



HOW ARE THE AIR FORCE PILOT RETENTION MEASURES  
WORKING IN THE MOBILITY AIR FORCES?

GRADUATE RESEARCH PAPER

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AFIT-ENS-MS-20-J-055

DEPARTMENT OF THE AIR FORCE  
AIR UNIVERSITY

**AIR FORCE INSTITUTE OF TECHNOLOGY**

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Wright-Patterson Air Force Base, Ohio

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GRADUATE RESEARCH PAPER

Presented to the Faculty

Department of Operational Sciences

Graduate School of Engineering and Management

Air Force Institute of Technology

Air University

Air Education and Training Command

In Partial Fulfillment of the Requirements for the  
Degree of Master of Science in Operations Management

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June 2020

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## **Abstract**

The Air Force has been battling the inability to fill requirements-based manning levels for at least the last four decades. Manning levels seem to ebb and flow with the currents of economic health, commercial airline hiring, and culture within the Air Force. Measures taken by the military to curb these currents are a pebble trying to curb the direction of a wave. Sure, enough pebbles, strategically placed, can curb a wave, but they need to be systematically employed in such a way as to continue the progress from the last iteration.

In 2017, General Goldfein, Chief of Staff of the Air Force, empowered Brigadier General Koscheski to stand up and lead an organization, named the Aircrew Task Force, focused on investigating, testing, and developing initiatives to improve the overall manning health of this so-called "national crisis" (McCullough, 2018). Since its birth, the task force has been through three directors and, after listening to continuous feedback from the masses, has executed numerous initiatives to address the areas of consistently negative feedback.

This research used a mixed-method research analysis approach to investigate the effect of current retention measures within the Mobility Air Forces pilot community. To do this, a survey was developed to test two specific areas: current aircrew climate and subjective interpretation of effectiveness on specific measures currently being employed. Inevitably the survey was not employed for a variety of reasons and analysis needed to be performed on existing data sets from an Air Force survey, but the groundwork has been laid for future researchers to execute. Lastly, a forecast was built in the final stages of this research to forecast the effects of the COVID-19 global pandemic on Air Force MAF pilot retention. These projections should help gain insight into near-term pilot manning requirements.

## **Acknowledgments**

I want to express my sincere appreciation to my wife and children for always being there for me and allowing me the time this year to address this research. I would also like to express my sincere appreciation to my faculty advisor, Dr. Al Thal, for his guidance and support throughout this research effort. I also owe much of my gratitude to the sponsor of my research Colonel Scott “Missing” Linck for his continued mentorship and constant feedback throughout this year. Thank you for granting me the latitude to maneuver throughout this body of research and to see where it took me. Lastly, I would like to express my sincere thanks to Dr. Esteban Soriano, for his review and continued feedback of my methodology throughout my drafting of this research.

To Mr. Al Harris, Mr. Bill Gaskins, Mrs. Pamela Bardot, and the EOS team, thank you for your continued support throughout this chaotic year. I know we haven’t been easy on you, but you always came to our class with a smile, asking what you could do to help. Lastly, to my classmates, I could not have asked for a better group of friends to spend a year with. All of you have truly made this the ‘best year of my career.’ I look forward to serving alongside you of all very soon.

Take care.

Ryan N. Strength

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# HOW ARE THE AIR FORCE PILOT RETENTION MEASURES WORKING IN THE MOBILITY AIR FORCES?

## I. Introduction

The retention and continuity of trained aviators exiting the Air Force mid-career, in pursuit of other ventures, continues to impact the Air Force's critical organizational and delivery elements. Numerous studies undertaken since the 1980s have generated data to understand better and mitigate the environmental, economic, social, familial, and other events and conditions that influence an aviator's decision to exit Air Force service at the mid-career point. Such exit actions speak directly to the Air Force's investment of time and other critical resources on what was initially envisioned as the training and cultivation of a cadre of aviators pledging long-term, career-long service.

In 1984, RAND Corporation (RAND), a global research organization, undertook a study in hopes of generating a retention model for Air Force officers. The study focused specifically on calculating metrics officers would utilize to determine if it was better for them to voluntarily stay in the military or leave. It focused on a wide range of variables, including compensation, retirement benefits, and personnel policies. A key finding concluded that offering monetary retention incentives at the *completion* of an officer's contractual commitment did little to influence the stay/leave decision of a rated officer (Gotz & McCall, 1984).

## General Issue

The current decades-long trend of aviator mid-career exiting seems to correlate, at times, with a sinusoidal trend line, one that peaks and valleys on a variety of factors to include economic health, DoD military budget, military requirements, civilian competition, and now military culture. Some of these valleys have been self-induced, such as the 2010 Voluntary Separation Program (VSP) and the 2014 Reduction in Force (RIF) initiatives for targeting year groups (AMC/CSL, 2019), which may have served to worsen the already dwindling perception of culture within the force (reference Figure 1 for changes in pilot requirements over time). Readiness rates have predictably drifted from green to yellow to red, even with the downgrade of manning ratio percentages to aircraft (ACTF, 2019). These effects have rippled out to all operational wings, forcing Airmen to feel the continual strain on training requirements, operational flying, and administrative necessities asked and required of them, all while trying to manage a sustainable work-life balance.

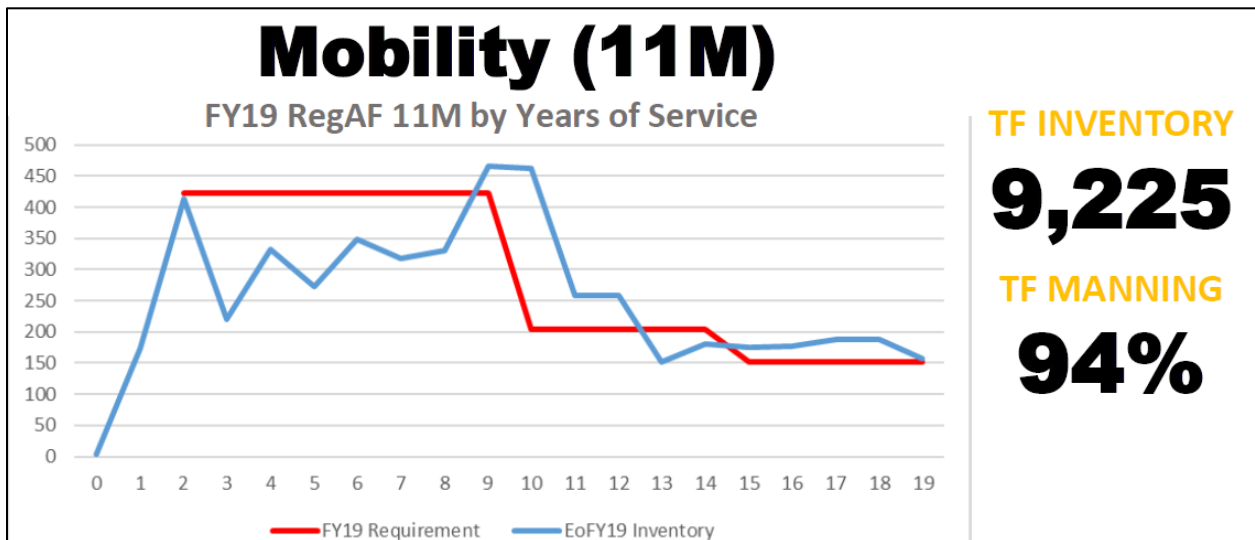


Figure 1. Pilot Health - Mobility Pilot Inventory (HAF/A3, 2019)

This problem is not a new one. In the 1980s, commercial airline hiring began to surge, and the Air Force had to find a way to compete with a higher-paying, more pilot-oriented way of life that the consumer airline industry was more than willing to offer. By 1985, airline hiring had hit a then high-mark of 11,000 pilots a year. According to Kafer (1998), this forced government military branches to take action at the risk of losing a significant portion of its trained and experienced aviator workforce. By 1989, military-to-civilian aviation compensation had leveled out, to some degree, and through these measures, the military was able to reduce the level of migration of its workforce (Stone, Wiggins, Turner-Holland, & Looper, 1998).

Since then, and in more contemporary times, the Air Force has been challenged trying to keep enough pilots operational to meet all taskings and requirements. Observationally, the legacy model of old that anticipated a majority of operational aviators would make the Air Force a career, and in doing so, adopt the careerist progression system as a blueprint for success, may be unrealistic in today's culture and environment. A new look at aviator exiting trends and influencing factors may well be required to update the current aviator staffing and training paradigm so that it better serves top Air Force decision-makers.

### **Problem Statement**

In recent years, data indicates that mobility pilots *increasingly* have been turning down the aviation bonus and opting for the path of an early exit from active duty in the hope of pursuing employment elsewhere. As shown in **Error! Reference source not found.**, comparatively measuring Aviation Bonus (AvB) take rates for Mobility Air Force (MAF) pilots versus major airline hiring resulted in a negative 93 percent correlation between the two variables. Although difficult to prove causality, it is easy to identify the connection between the

two variables, and in 2020 we sit at the peak of the airline hiring trend. This substantial aviator reduction in staffing across the board has markedly increased the Mobility Air Force (MAF) Personnel TEMPO (PERSTEMPO) Program among operational flying Squadrons, with the countering negative consequence of decreasing overall MAF world-wide capabilities.

PERSTEMPO is essentially a measure of a service member's tours that station them away from their home base for longer than 30 days, or anytime they are stationed in a hostile setting (Hosek, 2004). In response to this trend of negative exodus from the Air Force, Chief of Staff of the Air Force (CSAF), General David L. Goldfein, directed the stand up of an organization, the Aircrew Task Force (ACTF), to (1) determine why increasing numbers of aviators are deciding to exit the Air Force mid-career and (2) provide actionable recommendations to the CSAF on how to effectively mitigate this pilot migration trend (Airman Magazine, 2018).

