described the pandemic as having a positive motivational effect. This was an unexpected phenomenon and was largely attributed to the participants' long-term vision of the industry, which left them undeterred by current challenges.

The American population showed a much larger positive effect from COVID-19 than the foreign population, while the foreign population showed much higher rates of apathy toward the pandemic than the American population. It is important to note that there were no lasting examples of amotivation in the foreign population, and only 10% of the American population showed sustained amotivation. Therefore, the fourth conclusion of this study is that while COVID-19 had severe negative impacts on the aviation industry as a whole, career choice motivation for up-and-coming pilots was largely unaffected due to many of the participants being dedicated to pursuing the lifelong goal of becoming a pilot, with a long-term view of the career field rather than a short-term reaction to a downturn.

Recommendations and Implications

This study utilized SDT to better organize and understand human motivation. Past studies have also applied SDT to understand career choice motivation in other fields. This study produced results that support the findings of past studies based on SDT. Angel (2017) also found that job rewards emerged as the most important factor when participants were considering a career in nursing. However, Angel (2017) also noted that influence was the least motivating factor. Though this supports the construct of SDT as a way of identifying and categorizing motivation sources, it also highlights the fact that different populations may be motivated differently.

This study's addition of the age of initial interest and starting point in the pursuit of career choice variables allowed for SDT to be applied to the earliest point of career choice motivation. This application of SDT may help to better identify how certain careers attract individuals in different age categories. Furthermore, the theory-based interview questions used in this study provided a foundation for interviewing participants on career choice motivation, categorizing their career choice motivation sources, and weighing the importance of each category. Therefore, the questions designed in this study should be applied by academics to other career motivation settings to discern key similarities and differences in how SDT applies to a variety of career domains.

In addition to this theoretical implication, this section will explain the implications of this study for both the aviation industry and academia. Recommendations for practitioners and academics will also be provided based on the findings of this study and their relationship to past research conducted on career choice motivation. The implications and recommendations are organized into the following three categories.

Implication and Recommendation 1

The data from this study revealed that the majority of pilots become interested in the aviation career field at a young age. It was also found that early aviation exposure and interest are typically initiated by a third-party influence. The implication is that without people of influence actively introducing new individuals to the industry, many good candidates for careers in aviation may not pursue the career due to a lack of exposure. Therefore, if practitioners in the industry want to increase the inflow of candidates to the aviation training pipeline, it is recommended that individuals who are currently connected

to the industry actively engage in exposing potential candidates to the field, particularly those at a young age.

Programs directed toward this already exist but are typically volunteer programs, for example, Young Eagles of the Experimental Aircraft Association and the You Can Fly program with the Aircraft Owners and Pilots Association, as well as other similar programs in specific schools and communities. Industry leaders may want to place emphasis on supporting or sponsoring these types of programs, as the data from this study shows that influence at a young age resulted in actionable steps toward pursuing aviation as a career for nearly every participant studied.

Furthermore, academia can glean important information from organizations providing early exposure to aviation. The aviation industry is a highly technical industry that requires a significant investment of time and money to gain entry. Academics working for or researching aviation universities may be interested in partnering with early aviation exposure organizations to better understand topics related to career choice motivation, early childhood education, the future demand for pilots, and the psychology of childhood involvement in highly technical fields.

Finally, as seen in Chapter II, prior research on career choice motivation in aviation is very limited, especially with regard to the age at which motivation is experienced. In fact, no prior study has used age as a primary factor when analyzing how individuals become motivated to become pilots. While some studies have found that students were interested or motivated at young ages, they failed to design research questions that focused on age as a variable. This study provides academia with data showing that early influence is a primary motivational factor for many candidates

entering the field of piloting. Therefore, future research should address how this phenomenon can be better understood and leveraged.

Implication and Recommendation 2

In addition to and in continuation of the points made in Implication 1, this study also identified that early interest in aviation, as initiated through influence, was also present in foreign countries. However, in every foreign case studied, the participants were unable to progress from interest to active pursuit of the career until adulthood. This implies that limited access to aviation in many foreign countries, including the lack of a robust general aviation community, is a significant limiting factor in onboarding pilots to the industry from foreign countries. While early influence may spark interest in a foreign individual, if there is limited in-country access and no clear path for the individual to progress from interest to active engagement, then the individual may lose motivation and move on to a career option with a more direct and accessible entry point.

