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Career Choice Motivation for Professional Pilots

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Abstract

This study identified 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 was based upon self-determination theory, as originally introduced by Deci and Ryan (2008). The research approach for this study was a semi-structured interview process where students were asked eight foundational career motivation source questions, and their responses were organized into career choice motivation categories. Results showed most participants became motivated to pursue a piloting career at a very young age. This early motivation was largely due to influence from third parties who had experience in aviation. However, the data also uncovered that the initial influence was not the primary factor in the career choice decision-making process. Most participants described the job rewards, such as salary and lifestyle, as being the primary motivation factor in choosing to pursue a career as a pilot.

Keywords: career choice, motivation, pilots

Introduction

During a pilot shortage, the commercial aviation industry relies on recruiting from a pool of individuals who are interested in a career in aviation. Career choice motivation is an area of research that seeks to identify and codify the key factors that lead individuals to pursue a certain career. Research on motivations for choosing a career has been conducted in many career fields but is limited in the piloting career field. This study seeks to understand why individuals choose to become pilots. Results may be used to understand and leverage aspects of the career field for the betterment of recruiting efforts for the ultimate success of the aviation industry.

Global air traffic is expected to grow between 3.2% to 5.3% per year for the next 20 years (International Air Transport Association [IATA], 2020). The aviation industry relies on qualified personnel to operate expensive and dangerous equipment. As the use of aviation becomes increasingly popular, the need for qualified pilots is increasing at the same rate. The certification of pilots is not keeping up with the increased demand. It is projected that over 260,000 new pilots will be needed between 2020 and 2029 (CAE, 2020). This represents both the replacement of existing pilots, as well as a significant increase in the total number of pilots needed: 387,000 were needed in 2020 and a projection of 484,000 will be needed in 2029 (IATA, 2020)..

The sharp increase in the number of pilots needed to serve in the global commercial aviation industry has started to raise questions of how to entice young people to pursue careers in aviation in order to meet this demand (Wood, 2022). Pilot training organizations need to fully understand the reasons why individuals want to become pilots so that they may employ methods to best target potential pilot candidates. By ensuring the pilot training pipeline is consistently filled with candidates, commercial air service operators can continue to grow to meet the ever-increasing demand for air transportation around the world.

Career Choice Motivation Background

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.

Existing literature investigating career choice motivation in pilots fails to address core motivational factors and typically only focuses on choices made, such as school or program choice, once the individual was already motivated to become a pilot.

This study primarily builds upon the work of Ryan and Deci (1980) in self-determination theory. While many theories relate to how humans are motivated, self-determination theory was developed in a way which allows motivational sources to be broken up into sub-categories and original sources of motivation. Self-determination theory (SDT) gained considerable recognition in the 1980s and has been used as the foundation for research on motivation since that time (Deci & Ryan, 1980). SDT is based on empirical data which 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). SDT 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, 2023). The core tenants of SDT are the three primary feelings a person experiences during the motivation process (Deci & Ryan, 2014):

- Autonomy refers to one's feeling of willingness, choice, or volition when making decisions and acting.
- Competence is one's feeling of being effective and confident in their behavior and goals.
- Relatedness is the need one has to be accepted and significant to others, and to feel caring towards and from those around them.

SDT presents these three human needs as 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.

SDT provided the theoretical foundation for the 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 by creating categories in which the three core tenants of SDT can be sourced. The Nursing Motivation Measure used SDT and its identified types of motivation (autonomy, competence, and relatedness) to further break down motivation origin into three potential types of sources:

- Influence of others includes motivation sources such as parental expectations, friends' influence, or role models' influence.
- Status refers to the internal positive gain a person gets from external forces and the admiration or positive perception of the person's field.
- Job rewards 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. This tool allows for the grouping of interview data into separate bins of motivation sources, allowing for clear comparisons when analyzing motivation between different groups of individuals. Finally, by employing the use of this scale, this research is able to rank which of the three motivation origin sources most affected the participants interviewed, creating a qualitative dataset in the process, and allowing for comparative analysis. Therefore, SDT provides this study with the theory needed to understand the core tenants that affect human motivation, and whether that source is extrinsic or intrinsic (sourced from within oneself, or from

an external stimulus). Building upon the theory, the chosen scale allows for the sources of influence to be more easily organized into three potential source categories. See Table 1.