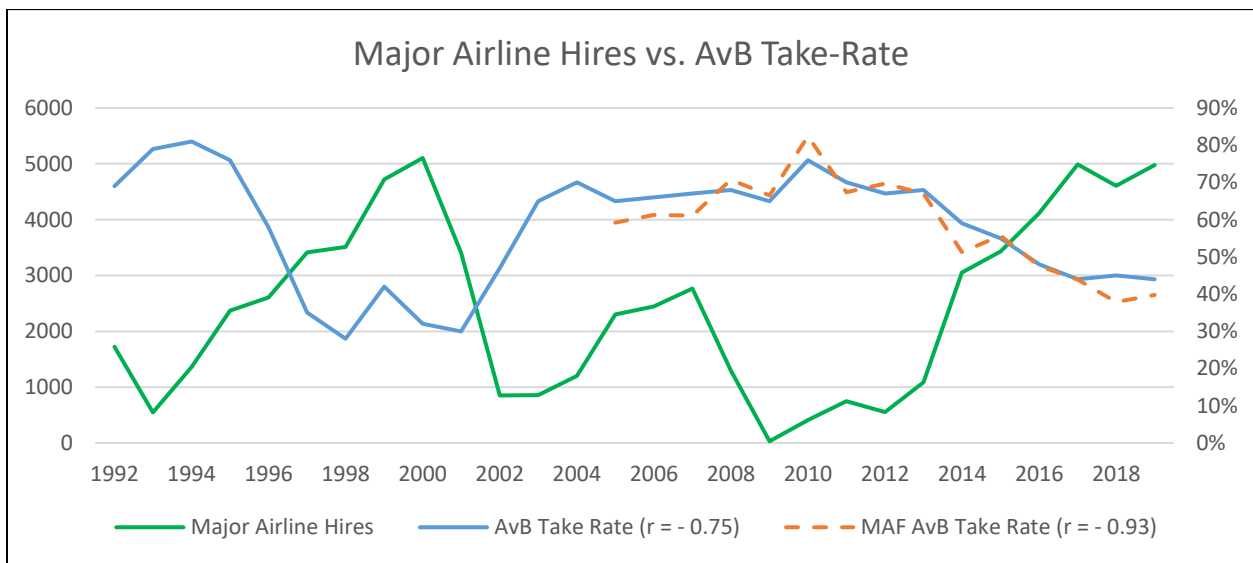


Figure 2. Historical Major Airline Hires vs. Air Force Aviation Bonus Take Rates (adapted from FAPA.aero Major Airline Pilot Hires and AFPC Retention Reports, 2019)

## **Research Focus**

This research focused on developing a survey for future use to assess career intentions for pilots in the MAF in response to measures enacted by Headquarters Air Force (HAF) regarding aircrew retention. The focus is specifically aimed toward the pilot community as this society of individuals have continuously pled their grievances towards improving Airmanship culture. It will generate data regarding current conditions, considerations, and trends – referred to as "influencers" – that are impacting today's aviators and their decisions to remain in the military or exit mid-career. The data generated from the survey may assist decision-makers in determining if current strategies are indeed increasing retention rates or if perceived growing exit rates may require new retention initiatives. In addition to developing a survey, the research also examines data from provided by Air Force, Policy Analysis (AF/A1XD), which measured various career decisions for a variety of Airman throughout various places in their careers. Filtered down, this survey contained 25 questions specific to MAF pilots and their subjective opinion on the culture of the Air Force and their future career intentions.

## **Research Objectives/Questions**

The primary objective of the survey is to identify how the different measures employed by the Air Force are impacting individual perception and retention of MAF pilots. Once administered, the survey will provide data to address the following questions.

1. What effect do the currently employed retention measures have on MAF pilots and their perception of Air Force culture?
2. How is the Air Force determining what retention measures need to be employed?
3. Is the ACTF focused on the most appropriate and prioritized initiatives?

4. What has history proved from the previous economic downturns and their effect on pilot retention?

A second objective of the research is to examine responses by MAF pilots to the 2019 Career Decision Survey to find determining factors that influence their decision in exiting the Air Force.

1. What are the factors where the Air Force is viewed as underwhelming by MAF pilots?
2. What factors influence MAF pilots the most in their decisions to leave the military?
3. Is there a distinct correlation between unsatisfied factor and decisions to exit the military?

Finally, a third objective is to determine if the impending economic recession caused by the COVID-19 pandemic influence MAF pilots decision to stay or leave the military.

## **Methodology**

Both quantitative and qualitative research strategies will capture respondents' views and data regarding contemporary trends, attitudes, and opinions on the different implemented retention efforts and culture. Along with specific references to current retention measures employed by the Air Force towards pilots, the survey will also include specific psychological constructs identified within these initiatives to measure a correlational change in the perception of the Air Force. The psychological constructs included will be Trust, Organizational Culture Profile, Pay Satisfaction, Job Satisfaction, Organizational Commitment, and Perceived Organizational Support and will be elaborated more in Chapter II. These constructs have appeared throughout the literature review as show having a clear correlation with retention and



will aid in gaging impact of specific measures throughout. The survey will be distributed to a purposively sampled cohort of Air Mobility Command (AMC) operational squadrons, focusing on pilots from various experiences, retirement programs, and years of service. Once compiled, the quantitative and qualitative data will be analyzed to determine the effectiveness of specific retention measures referenced by respondents. Any documented constructive suggested amendments generated by surveyed aviators will be annotated and made available to the ACTF.

Following, a quantitative analysis of demographically cleansed data provided by AF/A1XD was accomplished to identify factors negatively affecting a pilot's decision to remain in the Air Force. Data provided by AF/A1XD were resultant data collected from the 2019 Career Decisions Survey to Airmen and were cleansed to identify MAF pilots exclusively. The applicable survey data were converted to five-point Likert scale form to perform a Spearman correlation analysis on all of the 40 analyzed question data. IBM SPSS statistical software and Microsoft Excel were used to perform computational analysis on these data (Appendix D). The resultant analysis allows for a statically significant conclusion on identifying factors negatively affecting retention.

Lastly, a quantitative analysis of AvB and U.S. Gross Domestic Product (GDP) will be analyzed to generate a regression forecasting for AvB consistent with a post-economic recessive environment. Data were pulled from existing Air Force retention reports to quantify annual changes in pilot retention and U.S. Bureau of Economic Analysis (BEA) to quantify annualized changes in GDP and GDP growth per quarter. In order to produce an equation allowable for short-term future forecast, Microsoft Excel was used to perform a regression analysis on these factors. This analysis allowed for a measurable forecast over the next few years consistent with

correlation between GDP, GDP growth per quarter, AvB, and respective economic response to historically comparable occurrences.

### **Assumptions**

This study will assume that Air Force manning and funding will remain constant and that there are no impending initiatives to force shape staff. Further, this study will develop a subset for the MAF and will assume that the findings resonate with the rest of the populace.

### **Limitations**

This research encountered a variety of limitations throughout the research, which led to time delays, physical and virtual limitations, and connectivity hurdles that needed to be overcome. The first was a 15 percent reduction in time to perform the study and research project, as the entire curriculum for Advanced Studies of Air Mobility (ASAM) decreased from a 13-month to an 11-month program. Moreover, during the initial stages of this research, the Corona-virus (COVID-19) pandemic emerged globally. From this, a variety of limitations ensued, which included but was not limited to a global health crisis, social distancing, federal travel bans, military stop movement orders, state and federal stay at home orders, supply chain disruptions, overwhelmed telecommunication networks, and a global recession. These disruptions affected quality research by restricting access to the approving officials, global networks, dedicated and focused research, and access to the surveyed population. As a result of these limitations, a majority of the research efforts were focused on the literature review, methodology, and survey development.

There were a variety of areas in the survey that were being tested and analyzed from multiple perspectives. So much so, that survey fatigue would most likely play a part throughout the data collection portion of the research and then propagate into the finding. A large number of questions pertained to the demographics of the surveyed population and perceived culture within the Air Force. These questions are vital to assessing the current situation that each surveyed member is experiencing so that their responses can be appropriately categorized and measured. However, the extensive research into the characteristics of each surveyed individual may adversely affect the survey's specific findings.

Lastly, after months of formulating research by dissecting current retention measures, analyzing psychological constructs, coordinating with participating operational Squadrons, and developing an Air Mobility Retention Measures (AMRM) Pilot Survey, a request to disperse the survey was denied by the Air Force Survey Office (AFSO) at the Air Force Personnel Center (AFPC) on April 29, 2020. With this limitation occurring in the final stages of the research project, a more generalized review of the MAF retention measures must be incorporated into the study.

## **Implications**

The Air Force has been impacted by pilot manning issues for decades, with data indicating increased trends and impacts, particularly since the early 1980s. Numerous studies have identified the commercial airline industry and its cyclical hiring periods as the primary catalyst to attract Air Force aviators. Until the recent COVID-19 interruption, airlines worldwide were in the midst of another substantial hiring period. Although this pandemic will most likely stall the exodus of Air Force pilots, the hiring cycle will eventually return. Therefore, it is

pertinent that the Air Force find ways to curb the declining retention levels. With the findings produced by this research, the HAF will be able to adjust their tactics towards pilot retention and more effectively employ ACTF efforts towards retention.

### **Research Project Structure**

This research investigates whether the employed retention measures are palatable responses for MAF aviators and if these actions are steps in the right direction to foster a more employee-focused culture. Chapter II will review the literature from the last few decades focusing on Air Force pilot retention and associated factors. Next, Chapter III will review the methodology employed in collecting and analyzing the data. Here an outline of the survey generation, employment plan, and regression analysis will be detailed. Chapter IV will include all analyses and findings that resulted from the data collection portion of the research. The main themes from the findings will be detailed in this section, focusing on the essential data pertaining to the research objectives and questions. Lastly, Chapter V will conclude the research by summarizing its findings and laying out recommendations for action.

## **II. Literature Review**

The Air Force's ability to fill its pilot staffing requirements has continuously been a workforce challenge, whether having to deal with a struggling United States economy resulting in staffing overages or having to compete with a strong pilot hiring market and, thus, struggling to fill congressionally funded billets. Over the last four decades, this operational cycle has occurred multiple times, particularly when the military is saturated with personnel, following a conflict, and the resulting drawdown of personnel in order to meet its current financial end state. Alternatively, when the economy is doing well, and there is an abundance of ready employment options outside the military, it can be a substantial challenge for the military to retain its performers. This workforce challenge can result in extensive measures taken by the Air Force to retain its vital workforce and key performers. When the military had encountered these barriers in the past, it responded with monetary countermeasures.