Therefore, it is recommended that organizations seeking to increase the in-flow of pilots to the industry consider providing exposure and initial training options in foreign countries. While the logistical process may be difficult, the results of such an endeavor could provide solutions to significant problems in the aviation industry, including the overall need for future pilots and pilot diversity. Organizations interested in providing foreign pilot training for younger individuals could investigate the opportunity by either bringing the individuals to an aviation hub or taking aviation to them. For example, a flight training organization may be able to bring in young interested individuals from foreign countries for summer training camps or through exchange programs. Alternatively, the organization could organize touring aircraft and instructors that would

go to places with limited aviation industry presence and provide introductory training and mentoring that would allow the interested parties to better understand a clear pathway to aviation as a profession.

From an academic perspective, past research conducted on career choice motivation in pilots was almost exclusively focused on American pilots. One study (Ateş, 2016) did analyze students from another country (Turkey) but focused primarily on extrinsic sources of motivation to enroll in an aviation program and did not identify how access to aviation in the country did or did not affect motivation. The academic implication of this is that the current literature lacks data from pilots from foreign countries on how increased access to aviation may affect the interest of individuals from their respective foreign countries to consider aviation as a career.

Implication and Recommendation 3

While the initial interest was largely identified as being initiated by third-party influence, the data showed that ongoing motivation to pursue a career in aviation was fueled by the participants' reaction to the job rewards of being a pilot. In most cases, participants from both populations indicated that job rewards were their primary motivation to become professional pilots. This is an important finding because it provides both the industry and academia with a clear approach to progress candidates from initial interest through to long-term dedication and motivation to complete training and enter the career field by further explaining, advertising, and leveraging job rewards.

Thus, the implication here is that job rewards can be leveraged as a tool to acquire candidates and progress them from initial interest through to invested motivation to actively pursue and train for the career field. Consequently, it is recommended that the

aviation industry promote the job rewards of being a pilot through a variety of outlets, including, but not limited to, advertising campaigns, career fairs, social media, digital marketing, and recruitment events. With so much importance placed on job rewards by the participants from both populations studied, it is clear that ensuring interested parties are fully aware of all the positive job rewards of being a pilot will result in more individuals being willing to take firm steps toward pursuing the career. For academia, the understanding that job rewards resulted in more individuals investing their time and money into pilot training may provide a foundation for future research (to be covered in the next section) on how job rewards can be further leveraged in different ways and different industries. In a similar study by Nikle (2019), it was found that many people switched to aviation careers due, in part, to job rewards. The findings from both the current study and Nikle's (2019) study allow for a greater understanding of the importance of job rewards for those interested in a professional pilot career. Furthermore, the results can be used to spark collaborative action between academia and industry to leverage job rewards as a recruiting tool to solve the talent supply challenges in aviation.

Limitations and Future Research Opportunities

This study focused on career choice motivation research within an industry that has not been widely studied. Therefore, the results of this study serve as a foundation for many future research opportunities. Furthermore, as this study progressed, many interesting threads of inquiry were found that were not directly related to the purpose of this study but may provide opportunities for future research. The limitations of this study and future research opportunities are described below.

The limitations of this study largely stemmed from the pool of candidates available. While ERAU provides a vast pool of potential participants, the results may be skewed due to the pipeline of all the participants ultimately ending at the same destination. Future research could address this issue by including participants from a variety of flight training organizations. In addition, future research could address the various settings in which pilots are trained, such as military training programs, independent instructor training, and airline-sponsored training programs. This holistic view of aviation training opportunities will likely yield more complete results.

Furthermore, this study solely focused on the comparison between American and foreign students without regard to their location within the respective countries. While this approach allowed for a straightforward comparison, it potentially limited some of the qualitative differences between the participants from different states or different foreign cultures.

Finally, this study depended on voluntary participation. After many months of recruitment, only 20 participants volunteered. This limitation may have affected the results of the study. Therefore, caution should be exercised when generalizing the motivation of all pilots based on the responses of only 20 participants. Future research should study a larger population to uncover whether the trends found in this study become clearer in a larger data set or whether including a greater number of participants produces different results.