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
Extrinsic	Job Rewards	Motivating factors stemming from the external rewards of a job, such as earning potential
Extrinsic	Status	Motivating factors stemming from external perception, such as prestige or career respect from others
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
Intrinsic	Status	Motivating factors stemming from an internal desire to increase status

While there have been some studies related to career choice motivation for pilots, most focus on specific aspects of the career field or training process. This study aims at identifying core motivational factors, as organized through SDT to clearly understand the primary reasons pilot candidates pursue their career.

Methodology

This study employs a phenomenological qualitative approach using semi-structured interviews to identify the key career motivational sources for flight students enrolled in aviation

programs in the United States. This approach will allow students to convey their experiences and sources of motivation in their own words, granting the students the ability to explain their unique perspectives and thus allowing for the most variety in possible motivation sources.

Research Question

What are the key factors motivating individuals to pursue a career as a professional pilot?

Data Collection

The source of data for this study are students from Embry-Riddle Aeronautical University (ERAU) enrolled in the Aeronautical Science (professional pilot) program. ERAU 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 very diverse student population with 110 countries represented in their 2021-2022 academic year. The diverse populations matched with the aviation-centric educational programs makes ERAU an advantageous setting for data collection in this research. Embry-Riddle has two residential campuses in Florida and Arizona, a large international campus in Singapore, and a virtual campus for distance learning.

Recruitment for study participants involved working with university leadership to obtain a list of all flight training students enrolled on both the Prescott, AZ and Daytona Beach, FL campuses. An informational flyer was made and approved for mass dissemination among the Aeronautical Science degree program (flight training) students. The flyer included information about the study and the type of involvement being requested of the students. The flyer was emailed to all applicable students and participants were identified through their responses to the email. All flight students at the university were invited to participate with no preference given to the nationality of the student, the type of piloting they were training for, or the stage of flight

training they were enrolled in. Students volunteered to participate in this study to identify the source of their motivation to pursue careers in aviation. Twenty volunteers were interviewed. Each interview lasted for approximately 20-30 minutes and was conducted using Zoom internet conferencing. Voice recordings were then transcribed and submitted to NVIVO, a tool used for coding and analysis. Within NVIVO, the data is coded, which separates the participant's responses into "bins" of motivational sources. The bins can then be analyzed individually to answer research questions pertaining to the motivational constructs being studied. The questions asked to each participant are presented in Table 2.

Table 2

Interview Questions

Number	Question	Motivation Source
1	Please describe what you identify as the starting point of your interest in aviation.	Baseline
2	What were the initial steps you took towards a career in aviation.	Baseline
3	Please describe any individuals or external events that had an effect on your motivation to become a pilot.	Influence
4	Please describe if any and which job rewards of being a pilot affected your desire to pursue a career in aviation.	Job Rewards
5	What aspects of being a pilot, as related to your social status affected your interest in aviation?	Status
6	Please list three sources of your motivation to be a pilot and explain why.	Motivation Source Importance Ranking

All participants were asked the same questions in the same order. In addition to the listed questions, clarifying questions may have also been asked such as "can you elaborate more on that?" or "that is interesting, please explain why you felt that way." Finally, the researcher also

asked questions in between the primary question 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?

Results

The baseline portion of the interview was intended to identify the initial point of interest in aviation, both the source of interest and the age at which the interest was initiated. Furthermore, the second baseline question sought to identify how the participants progressed from their initial point of interest into their first actionable step toward pursuing aviation as a career. Age was grouped into three categories; "Child," meaning before 13 years old, "Teenager," meaning 13 years old through the age at which they enrolled in college, and "Adult," meaning college enrollment age and later. The first baseline question addressed the age of the initial stimulus for wanting to become a pilot is presented in Table 3. Results showed that 75% of participants became interested in aviation as children while 25% of participants became interested as teenagers. None of the participants initially became interested in their adult years.

The second part of the first baseline question aimed at identifying the initial stimulus that sparked the first interest in aviation for the participant. The results are presented in Table 3.