This chapter will review areas in recent history where changes in military and economic climate have affected demands for the operational workforce. Further, it will show how these changes have affected Air Force pilot retention as the draw for civilian employment with a higher quality of life has been more plentiful in certain areas in time. Next, a review of past research on military retention will be reviewed, as there have been many studies of the last few decades regarding this continuous shortfall. Next, a review of psychological constructs will be summarized as they will later take part in the data collection method and apply it to its findings. Lastly, as COVID-19 has emerged as a global pandemic and drastically affected the economy in 2020, a look at last economic downturns and their effect on pilot retention will close out the remainder of this chapter.

## **Changing Climate Affecting Pilot Retention**

Commercial airlines struggled to maintain profitability after the September 11, 2001, terrorist attacks (9/11) on the Pentagon and World Trade Center towers. In particular, a dramatic drop in elective and business air travel drastically impacted airline business demand. Furthermore, the time required for a governmental assessment and corresponding proactive response of aviation safety regulations were identified as impacting passenger loads.

The 9/11 attacks had a sudden negative impact on the American economy. On the first day of trading after the attacks, the stock market fell 7.1 percent, affecting Finance and Air Transportation industries with an eventual 60 percent job loss in those sectors (Editors, 2010). Lai and Lu (2005) found that the 9/11 attacks produced significant abrupt and temporary impacts across the air transportation industry. Shown in Figure 3, a substantial drop in airline hiring can be seen, and this drop did not cease until a year later. Within three years, however, the airline industry recovered its economic footing. Domestic and international air passenger travel reached its pre-9/11 highs in July 2004 and has continued its steady growth, until now (U.S. Department of Transportation, 2017).

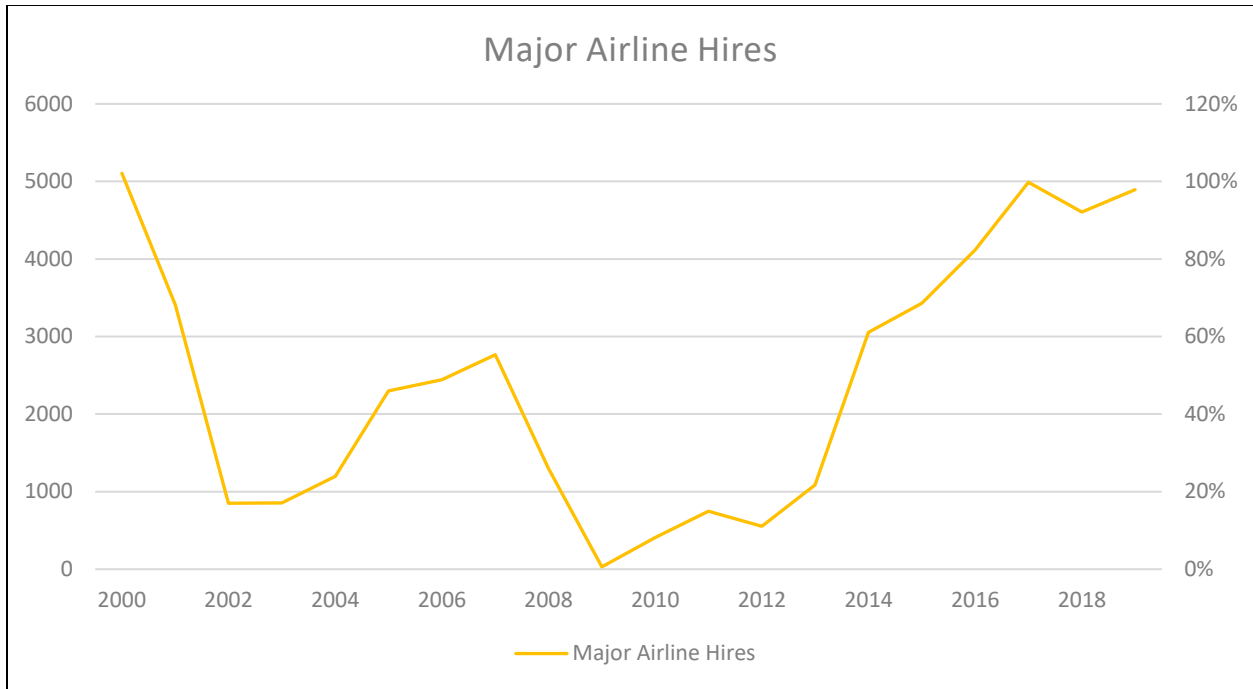


Figure 3. Major Airline Hires (FAPA.aero, 2019)

The aviation industry's climate changed drastically between 2007 and today due to myriad legislative, fiscal, and procedural changes throughout both the commercial and Department of Defense sectors. Beginning in 2007, a significant amendment to transportation law took place, extending the retirement age of passenger airline pilots from 60 to 65 (Fair Treatment of Experienced Pilots Act, 2007). This change amended legislation that had been in place for 47 years and brought the U.S. airline industry up to standards with the International Civil Aviation Organization (ICAO) and the international community (President Makes It Official: Age 65 Is Now the Law, 2007). This amendment was significant for airlines because the new pilot age range extended their pilot levels for another five years. It enabled previously expected retirees to continue flying for the airlines for 60 additional months while also

permitting airline companies five additional years to establish replacement aircrew for their commercial requirements.

Following a February 2009 Colgan Airlines crash, where the National Transportation Safety Board (NTSB) determined that the Pilot in Command (PIC) and co-pilot had “little operational experience” flying the plane, federal regulations were revised to increase the training requirement for commercial airline pilots. Most notably, this amendment raised the minimum required flight hours from as little as 250 to now 1,500 hours (Perceman, 2010).

This law placed a premium on military pilots’ experience, as they offered commercial carriers easily verifiable training records with explicit details on the variety and complexity of their flying experience. It also made military pilots more attractive to airlines since *only* military pilots and graduates of qualified undergraduate degree aviation programs could get commercial licenses with less than 1,500 training hours (Silk, 2017). The mandated increase in minimum flight training hours made the financing and procurement of these types of hours more expensive for the non-military pilot, up to \$200,000 in training expenses, thus making civilian pilot entry into this profession more difficult (Silk, 2017). Further, a majority of U.S. airlines (i.e., Southwest, United, Spirit) subsequently required a four-year degree in order to be hired as a pilot, making the entry into that sector even more difficult for the average civilian striving to be an airline pilot (Brosnan, 2019).

In 2013, sequestration hit the Air Force, resulting in fewer flying-training hours, fewer Airmen, and a reduction in pilot production. In Fiscal Year 2014, force management programs implemented by the Air Force had the effect of reducing officer manning by 4,240 through voluntary and involuntary measures. Although necessary from a budgetary standpoint, these programs impacted the Air Force’s ability to maintain its “family first” stance on culture. During



this period, 5,072 officers and 11,726 enlisted members were meeting retention boards regarding continued employment (AF closes FY14 force management programs, 2014). Operationally, this resulted in 475 Air Force pilots separating before their Active Duty Service Commitments (ADSC) and furthering the Air Force's pilot shortage (Glover, 2018).

In his 2018 study of the effects of sequestration since 2013, Benitez (2018) concluded that "since sequestration hit in 2013, the Air Force has produced roughly 175 fewer active-duty pilots annually than it had before sequestration." More recently, in a February 2019 presentation on sequestration to the Air Force Subcommittee on Personnel, Lieutenant General Kelly opined that one-third of the Air Force's combat flying Squadrons were shut down. Nearly 30,000 Airmen were removed from active duty to meet the fiscal limitation set forth by the Budget Control Act (Kelly, 2019).

In 2017, the Air Force decided to take a specific action with the creation of the Aircrew Crisis Task Force, referred to as the ACTF. The goal of the ACTF was to have an organization charged explicitly with researching why pilots were choosing to leave the Air Force and correct it. Since its inception, the ACTF has performed numerous outreach events to MAF operational airbases to take a realistic "pulse" on the aircrew performing the mission. In his review of these outreach initiatives, Sowell (2019) concluded that, at multiple levels, the Air Force cannot "produce" enough aviators to meet the current pilot shortage and that alternate production measures should be incorporated into the overall manning initiative in order to yield sufficient manning levels.

In the latter years of the 2010 decade, the Air Force determined the need to actively employ additional measures to retain its aviators and, by 2018, had a variety of measures in place to attack the exodus of its pilot workforce. General Goldfein subsequently employed efforts on a

variety of fronts, including recruiting and training of more new pilots, returning retired pilots to active duty, convincing experienced pilots to stay longer, refining organizational culture, and improving the lives of pilots (Losey, 2018).

Along with these measures, revitalizing Air Force Squadrons has been one of the most publicized initiatives. Critical components of the support structure that was inherent within the Squadron was lost in 2013 during sequestration. With the 2018 budget, however, Squadron vitality was identified as a priority (Figure 4), and more support was allocated to the Squadron level (Losey, 2018). This show of support began with 200 personnel positions allocated to Commander Support Staff (CSS) functions and 961 additional civilian positions dedicated to absorb Squadron requirements (Brissett, 2017). This budgetary change provided the action needed to assign additional workforce to these duties, which were previously burdening Squadron Airmen.