This study also identified potential avenues for future research. Specifically, future studies could explore career choice motivation for commercial pilots from specific countries. Rather than limiting the study to American and foreign categories, a future

study could look at specific foreign countries and compare them to better understand the details of each country's aviation industry and training process. This may provide a basis for future inquiry into what cultural, economic, or political variations in the country of origin may or may not affect career choice motivation for pilots.

Second, future research should be conducted on the effect of gender on career choice motivation for pilots. The majority of pilots employed in the aviation industry are male. By further researching the reasons why individuals become motivated and how gender plays a part in the motivation process, the industry may be able to seek more gender diversity among pilots. While this study was not designed to investigate the role of gender in the career choice motivational factors of pilots, it was identified that the responses between male and female participants varied in some ways. Motivation stemming from proving to others that females can be successful in a male-dominated career was identified by two female participants. This phenomenon should be studied in greater depth.

Next, future research should be conducted to better understand the effect of the general aviation industry on the commercial aviation industry. In some cases, general aviation is limited or non-existent due to governmental control. Some countries do not allow public airspace or the use of private aircraft for any reason. Therefore, anyone interested in aviation would either have to serve in the country's military or leave the country to pursue aviation. Future research could inquire into how this suppression of the general aviation industry may affect the country's commercial aviation industry or, perhaps, their economy as a whole.

Additionally, future research can examine the job rewards of being a pilot and their effect on motivation. A better understanding of how and which job rewards provide the most motivation to new entrants into the career field may provide a method for increasing the number of pilots available. Future research could focus on these job rewards and specifically study how each job reward affects different people from different backgrounds. The findings may help the industry better cater its job rewards and benefits to attract more people to become pilots.

The relationship between influence and other factors in career choice motivation should also be researched in greater depth. While it is understood that influence plays a major role in career choice motivation, the integration of a specific setting and environmental details into the influencing moment should be studied in more depth. This phenomenon of being influenced by a third party in an instant to ultimately change the course of one's life to pursue the observed profession should be researched to better understand how influence can be leveraged to motivate people to pursue certain career fields.

The effect of COVID-19 on motivation in other professions or at different stages in the career training pipeline is another area that should be researched in greater depth. Future research should seek to better understand how major disruptions in an industry affect the individuals in the training pipeline of that industry. Rather than focusing on amotivation or expecting negative reactions from those training for the career, a future study could seek to better understand all motivation-related emotions from the trainees and analyze the overall effect of a major industrial downturn. Furthermore, future research could analyze the effect of COVID-19 on the motivation of pilots who are past

the training phase and are actively flying as a profession. This may provide significant insights, as the expectations and opinions of trainees may differ from the feedback of those who experienced the pandemic and its associated challenges while actively flying as professional pilots.

Lastly, future research can employ a longitudinal design to determine which sources of motivation play the greatest role in individuals' persistence throughout the training process. Achieving initial training certification, which subsequently requires amassing flight hours, is just one part of the workload pilots take on to reach their aviation goals. Adopting a longitudinal design can also help researchers and practitioners determine which initial sources of motivation may lead to negative long-term consequences, such as mid-career pilot burnout. For example, it is important to know if candidates who are motivated primarily by the perceived excitement of travel and the pilot lifestyle are more prone to burnout and disillusionment once the realities and associated stressors of a pilot's lifestyle become more apparent.

Summary

Career choice motivation has been studied in a variety of professions but has largely been unapplied to the commercial pilot career field. This study sought to better understand how individuals became initially interested in aviation, how and when they began taking intentional steps toward the career, the factors that affected their choice to become pilots, and how their country of origin affected their decision-making process. In addition, the research considered the outbreak of COVID-19 to study how a major industry downturn affected those who were in the training pipeline for their professional

pilot career. This research topic was of significance due to the dramatic growth of the aviation industry in the past decade and the subsequent shortage of pilots experienced as the industry grew on a global scale.

The study's findings are novel in that they show that individuals from the United States and foreign countries typically become interested in aviation at a young age through the influence of others in the industry. The individuals then progress to training for the industry by attending flight training in countries that host large flight training organizations. Many of the foreign students had to leave their home countries to do this. When asked to rank the sources of their motivation to be pilots, participants from both groups ranked the job rewards of being a pilot as the primary motivational factor, followed by influence, then status. While the importance of each of those categories was similar for both the studied populations, the emphasis placed on specific motivational factors within the categories varied between the American and foreign participants. Finally, this study uncovered that the COVID-19 pandemic only had a small negative effect on the motivation of both populations. In fact, many participants noted that the pandemic had a positive effect on their motivation and described a long-term outlook on the profession rather than a short-term reaction to a downturn.