Table 3

Initial Stimulus

Stimulus	% of Responses
Airport visit/Commercial air travel experience	30%
Discovery/introductory flights	20%
Attended aviation event/visited aviation museum	20%
Influence from someone in the aviation industry	15%
Observed aircraft from afar	10%
Career fair	5%

The second baseline analysis question aimed at identifying how the participants took their initial interest and acted upon it, taking their first steps towards turning their interest into a career path. The question was also aimed at understanding the age at which the individuals took their first intentional step towards a career as a pilot. The results showed that 50% of the participants took their initial career training steps as adults, with 45% starting their training as teenagers and 5% as children. The setting in which the participants were able to begin their training is described in Table 4.

Table 4

Initial Training Setting

Stimulus	% of Responses
University flight training program	50%
Youth programs	30%
Local flight school programs	15%
Follow on from discovery flight (private training)	5%

As described in the career choice motivation background section, the sources of motivation can be broken down into three categories: influence, job rewards, and status. The following results address the percentage of participants noting key motivation sources within each category, and what stimulus within each category provided the motivation.

The first category studied was influence. The results showed that 43.5% of responses were categorized as influencing the participant to pursue a career as a pilot stemming from family members. Whereas 19.5% of responses described motivation stemming from the influence of observing other pilots while 14.5% of responses were categorized as motivation stemming from attending an event that featured aviation as a career possibility. Less frequent responses included influence-related motivation stemming from watching airplanes fly (13.5%) and from mentors (9%). Within the influence sources of motivation, it is important to note that 80% of the influence motivation stemmed from other people influencing the participant (animate), with only 20% stemming from inanimate sources.

The second category studied was job rewards. Seventy-five percent of the participants noted job rewards as being a significant source of motivation to pursue a career as a pilot. Within the job rewards category, 37% of the responses noted travel opportunities as a source of

motivation. Salary opportunities represented 24% of responses and 17.5% of responses were attributed to the lifestyle of a pilot. Lesser responses included the enjoyment of flight (14%), travel opportunities for family members (5%), and a sense of control (2.5%).

The third category studied was status. It is important to note that 36.5% of the responses indicated that status was not a significant factor in their decision to pursue aviation as a career. For those who were motivated by status, 37.5% of responses noted being impressive to others as motivating. Lesser responses included proving to others that they could become a pilot (15.5%), being influential in their community (5.5%) and exclusivity (5%).

Finally, the participants were asked to rank their top three sources of motivation. When broken down into the three categories, the results show that 62% of the top three ranked motivation sources were within the job rewards category while 30% of the ranked motivation sources were classified as stemming from influence, and only 8% stemmed from status. The complete results are presented in Table 5.

Table 5

Career Choice Motivation Sources Ranked

Participants	Ranking #1	Ranking #2	Ranking #3
#1	JR (Travel)	JR (Salary)	S (Impressive)
#2	JR (Meaningful)	JR (Travel)	JR (Enjoyment)
#3	JR (Enjoyment)	JR (Purpose)	S (Proving)
#4	I (Family)	I (Youth program)	I (Teacher)
#5	I (Family)	JR (lifestyle)	JR (Salary)
#6	JR (Travel)	I (Family)	JR (Salary)
#7	I (Observed pilots)	JR (lifestyle)	JR (Salary)
#8	JR (Travel)	S (Exclusivity)	I (Observed pilots)
#9	JR (Enjoyment)	I (Family)	JR (Lifestyle)
#10	I (Family)	JR (Travel)	S (Proving)
#11	JR (Travel)	JR (Salary)	JR (Benefits)
#12	JR (Travel)	JR (Enjoyment)	I (Control)
#13	JR (Travel)	JR (Salary)	JR (Lifestyle)
#14	JR (Enjoyment)	JR (Salary)	I (Family)
#15	I (Mentor)	JR (Travel)	I (Past travel)
#16	I (Family)	I (Observed aircraft)	JR (Travel)
#17	JR (Enjoyment)	JR (Salary)	JR (Travel)
#18	JR (Salary)	S (Influential)	I (Family)
#19	JR (Travel)	JR (Enjoyment)	I (Family)
#20	JR (Enjoyment)	JR (Salary)	I (Family)

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

The interview data supported the literature on self-determination theory and related studies, showing that the primary career choice motivation factors can be easily categorized into three main sources: influence, job rewards, and status. The twenty flight training students who participated in this study provided evidence that the strongest motivation source category was job rewards, followed by influence. The status category proved to be the least motivating for the participants of this study. These results corroborate and build upon the results from past research, including Lutte (2018), who found that increasing job rewards of being a pilot resulted in increased entrants into the career field. However, this study adds to Lutte's findings by further

explaining how individuals became initially interested in their career, which proved to be largely due to the influence of others. Furthermore, this study provides a data set supporting the beliefs of Olson (2008), who suggested that increasing interest in aviation careers can be accomplished by introducing young people to the benefits of an aviation career early in their lives.