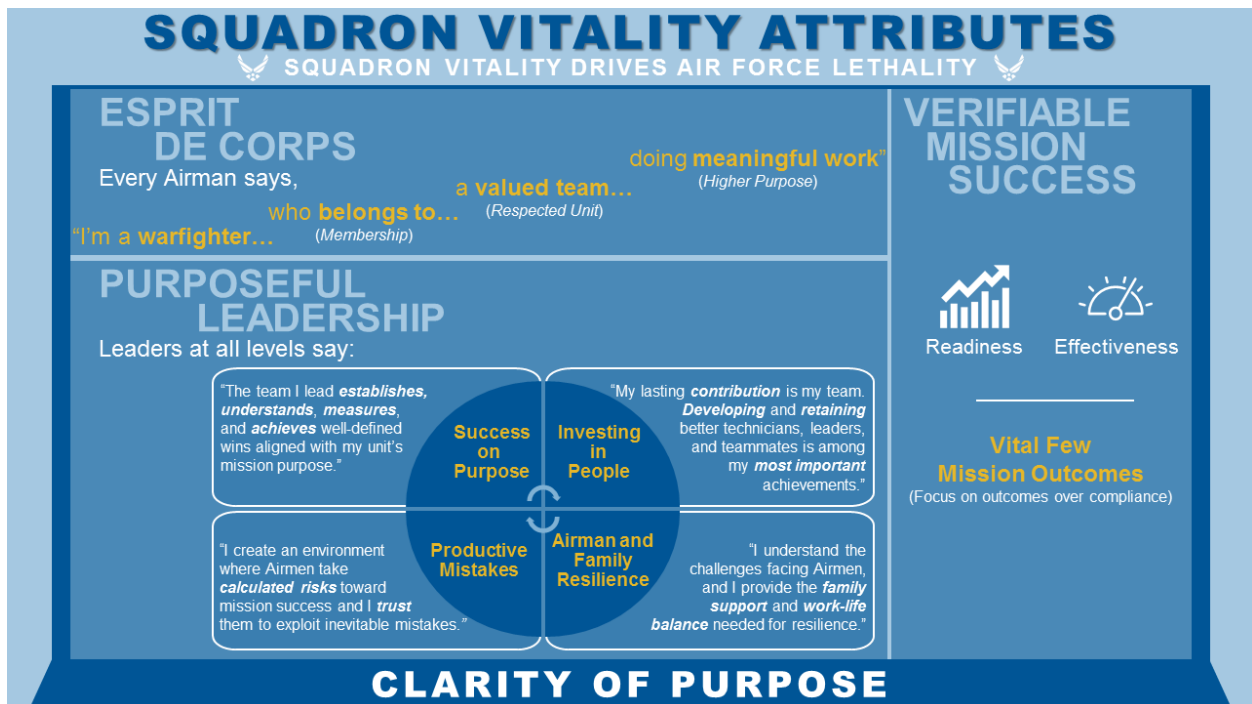


Figure 4. Revitalizing the Air Force Squadron – Clarity of Purpose (Barnett, 2018)

As of March 2020, the Air Force was 2,100 pilots short of their planned goal. This shortage accounts for ten percent of the required number of pilots outlined as necessary to carry out the National Defense Strategy (NDS) or simultaneous contingency requirements (Losey, 2020). Programs that were created intentionally to help curb the mass exodus of pilots have yet to mature, and some have not attracted aviator interest.

As an example, consider the Aviation Technical Track (ATT) (also referred to as the ‘fly-only’ track). The ‘fly-only’ track emerged within AMC in July 2018 as a means to retain mobility pilots with valuable experience and skills, but without the internal motivation for managerial staffing. This initiative aimed at offering flexibility to pilots in how they serve, through a refocus to the cockpit and reduced developmental requirements and non-flying related duties (AMC/PA, 2018). As of March 2020, the ‘fly-only’ track has been canceled due to limited interest and Airmen’s applications. At the time of its cancellation, there were two airmen enrolled in AMC’s ATT. When asked, surveys showed that pilots lack the interest in the program, and most of them showed apprehension of being the first to attempt this beta test (Pawlyk, 2020).

## **Relevant Research**

In 1984, the Air Force contracted with RAND Corporation to conduct an analysis on Air Force officers and build a dynamic retention model outlining the decision-making process that an officer takes when deciding whether to “stay or go.” This analysis took into account numerous variables from the 1973–1977 time period, including compensation, retirement, promotion rates, source of commission, rating, year of service, and state to which they were returning or leaving. From this evaluation, a formula was derived outlining the optimum time to leave the military,

dependent on the highest favorable output. This model allowed RAND to run a variety of scenarios to determine the impact that policy changes would have on retention rates. Models were generated with regards to altering situations, increase in pay and allowances, the introduction of bonus, retirement annuity change, increased flight pay, and aligning pay increases with the Consumer Price Index (CPI). These simulations showed increases in retention for all of these scenarios, except changes in the retirement annuity (Gotz & McCall, 1984).

In 1988, the Government Accountability Office (GAO) reviewed the Air Force Requirements, Inventory, and Related Data. The review showed that through a service-wide officer retention survey aimed at aviators, most aviators were satisfied with pay but felt other factors weighed more negatively on their decision to stay or leave the military. For example, the majority of respondents agreed that they were "dissatisfied with long-duty hours, the number of non-flying duties, and a lack of "say" in specific job assignments" (GAO, 1988). The GAO's analysis found, as well, that monetary compensation would affect a pilot's decision to stay or leave the military. Specifically, in 1988, a \$4,000 to \$6,000 per year bonus would increase retention for overall year groups, and a \$12,000 per year bonus would better retain the younger pilot force (as they would have more career years in the civilian sector) (GAO, 1988). The current 2020 bonuses will land between \$25,000 and \$35,000 per year, depending on the type of aircraft the pilot flies, as shown in Figure 5.

- AvB contract of 3 – 9 years (in whole year increments only); annual payments based on the three-to-six year rates of the aviator’s Core ID community as set in Tier 1 through Tier 4:
  - Tier 1 - \$35,000 ← Mobility Pilot
  - Tier 2 - \$35,000
  - Tier 3 - \$30,000
  - Tier 4 - \$25,000
- Minimum contract length of three years; maximum contract length of nine years but no contract may extend beyond 24 YAS

Figure 5. Aviation Bonus Annual Contract (PSDM 19-06, 2019)

In 1998, the Armed Forces & Society published an article that established a correlation between financial compensations and a pilot’s decision to stay in or get out of the military. Through their research, the authors built a pilot retention model based on flying status, Major Weapons System (MWS), ADSC, source of commission, gender, bonus applicability, hours flown, and myriad other variables. Through the model, their research confirmed their hypothesis that a “pilot bonus program was able to make military compensation more competitive with the civilian counterpart” (Stone, Wiggins, Turner-Holland, & Looper, 1998). The research team was able to make this determination by comparatively analyzing their model results from 1981–1989, a time when there was no pilot bonus offered, and 1989–1991, the start of the pilot bonus program (Stone, Wiggins, Turner-Holland, & Looper, 1998).

In 2010, research was performed on a multitude of variables affecting the decision of Marine Corps officers to stay or leave the military, and when these variables were more than negligible in their decision-making process. The researchers found that retention rates rose during times of war escalation (Glaser, 2010). The research also analyzed reasons for leaving the military, including retirement, release, resignation, discharge, reservist discharge, and other factors that weighed into these separation decisions. Of note, age at commissioning and number

of dependents appeared to have a statistically explainable relationship with a member's decision to separate. As age at commissioning rose, it correlated to a negative effect on a member's decision to remain in the military.

Conversely, as the number of dependents of a member increased, a decrease in conditional probability arose. Hence, the more children a military officer had, the more incentive they had to remain in the military. Glaser (2010) determined that this could be attributed to the supplemental support provided to them and their families.

In 2019, an assessment was performed by HAF/A1 on AMC PERSTEMPO and how it measured up against the rest of the Air Force personnel. The data were collected for the 2017–2018 calendar year and were resourced through five different personnel systems: Military Personnel Data System (MilPDS), Defense Travel System (DTS), Air Force Reserve Orders Writings System (AROWS-R), Air Reserve Orders Writing System (AROWS), and Deliberate and Crisis Action Planning and Execution Segments (DCAPES). From this data compilation, a tableau product was created to support senior leadership decision-making, shown in Figure 6 and Figure 7. Some of the main distinctions in the data showed that AMC pilots have, on average, a higher PERSTEMPO than pilots outside of AMC. Furthermore, the data showed that 55% of active-duty Airmen had between 0 – 15 days PERSTEMPO in the year in question (HAF/A1XD, 2019). These findings were insightful and showed that although AMC pilot manning levels are adequate for current operations, these Airmen are being utilized at a much higher rate than a majority of the rest of the Air Force.

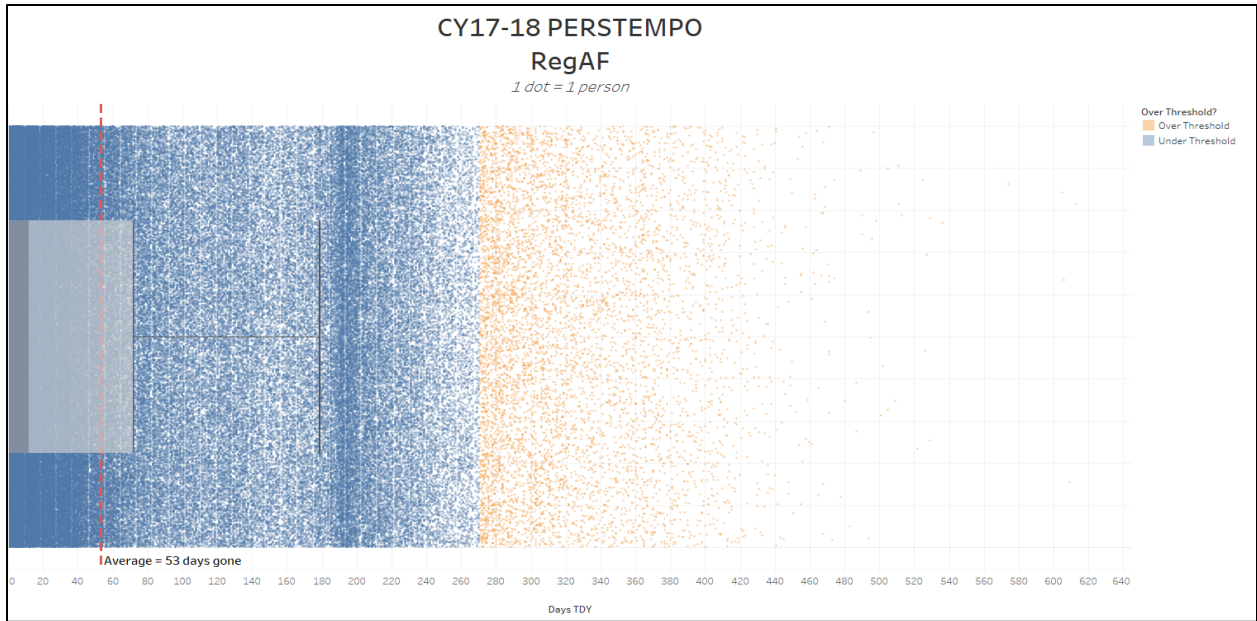


Figure 6. Air Force assigned Airmen average days TDY (HAF/A1XD, 2018)