This study provided foundational and novel information in the field of career choice motivation for pilots, specifically focusing on early career choice motivation sources and the pipeline the participants followed to achieve their career goals. This study was the first within the career choice motivation literature to address initial interest in the professional pilot career among two groups of participants with differing access to the industry. The study then went on to clearly describe examples of the pipeline process for

individuals from a variety of backgrounds, another first in aviation career choice motivation research. Furthermore, this study provided the first-ranked data set of motivation sources for individuals training to be pilots. Finally, this study was the first to address the effect of COVID-19 on career choice motivation in pilots.

The results of this study will allow aviation industry stakeholders and academic researchers to further their understanding of the commercial pilot career field and the factors that motivate individuals to consider the profession. Furthermore, this study may be used as a foundation to better understand the global nature of aviation and how the industry is perceived, how it applies itself, and how it grows worldwide. Finally, the effects of the COVID-19 pandemic are still being studied and understood by both industry and academia. This study helps by providing a source of data on how the pandemic affected career choice motivation and how one industry and its aspiring professionals reacted and prevailed through a challenging time in human history.

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Appendix A: Qualitative Data

Question 1 Data

Please describe what you identify as the starting point of your interest in aviation.

	Interested		Answer	
Participant	American	Foreign	American	Foreign
1	Child		Observed pilots during family travel, attracted to lifestyle	
2	Child		Went to an airshow	
3		Child		Observed pilots during family travel. Attracted to pilot's status
4		Child		Family travel, Influence from parent's job
5		Teenager		Influenced by Dad's travel
6		Child		Influenced by Dad's military service, observing pilots
7	Child		Went to an airshow	
8	Child		Family member gave discovery flight	
9	Teenager		Family member gave discovery flight	
10	Child		Watched airplanes at an airport, grandfather influence	
11	Child		Went to an airshow	
12	Child		Visited air museum	
13	Child		Observed pilots during family travel, discovery flight	
14	Child		Family member gave discovery flight	
15		Teenager		Family travel
16		Child		Influenced by Dad's military service, observing pilots
17		Child		Observed aircraft fly overhead
18		Teenager		Observed aircraft from afar
19		Teenager		Attended a career fair, attracted to advertised job rewards
20		Child		Family travel, observed pilots

Question 2 Data

What were the initial steps you took towards a career in aviation?

	Started Training		Answer	
Participant	American	Foreign	American	Foreign
1	Teenager		Local flight school	
2	Teenager		Local flight school	
3		Adult		Enrolled in aviation college
4		Adult		
5		Adult		Enrolled in aviation college
6		Teenager		Glider program
7	Teenager		Young Eagles, JROTC	
8	Child		Youth Aviation Academy	
9	Teenager		Local flight school, then ERAU	
10	Teenager		ERAU summer camps	
11	Teenager		ERAU summer camps	
12	Adult		Enrolled in aviation college	
13	Teenager		Local discovery flights and some training	
14	Teenager		Scholarship for PPL through youth aviation program	
15		Adult		Enrolled in aviation college
16		Adult		Enrolled in aviation college
17		Adult		Enrolled in aviation college
18		Adult		Enrolled in aviation college
19		Adult		Enrolled in aviation college
20		Adult		Enrolled in aviation college

Question 3 Data

Please describe any individuals or external events that had an effect on your motivation to become a pilot.

	Source		Answer	
Participant	American	Foreign	American	Foreign
1	Family		Dad was not a pilot, but influenced him to be a pilot	
2	Family, overserved pilots		Dad was not a pilot, but influenced him to be a pilot, neighbor was a pilot	
3		No influence		All JR, no I
4		Family, traveling		Travelled as a child, mom was a flight attendant
5		Parents		Watching dad travel
6		Parents and HS mentor		Dad in military, HS mentor for gliding
7	Event, family		Reno air races and grandfather pilot	
8	Family		Uncle took flying	
9	Parents		Dad took flying	
10	Event		ERAU programs and pilot grandfather	
11	Event		ERAU programs	
12	Event, observed pilots		Museum, joined club	
13	Observed pilots, family		Invited to commercial cockpit, family in industry	
14	Family		Grandpa/Dad pilots	
15		Mentor		Mentor had him do a project on riddle
16		Family, visiting airport		Dad in military, watching airplanes
17		Observed airplanes		Saw an airplane in the sky
18		Observed airplanes		Saw an airplane at an airport
19		Acquaintance pilot		Family friend is a pilot
20		Observed pilots, family		Invited to commercial cockpit

Question 4 Data

Please describe if any and which job rewards of being a pilot affected your desire to pursue a career in aviation.