Most importantly, this study contributes to the academic understanding of career choice motivation, as well as builds upon the applications of SDT. 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 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.

Implications and Recommendations

The data from this study uncovered that most pilots become interested in the career field at a young age. It was also uncovered that early aviation exposure is typically initiated by someone who influenced the individual and got them interested in aviation. The implication is that without influencers actively introducing new individuals to the industry, many who may have been good candidates for careers in aviation would not pursue the career due to lack of exposure. The recommendation is that if practitioners in the industry want to increase the flow-through in the aviation training pipeline, individuals who are currently connected to the industry need to be actively engaged introducing new individuals to aviation, particularly at a young age.

These types of programs already exist but are typically volunteer programs such as 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 early influence resulted in actionable steps towards 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 amount of investment in both time and money to enter. Academics working for or researching at aviation universities may be interested in partnering with early aviation exposure organizations to better understand topics including, but not limited to, career choice motivation, early childhood education, the pilot shortage, and the psychology of childhood involvement in highly technical fields.

Prior research conducted on career choice motivation in aviation is very limited, especially regarding age of motivation. In fact, no prior study used age as a primary factor when analyzing how individuals become motivated to be pilots. Some studies found that students were interested or motivated at young age but failed to design research questions that focused on age as a variable. This study provides data showing that early influence is a primary motivating factor for many entrants into the field of piloting. Therefore, future research should address how that phenomenon can be better understood and leveraged.

While initial interest was largely identified as being initiated by third-party influence, the data showed that on-going motivation to pursue a career in aviation was fueled by the participants' reaction to the job rewards of being a pilot. In most cases, individuals indicated that job rewards provided the primary motivation to become a professional pilot. This is an important finding because it allows for a clear approach in explaining, advertising, and leveraging job rewards for both industry and academia to progress a candidate from initial interest to the long-term dedication and motivation needed to complete training and enter the career field.

The implication is that job rewards can be leveraged as a tool to solidify a candidate and to progress them from initial interest to invested motivation to actively pursue and train for the career field. The recommendation is that the aviation industry can promote 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 recruiting events. With so much emphasis placed on job rewards from the participants of this study, it has become clear that ensuring that interested parties fully understand all the positive job rewards of being a pilot will result in more individuals being willing to take firm steps towards pursuing the career.

Limitations and Future Research

The limitations of this study largely stemmed from the pool of candidates available. While Embry-Riddle Aeronautical University provides a deep pool of potential participants, the results may be skewed due to all the students ultimately becoming students at the same university. 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 the training opportunities will likely yield more complete results.

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

Finally, the relationship between influence and other factors in career choice motivation should be researched in greater depth. While it is understood that influence plays a major role in career choice motivation, the integration of a setting and environmental details into the influencing moment should be studied in more depth. As seen in this study, several students became motivated to pursue their career simply by seeing pilots from afar. The dramatic effect of being influenced by a third party and having that experience ultimately affect a major life choice, such as a career choice, should be researched in greater depth.

Conclusion

Individuals who are interested in becoming a professional pilot are largely motivated by the job rewards associated with being a pilot, with the influence from family, teachers, mentors, or other pilots ranking second in importance. In some cases, the social status that comes along with the piloting career field was also a motivating factor. Within the influence category, most participants noted the influence coming from a third party who was involved in aviation. This interest was commonly sparked due to a family member, friend, or acquaintance introducing the person to the aviation industry. In some cases, the influence came from a stranger in the aviation industry who the participant observed from afar. However, the impact of the participant being first introduced and subsequently influenced by an aviation industry member is a key moment in the participant's pathway into the industry.

Furthermore, in most cases, the participant then applied the motivation gained through the initial influence to push them 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 rewards became the primary motivating factor for the participants to become pilots. Therefore, it can be concluded that initial interest may commonly be sparked by a third party through the influence category, while the job rewards that were later discovered ultimately became the motivation that the participants needed to progress from interest to actionable steps towards pursuing the career field.

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