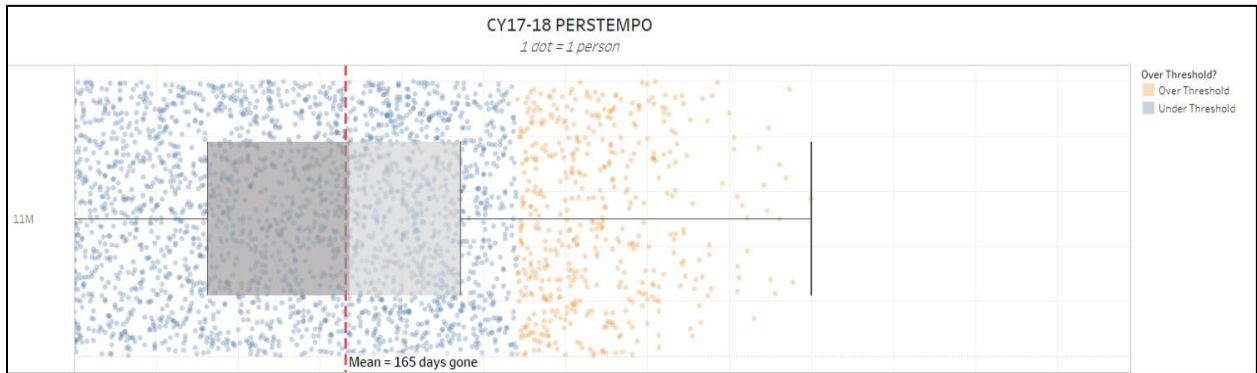


Figure 7. AMC assigned 11M (Mobility Pilot) average days TDY (HAF/A1XD, 2018)

**Psychological Constructs**

This research ties meaningful actions taken by the Air Force to psychological constructs intended to affect change in identified problem areas. In such, identifying the psychological constructs prevalent in the research is crucial to understanding what is affecting change and if so, how much change is it causing. The psychological constructs involved in this study are trust,

organizational culture profile, pay satisfaction, job satisfaction, organizational commitment, and perceived organizational support. These are constructs that were apparent in the initiatives the Air Force is employing and are vital in measuring to determine their effectiveness through employment. These psychological constructs have an astounding effect on investing in the whole person concept (work-life integration, family, and time for recreation and reflection), which has a powerful impact on engagement and retention (Zak, 2017). Each construct will be detailed below and will be further expanded into specific lines of questioning involved in the survey in Appendix B.

Trust is based on a process model, where the decision to trust is based on a variety of underlying subjective variables that conditions the intent to trust (Clark & Payne, 1997). In some senses, it is the willingness to render oneself vulnerable to another and, in that, dependent on the other for expected support (Mayer, Davis, & Schoorman, 1995). Trust is rooted in three factors that affect individuals differently, depending on their cognitive and mental make-up. These three trust factors are disposition-based, cognitive-based, and affect-based. Disposition-based trust identifies inherent personality traits and, thus, a propensity to trust others. Cognitive-based trust utilizes a rational assessment of an individual and their capacity to be trusted. Does this individual have the pristine track record to warrant trustworthiness? Lastly, affect-based trust references emotions towards the individual in question and feelings towards them. This factor of trust is more emotional than rational, and these feelings towards this individual allow us to be vulnerable (Colquitt, LePine, & Wesson, 2017).

Organizational culture profile is a construct that allows an individual to assess their fit within an organization (O'Reilly, Chatman, & Caldwell, 1991). Ideally, in order to fit, individuals should align with the underlying cultural assumptions and values for the organization



for which they work. Culture, in and of itself, can reference many things from observable artifacts, like organizational logos, to espoused values of the organization, like beliefs, philosophies, and norms held by that organization (Colquitt, LePine, & Wesson, 2017). Organizational culture profile breaks down culture into seven distinct values: innovation, aggressive, outcome-oriented, stable, people-oriented, team-oriented, and detail-oriented (Figure 8). These values all represent specific types of organizational culture a body can take. However, there is no one best type of culture, and in many larger organizations, more than one is regularly adopted (O'Reilly, Chatman, & Caldwell, 1991).



Figure 8. Organizational Culture Profile (O'Reilly, Chatman, & Caldwell, 1991, p. 34)

Pay satisfaction is described as an employee's feelings about their pay. Is their pay adequate, deserving, and secure for all of their ordinary expenses, as well as any luxury items that they would like to purchase (Colquitt, LePine, & Wesson, 2017)? The highlight of this construct is that it weighs and compares what an employee receives versus what they want. Pay satisfaction, as detailed by Heneman and Schwab (1985), has four different dimensions within it: level, benefits, raises, and structure/administration. It is categorized as a multi-dimensional construct that measures multiple aspects of pay from an individual subjective point of view (Heneman & Schwab, 1985). From this hypothesis, Heneman and Schwab generated a Pay Satisfaction Questionnaire (PSQ) in which the dimensions could be tabulated through a quantitative and substantive measure. This PSQ will be utilized in the survey through the measurement of Likert scale questions.

Job satisfaction, as defined by Colquitt, LePine, and Wesson (2017), is the pleasurable emotional state resulting from the appraisal of an individual's job and experiences. Essentially, this construct represents how an individual "feels" and "thinks" about their job (Pond & Geyer, 1991). "Because job satisfaction seems to be a key driver of job performance, organizational commitment, and life satisfaction, it is important for managers to understand just how satisfied their employees are" (Colquitt, LePine, & Wesson, 2017).

Organizational commitment is defined as one's desire to remain a member of their current organization. This construct influences a person's determination to stay with their current organization or to leave (Cook & Wall, 1980). Organizational commitment can be further broken down into three types of commitment: affective, continuance, and normative. Affective commitment describes the emotional attachment one may have with their organization, while continuance commitment refers to a cost-benefit analysis associated with leaving an

organization. If a need to stay with an organization is because of the substantial costs incurred by leaving the organization, then there is a continuance commitment being had toward that organization. Lastly, normative commitment refers to the commitment one feels to an organization because of their obligation to it (Colquitt, LePine, & Wesson, 2017).

Perceived organizational support is the construct in which employees believe that the organization has a general positive or negative orientation towards them, which accounts for concern for their well-being and recognition of their contributions to the organization (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Perceived organizational support is positively correlated with an employee's feelings to care for the organization's welfare and help the organization reach its goals. In essence, perceived organizational support creates a reciprocal emotional relationship with an employer and employee.

These six psychological constructs will be analyzed as they pertain to the employed retention measures by the Air Force. Furthermore, they will be grouped and incorporated into a survey that can be distributed to operational flying MAF pilots. Lastly, the 2019 Military Career Decisions Survey will be analyzed from this lens as well, as all of these constructs are prevalent throughout the survey and can provide insight into this study from a different data set. From this analysis, a correlation between specific measures and associated psychological constructs can be statistically tied to one another.

### **Negative Economic Effects**

With the emergence of the COVID-19 pandemic, it is essential to evaluate similar points in time and their effect on the aviation industry and pilot retention. Referencing Figure 9, there is a clear correlation between major economic downturns and industry-leading airline hiring.

The two recent points in time that are most alike to the 2020 COVID-19 pandemic are the September 11, 2001, terrorist attack and the 2008 housing crisis. Although the current economic downturn is forecast to mimic both of these events combined, a look at both individually will help with understanding their direct impact on airline and retention topics alike (Ali, 2020). Lastly, the 1918 influenza pandemic will be examined separately, as many experts have compared our current environment to fit most appropriately with the Spanish Flu and its effects throughout the world.

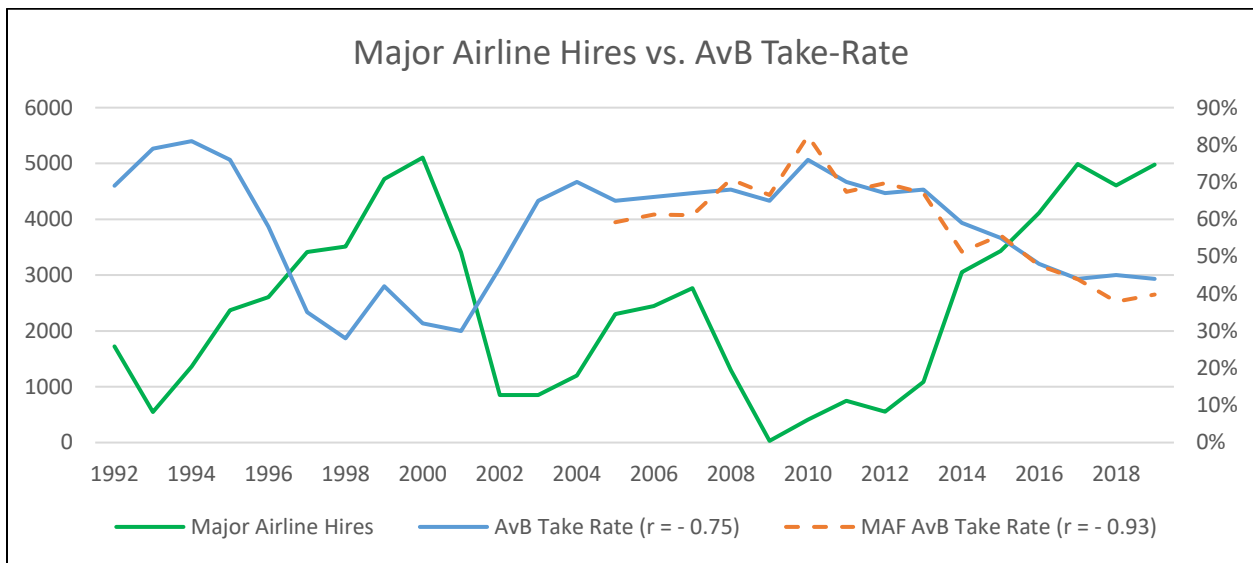


Figure 9. Historical Major Airline Hires vs. Air Force Aviation Bonus Take Rates (adapted from FAPA.aero Major Airline Pilot Hires and AFPC Retention Reports, 2019)

"On September 11, 2001, militants associated with the Islamic extremist group al Qaeda hijacked four airplanes and carried out suicide attacks against targets in the United States. Two of the planes were flown into the twin towers of the World Trade Center in New York City, a third plane hit the Pentagon just outside Washington, D.C., and the fourth plane crashed in a field in Shanksville, Pennsylvania" (Angerer, 2018). These events devastated the 3,000 families who

lost loved ones that day, but they prompted travel initiatives to combat terrorism, which had shattering economic ramifications.