	Job Rewards		Answer	
Participant	American	Foreign	American	Foreign
1	Salary, lifestyle		Motivated by future pay opportunities and enjoyment of lifestyle	
2	Salary, Travel		Enjoy being paid to see the world	
3		Enjoyment, Control, Travel, Family travel		Heard a recruiter talk about benefits for himself and family
4		Travel		
5		Travel, salary, lifestyle		
6		Salary, travel, lifestyle		Not being in an office is a plus
7	Enjoyment of flight		No specific JR, more a love of flight	
8	No JR		No JR	
9	Travel, lifestyle		Not initially motivated by JR, now travel and no office	
10	Travel, salary		Not initially motivated by JR, now travel and salary	
11	Salary, lifestyle		Salary and work life balance	
12	Travel		Only travel	
13	Enjoyment of flight		No specific JR, more a love of flight	
14	Travel		Travel	
15		Travel		Travel and meeting new people
16		Travel and family travel benefits		Travel for self and family
17		Travel, enjoyment of flight		Only specifically travel, but also enjoys flying
18		Salary		Salary
19		Travel, lifestyle		Being able to travel both to be paid and for enjoyment. Views.
20		Enjoyment of flight, salary		Enjoys flying and feeling like they have a stable and reliable job

Question 5 Data

What aspects of being a pilot, as related to your social status affected your interest in aviation?

	Status		Answer	
Participant	American	Foreign	American	Foreign
1	Impressive		Enjoys having people impressed by his job	
2	Impressive		Enjoys having people impressed by his job	
3		Impressive		Enjoys having people see him as the pilot
4		Impressive		People think his job is difficult and that is motivating
5		Authority		Being in charge of a crew
6		No affect		
7	Proving		Showing people they can do it	
8	No affect			
9	Female (proving)		Showing people that females can fly	
10	No affect			
11	Impressive		Being looked up to by others	
12	Exclusivity		Impressive and exclusive job	
13	No affect			
14	No affect			
15		Female (proving)		Impressing others that she is female pilot
16		Impressive		Likes being attractive and impressive to others
17		Impressive		Likes to tell people they are a pilot
18		No affect		
19		Influential		Likes being respected and in charge
20		No affect		

Question 6 Data

Please list three sources of your motivation to be a pilot and explain why.
American Responses

Participant #	Ranking #1	Ranking #2	Ranking #3
American #1	JR (Travel)	JR (Salary)	S (Impressive)
American #2	JR (Meaningful)	JR (Travel)	JR (Enjoyment)
American #3	JR (Enjoyment)	JR (Purpose)	S (Proving)
American #4	I (Family)	I (Youth program)	I (Teacher)
American #5	I (Family)	JR (lifestyle)	JR (Salary)
American #6	JR (Travel)	I (Family)	JR (Salary)
American #7	I (Observed pilots)	JR (lifestyle)	JR (Salary)
American #8	JR (Travel)	S (Exclusivity)	I (Observed pilots)
American #9	JR (Enjoyment)	I (Family)	JR (Lifestyle)
American #10	I (Family)	JR (Travel)	S (Proving)

Note: JR= Job Rewards, I= Influence, S= Status

Foreign Responses

Participant #	Ranking #1	Ranking #2	Ranking #3
Foreign #1	JR (Travel)	JR (Salary)	JR (Benefits)
Foreign #2	JR (Travel)	JR (Enjoyment)	I (Control)
Foreign #3	JR (Travel)	JR (Salary)	JR (Lifestyle)
Foreign #4	JR (Enjoyment)	JR (Salary)	I (Family)
Foreign #5	I (Mentor)	JR (Travel)	I (Past travel)
Foreign #6	I (Family)	I (Observed aircraft)	JR (Travel)
Foreign #7	JR (Enjoyment)	JR (Salary)	JR (Travel)
Foreign #8	JR (Salary)	S (Influential)	I (Family)
Foreign #9	JR (Travel)	JR (Enjoyment)	I (Family)
Foreign #10	JR (Enjoyment)	JR (Salary)	I (Family)

Note: JR= Job Rewards, I= Influence, S= Status

Question 7 Data

Please explain the progression from interest to where you are now and include any information you can provide on how individuals in your country (or US) go about becoming a pilot.