The immediate effects following the attack was a 7.1 percent drop in the New York Stock Exchange (NYSE), as most businesses had been evacuated due to safety concerns. However, in the months and years to follow, there were rippling effects throughout the U.S. economy. With the immediate closing of airports, the airlines had to absorb a direct cost from their revenue. Days later, when airports were allowed to open with expanded security measures, the passenger demand for air travel had diminished by 30 percent. To further this economic hit to airlines, a significant number of businesses suspended non-essential travel, which represented one of the airlines most profitable segments (Logan, 2018). This combination of decreased passenger demand, government-mandated cancellation of flights, and increased expenditures for enhanced security measures made it fiscally impossible for some airlines to survive. Even with a congressional emergency aid package of \$5 billion of direct federal aid and \$10 billion bailout in the form of guaranteed loans, some airlines were unable to recover from the devastation of September 11<sup>th</sup> (CNN.com, 2001). For example, U.S. Airways and United Airlines were two airlines that filed for Chapter 11 bankruptcy shortly after the attack (Logan, 2018). All of the havoc that took place put a drastic halt to significant airline hiring, resulting in a 75 percent reduction in hiring the following year (FAPA, 2020). Most airlines would not begin hiring again until 2007, and then soon after another event took place, the 2008 subprime mortgage crisis.

The stock market experienced the most significant single-day drop in history on September 29, 2008, until the 2020 stock market crash, as seen in Figure 10 (Amadeo, 2019). This catastrophic crash to the U.S. economy occurred not because of an extremist terrorist attack but was self-induced through actions taken by U.S. financial institutions. This resulted from

actions starting in the early 2000s when investors looking for high returns with relatively low risk began looking at the U.S. housing market as an easy opportunity to make money.

Mortgaged-backed securities, or bundled mortgages, were pooled together, portioned, and sold off to individual investors. These types of investments were seen as low risk by lenders because if by chance a borrower defaulted on their mortgage, the bank could just sell the house for more money (Muller, Jenkins, Brungard, & Sweeney, 2015). As these mortgaged-back securities became more and more in demand by investors, lenders did their best to make more of them available by loosening their standards regarding mortgage approvals. This loosening of standards, along with predatory lending practices with variable interest rates, fueled the housing bubble that eventually popped. "When the housing market became saturated, and interest rates started to rise, people defaulted on their loans," which in turn drastically devalued the derivatives that they were bundled into and sold as insured investments among financial institutions (Amadeo, 2019). Momentum from these events continued until trading and credit markets froze, the stock market crashed, and the U.S. economy found itself in another recession (Muller, Jenkins, Brungard, & Sweeney, 2015).

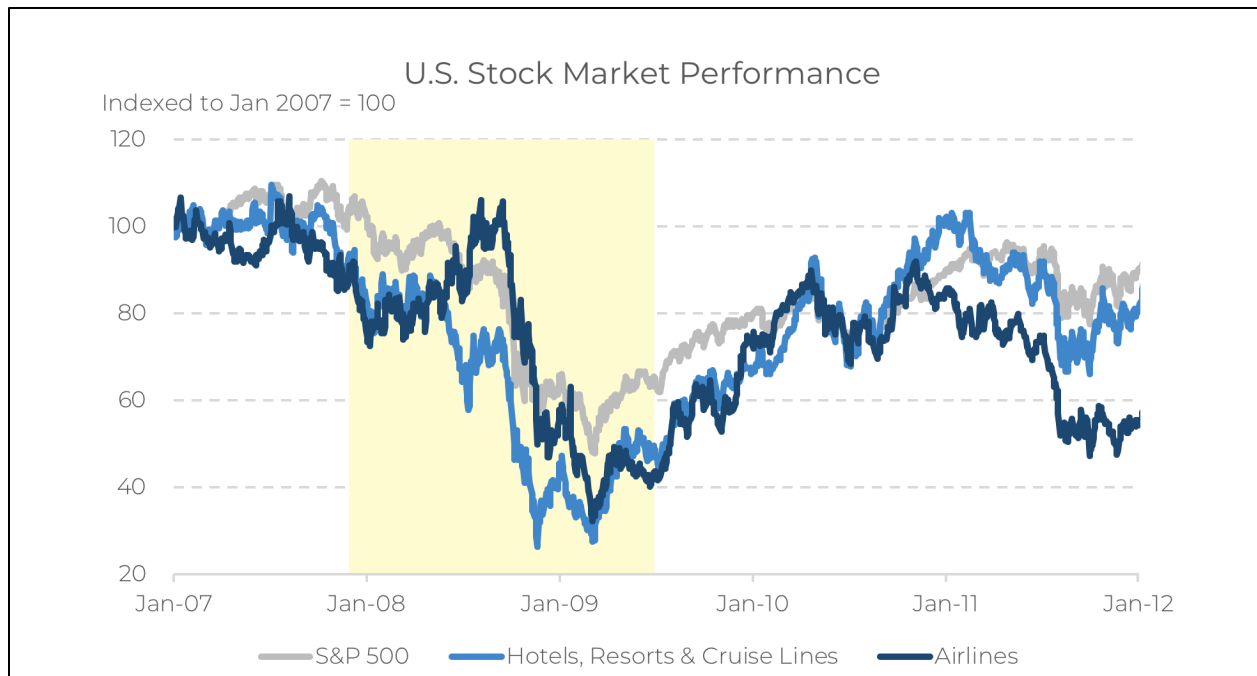


Figure 10. US Stock Market, Cruises, & Airline Performance during the 2008 Economic Crisis (Borko, 2018)

In the wake of the economic crisis, businesses leaned their finances and consumers stopped discretionary spending, which directly affected the airline industry profitability. From January 2007 to March 2009, airline stocks declined 68 percent while other travel-related industries (i.e., hotels, resorts, and cruise lines) fell 74 percent (Borko, 2018). In an industry that already enjoyed razor-thin profit margins, a reduction in demand of that magnitude indeed injured their bottom line and can be identified through their profitability in Figure 11. U.S. air carriers did not see revenue hit positive numbers until mid-2010, and likewise, airline hiring froze until each air carrier could justify expanding their pilot force. American airlines hiring in 2009 was 2.3 percent of the previous year and did not increase substantially until 2013 (FAPA, 2020).

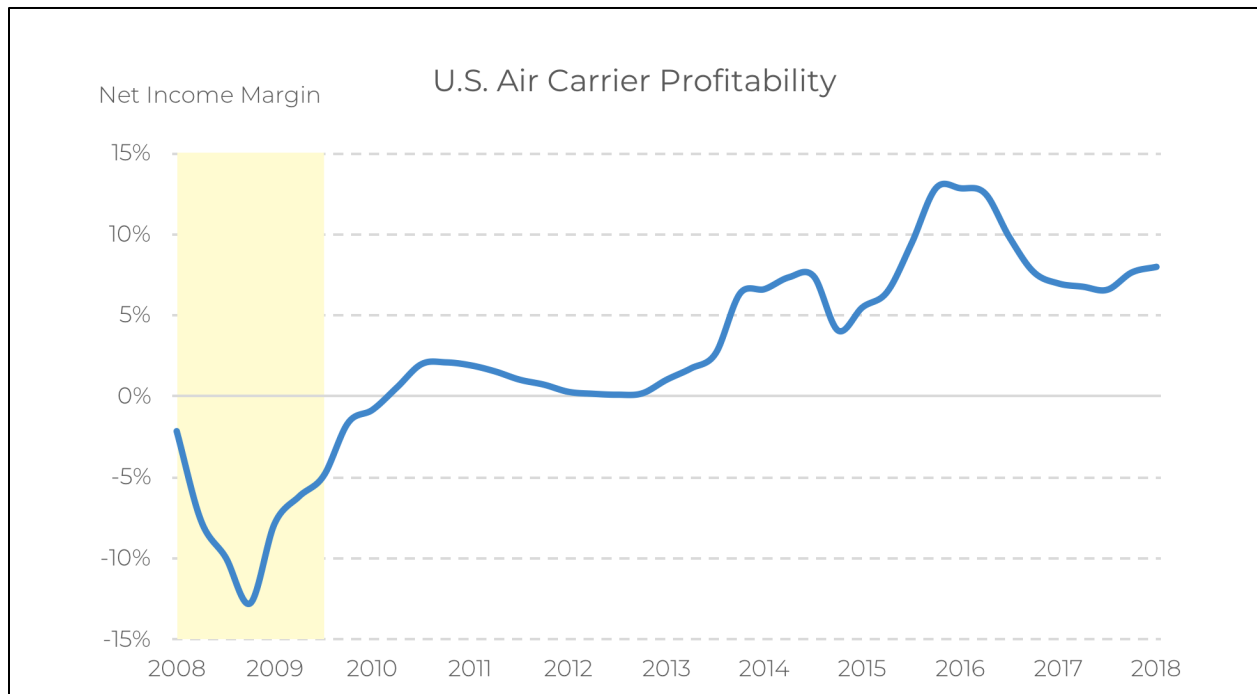


Figure 11. U.S. Air Carrier Profitability - DoT (Borko, 2018)

These economic downturns are the closest relatable instances that we have to compare to what is occurring in the global economy in 2020. The U.S. economy is on its way to its next recession due to the halt in every foreseeable discretionary expenditure, and the travel industry is going right along with it (Ali, 2020). To combat this, the U.S. Congress passed a \$2 trillion relief package aimed at helping industries and individuals who have been greatly affected by COVID-19 pandemic. For airlines, the deal included restrictions that they cannot buy back stock, no Chief Executive Officer (CEO) bonuses are allowed, and they cannot lay off employees until late in 2020 (CNBC, 2020). However, this will not fare well for prospective pilots looking to be hired in the near future.

Lastly, an examination of the 1918 Spanish Flu will help assess expected economic outcomes from the most recent global pandemic in modern history. The Spanish Flu affected the human body in the same way that COVID-19 seems to, by damaging the respiratory system.



What made the Spanish Flu so deadly is that the virus would specifically weaken a victim's bronchial tubes and lungs, thus clearing the way for bacterial pneumonia (History.com Editors, 2020). Although it seems to affect similar areas of the body, its most affected demographic differ. While COVID-19 has ravaged individuals with compromised immune systems (older adults or individuals with severe underlying medical conditions), the Spanish Flu was more likely to cause death in individuals aged 18–40 (CDC Editor, 2020). This was because death was not caused by the Spanish Flu itself, but by the body's immunological reaction to the virus. Thus, individuals with the strongest immune systems were the most likely to perish (Garrett, 2007). With this being the case, it resulted in severe economic consequences for families who had just lost their primary source of income.

Although populations globally are implementing similar measures to combat COVID-19 as were taken during the 1918 Spanish Flu, economies are structured much differently in 2020. They will, in turn, react differently to this pandemic. In 1918, the economy was significantly less centralized, meaning that many different regions bore the brunt of their miniature economic struggles instead of one massive reaction from one centralized economy. Furthermore, while the second wave of the Spanish Flu occurred during World War One (WWI), it had no supply chains to disrupt and did not affect global economies as severely as COVID-19 has (The Infographics Show, 2020). Now even though the sheer impact of the illnesses do not compare, as the Spanish Flu at the 100-day point had infected nearly 40 million people and COVID-19 has tallied 3.5 million people, the measures used to 'flatten the curve' of the virus spread have been similarly implemented (Evon, 2020).

## **Summary**

Air Force pilot retention has been a problematic workforce issue throughout the last few decades as the Air Force has faced commercial aviation industry competition for pilots. Military aviators are viewed as a premium by the airline, transportation, and logistical industries because they are highly trained technicians with high quality, verifiable training and flight hours. Further, military pilots tend to meet more of the requirements that major airlines are looking for in their pilot prospects (college degrees, sufficient training hours, and documented flight hours). When the demand for pilots continues to grow globally, the Air Force will need to enhance its management of pilot workforce and retention programs in order to stay relevant to the NDS. However, the emergence of COVID-19 has changed the landscape in this area and may inevitably increase retention in the short-term.

### **III. Methodology**

This research examines the measures currently employed by the Air Force that focus on improving aviator retention. More specifically, this research is aimed at the contemporary issues and conditions that are influencing their decision to remain in service or to exit their military careers, as well as how well the Air Force is doing to at curbing the diminished culture and influencing their decision to stay. A survey was produced to focus on areas that have been identified by pilots as problem categories, and current measures addressing these areas were attached to the survey for measurement. To measure the attitudes and opinions on the focus areas, a 7-point Likert scale was added to the survey to quantify each survey item. The chapter reviews specifics on the development of the survey, the survey's implementation, an overview of the Likert scale, and a division of the survey data. The statistical analysis will focus the Air Force on where it needs to concentration their efforts and where they are benefiting from initiatives already put in place.

#### **Survey Development**

The Air Mobility Retention Measures (AMRM) Pilot Survey originated, in part, from an interdependency diagram (Appendix B. Retention Measures – Interrelationship Diagram) constructed from analyses performed by HAF/ACTF and AMC's Operational Wings and attached pilots. A 2019 outreach and retention review performed by the ACTF found that a majority of complaints held by pilots can be categorized into five specific areas: PERSTEMPO, Crew Ratio and Utilization, Deployment Transparency, Better Compensation, and Lifestyle Predictability (ACTF, 2019). Based on these five main categorical areas, survey questions were

crafted to gather data regarding recently employed Air Force initiatives that would affect pilots in these areas. Along with these, the psychological constructs were analyzed, and six were identified to contain certain elements within Air Force retention measures. Trust, organizational culture profile, pay satisfaction, job satisfaction, organizational commitment, and perceived organizational support were constructs that were analyzed and included in the generation of the survey. Lastly, specific demographic information was included in the survey to measure correlations between these and the responses.

The survey was intended to be administered to three Squadrons. Although limited, the survey was aimed to encompass a wide range of MAF specialties and qualifications and was forecast to glean insight into how a portion of AMC pilots feel. Multiple analyses were established to assess trends, correlations, and significance of the current Air Force MAF pilot culture. The test's initial results were to be used to scatter plot all of the responses on one graph specific to that question. The use of this analytic tool allows the determination of any trend in the MAF pilot's current culture. Traditional data analytic tools can be applied in order to generate vital statistical metrics for all survey questions, including such metrics as the sample mean ( $\bar{x}$ ), sample median ( $\tilde{x}$ ), sample standard deviation ( $s$ ), sample variance ( $s^2$ ), and the determination of any correlation ( $r$ ) between each of the data sets.

Spearman's rank correlation analysis can be used to analyze collected ordinal data, as shown in **Error! Reference source not found.** Many psychologists have used this method in assessing the strength and relationship between two variables with a monotonic relationship (Wissler, 1905). The correlation coefficient ( $R_s$ ) can be calculated by using the equation below; it will always result in an answer between 1.0 (a perfect positive correlation) and -1.0 (a perfect negative correlation).

$$R_s = 1 - \frac{6 \sum d_i^2}{n(n^2 - 1)} \quad (3)$$

Where  $d_i$  = difference in paired ranks,  $n$  = number of cases, and  $i$  = paired score.

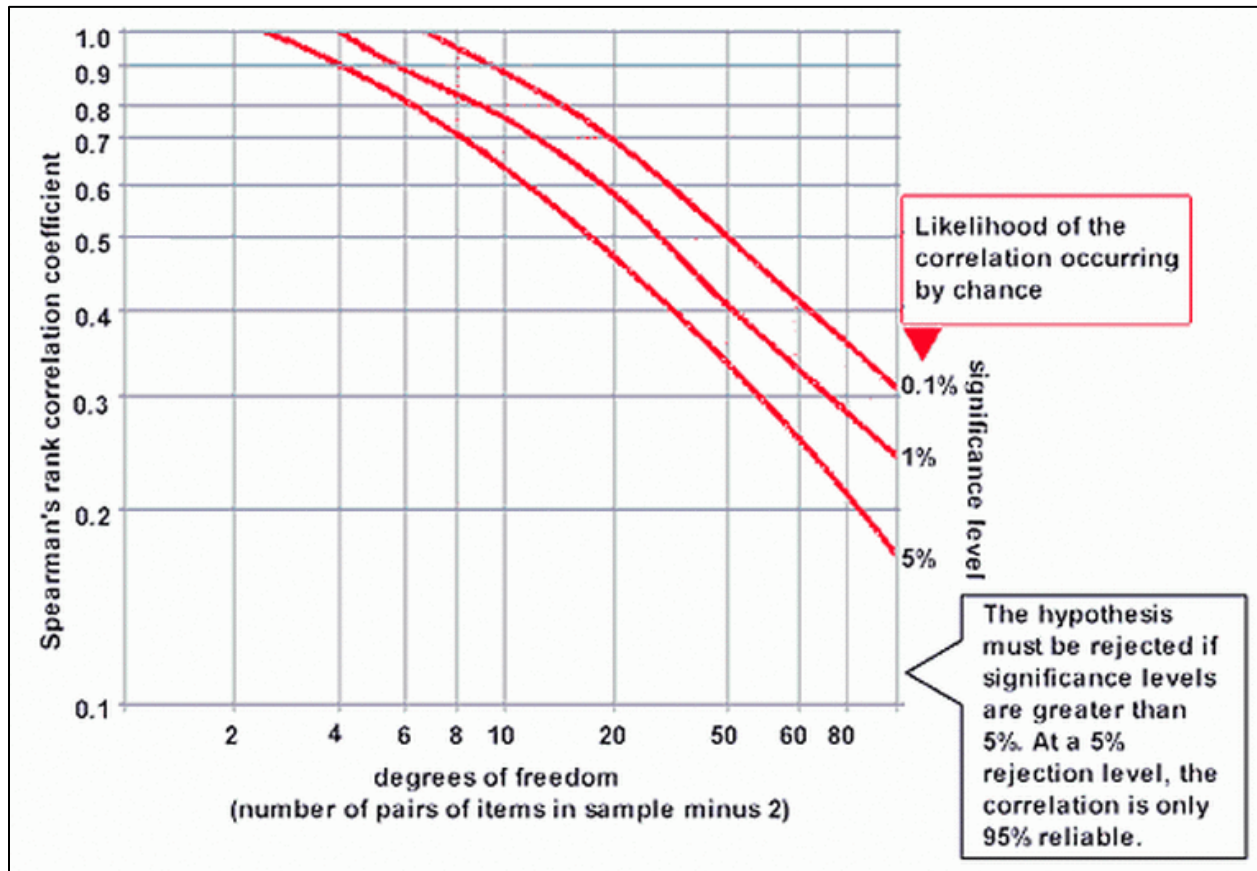


Figure 12. The Significance of the Spearman's Rank Correlation Coefficient and Degrees of Freedom (Royal Geographical Society, 2020)