	Personal Pipeline experience and/or typical for country of origin	
Participant	American	Foreign
1	Childhood interest, discovery flights, training as teenager, university	
2	Childhood interest, training as a teenager, university	
3		Limited opportunities in home country. First step is to learn English, then get into aviation training abroad.
4		Military is standard route, there are some possibilities of doing in country commercial training, but it is not popular. Most others go abroad.
5		Three ways: go abroad and get 1,000 hrs before returning, Korean military, or very selective Korean university flight training
6		Military is standard route, abroad is next option, flying for German airlines is very selective, attending US university helps
7	Childhood interest, discovery flights, university	
8	Childhood interest, family flights, youth program, sims, university	
9	Childhood interest, discovery flight, teenage flight training, university	
10	Childhood interest, youth program, teenage flight training, university	
11	Childhood interest (airshow), youth program, teenage flight training, university	
12	Childhood interest (museum), access to airplanes/airport, university	
13	Childhood interest (field trip), sims, discovery flight, university	
14	Childhood interest (family), scholarship for PPL, training as teenager, university	
15		Being a pilot in Germany is not popular, most are military or go abroad for training
16		Military is standard route, Korean university and flight training is second most popular but selective, go abroad if neither of the first two
17		Most pilots leave the country to learn to fly abroad. Some do PPL in country then leave. No one does all training in country.
18		Military is standard route, if not, then go abroad to learn to fly and come back to country once trained
19		Limited training options in country. Most leave the country if they want to learn to fly
20		Very limited options for both military and commercial training, must be Qatari. All others must go abroad.

Question 8 Data

Has the global COVID-19 pandemic affected your motivation to complete this training and to become a commercial pilot?

	Amotivation		Answer	
Participant	American	Foreign	American	Foreign
1	Negative		Became worried during COVID that recession would make it hard to get a job	
2	Negative		Put a damper on the excitement of being a pilot for a career	
3		No Affect		Initial effect, but short lived
4		No Affect		
5		No Affect		Time and $ is amotivation, not covid
6		No Affect		
7	No Affect		Wanted it long before COVID, didn't change mind	
8	Positive		Believes higher demand after forced retirements	
9	Positive		Realized cannot accept a career working inside	
10	Positive			
11	Positive			
12	Positive		Wanted to get out of the house and learn to fly	
13	Positive		Temp negative effect, turned around to positive as COVID lessened	
14	Positive			
15		Positive		
16		Positive		
17		No Affect		
18		Positive		
19		No Affect	Temp negative effect, turned around to positive as COVID lessened	
20		No Affect		

Appendix B: Common Aviation Industry Terms

Term	Meaning
Discovery Flight	An introduction flight commonly offered by flight schools or private aircraft owners to introduce aviation to potential pilots. Typical discovery flights do not include aviation training, but rather focus on expsoure to the flight environment.
Travel Benefits	Commercial air travel companies commonly offer travel benefits to employees and often extend those benefits to the employee's family members. The benefit typically includes travel onboard the company's scheduled service aircraft at the cost of tax-only to the employee or family member. Benefits may also include low fares for travel with partner airlines.
Local Flight School	For the sake of this study, a local flight school can be assumed to be a Part 61 flight school at a local airport. A local flight school is different from a typical university training program in that it provides basic flight training using its own cirrciulum and not for university credit.

Appendix C: Recruitment Flyer

WHY DID YOU CHOOSE TO BECOME A PILOT?

You are invited to participate in a PhD dissertation study designed to identify the key motivational factors for students from different cultural backgrounds to pursue a career as a pilot.

Participation involves an approximately 20-minute interview over Zoom. Participation is voluntary and responses are confidential. You must be 18 years or older and enrolled in the flight program.

CONTACT

Brett Watts, PhD in Aviation Business Candidate

wattsb@erau.edu