There were 45 survey questions, with some including subsets, that analyzed the psychological constructs of the Airman surveyed and 16 survey questions generated to measure the personal effectiveness of each retention initiative currently being employed. Regression analysis and other analytic tools can be utilized to assess the perceived climate within the MAF pilot community and the perceived effectiveness of each initiative. With the collected data, box

and whisker plots can be created to graphically show the sample mean ( $\bar{x}$ ), sample median ( $\tilde{x}$ ), top and bottom 25%, and any outliers, as shown in **Error! Reference source not found.**

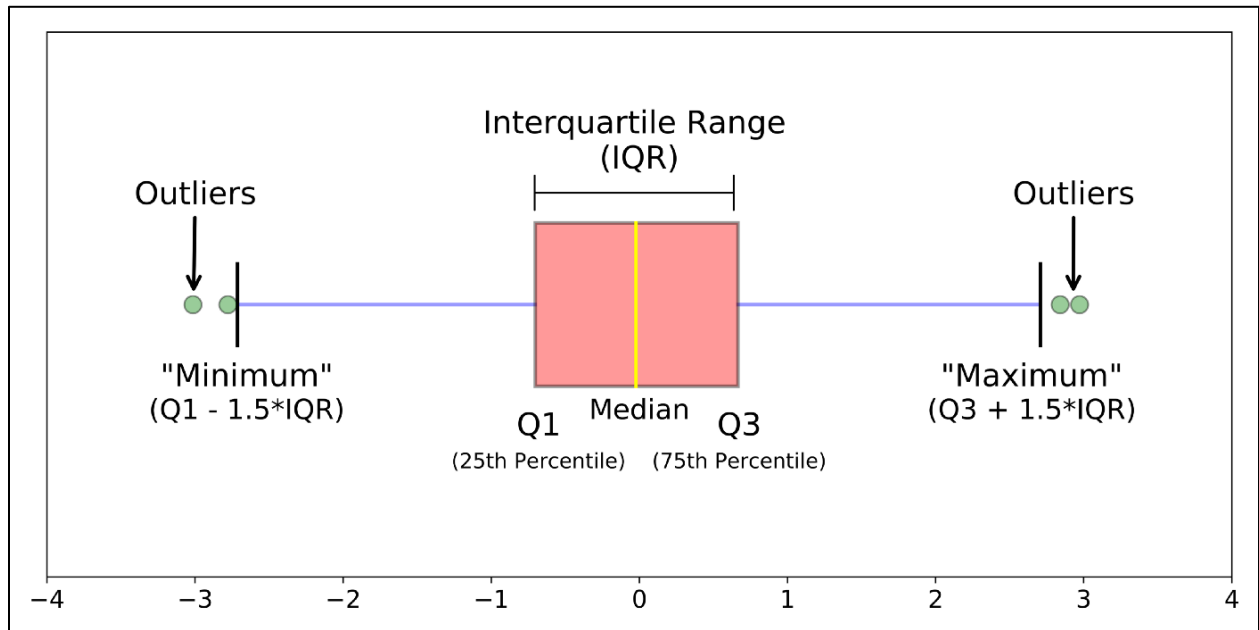


Figure 13. Example of a Box and Whisker plot (Galarnyk, 2018)

## Demographics

The size and scope of the respondent pool were quite limited, given the current constraints provided by the COVID-19 pandemic and inevitably were unable to be utilized in the AMRM survey. The goal of this research was to gather a quality subset of the MAF populace to give valuable insight into any underlying sentiment towards the Air Force's changing culture. The three Squadrons were chosen because of the proximity to Joint Base McGuire-Dix-Lakehurst in the case that this research needed to shift to interviews, instead of surveys, and because these Squadrons have every type of MAF pilot in its ranks.

## **Implementation of Survey**

Permission to disperse the survey was requested and granted by three operational Squadrons Commander's containing a variety of AMC pilots from diverse backgrounds. The survey was coded and maintained through a survey research services website that maintains compatibility and analytical capability for seamless employment and review of collected data. This organizational process and structure served to mitigate normal research bias. However, in late April 2020, the AMRM survey was denied by AFPC, as it pertained to academic research and was being managed by a student of AFIT.

## **Data Overview**

The 70-question web-based interactive survey consisted of a variety of demographic, retention measures, and psychological construct specific questions. Demographic data were included to later map -- via cross-tabulation, histogram, or cluster analyses -- any interconnected relationships and trends existing between specific demographics and their perception of the Air Force. The retention measures focused primarily on the five categories identified by the ACTF as common categorical areas of concern: PERSTEMPO, Crew Ratio and Utilization, Deployment Transparency, Better Compensation, and Lifestyle Predictability.

Although all of these categories are covered in the survey, Lifestyle Predictability, Compensation, and PERSTEMPO have been more focused as they have been highlighted areas for correction by the ACTF through current initiatives (ACTF, 2019). Lastly, the psychological constructs that were incorporated in the survey deal with the following areas: trust, job satisfaction, organizational commitment, organizational culture profile, perceived organizational support, and pay satisfaction. Of these, organizational culture profile and trust are dominant

areas of measurement in the survey as they both overlap inherently in both psychological and retention constructs.

Psychological constructs were utilized to document perceived Air Force culture and climate from the mobility pilot perspective. The organizational culture construct was employed to measure perceptions regarding how Airmen should behave or what attitudes are appropriate for them to hold while serving (O'Reilly, Chatman, & Caldwell, 1991). The trust construct was used to document the level to which these Airmen trust their management (Clark & Payne, 1997). The job satisfaction construct was used to gauge a measurement of perceived job satisfaction among pilots and their perceptions of employment alternatives outside the military (Pond & Geyer, 1991). The pay satisfaction construct was used in order to obtain an overall measurement of the satisfactions mobility pilots feel they receive, holistically, from the current pay and benefits structure (Heneman & Schwab, 1985). The organizational commitment construct was used to measure the Airmen's trust and organizational commitment to the Air Force (Cook & Wall, 1980). Lastly, the perceived organizational support construct was used to measure how well these Airmen are perceiving the support being provided by their organization and the Air Force (Eisenberger, Huntington, Hutchison, & Sowa, 1986).

### **Likert Scale**

Within the survey, Likert scales are used liberally in order to quantify the data for in-depth analysis. Likert scales were the creation of Rensis Likert and were introduced to the psychological field in 1932 to simplify the complexity of the pre-existing scaling technique (Rinker, 2014). Likert assembled his scale to identify an infinite number of attitudes in a measurable format (Likert, 1932). As such, the scales use fixed choice response formats and are



designed to measure attitudes and opinions, or levels of agreement/disagreement (Bowling, 2002).

Likert scales were used because they give a more detailed look at the emotions and attitudes behind the response to the question being asked. Likert scales allow this inherently qualitative subject to be analyzed by a quantitative eye. Figure 14, an example of a Likert scale question, shows how a single survey question can be quantified into a degree of possible answers. They have the advantages of not expecting a simple yes or no, but rather allow for degrees of opinions on a specific question (McLeod, 2008). However, since this research relies on human responses, it is susceptible to imperfections inherent in the human condition. One flaw of this research is the skewed validity of the data due to social desirability. This results when individuals mislead on a survey to put themselves in a positive light with the surveyor. By offering anonymity in the AMRM survey, it should further reduce social pressure, and thus may likewise reduce social desirability bias (McLeod, 2008).

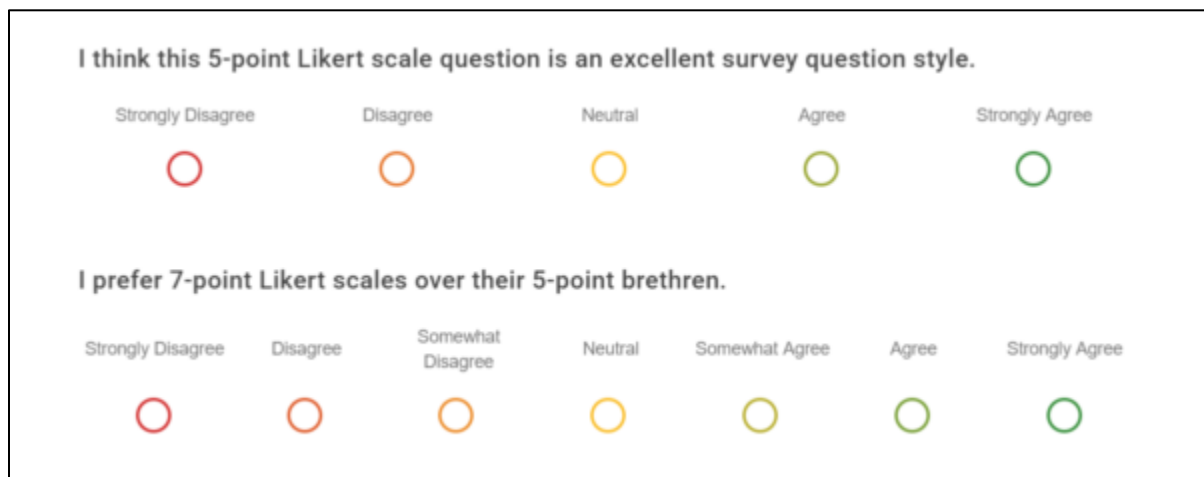


Figure 14. Example of Likert Scale Question (Live Survey, 2020)

Collected data can be grouped into ordinal and interval scale items in order to appropriately measure the results produced by each (Boone & Boone, 2012). Ordinal data are measurements that include letter grades, rankings, and achievements, which fit nicely with the Likert scale ranking of a majority of the survey. The interval scale also uses numbers to indicate order or ranking and reflect distances between points on the scale. With these two scales reflecting slightly separate categories of data, they will, in turn, need to be analyzed slightly differently. The ordinal measurement scale items will need to use the median or mode for central tendency, the frequency or variability, and then utilize chi-squared statistics for other assessments. Alternatively, the interval scale data will use the mean for central tendency, the standard deviation for variability, and the t-test or regression for other assessments (Boone & Boone, 2012). The specifics of the data that will be analyzed will be described more fully in Chapter IV.

Once the data are collected from the AMRM survey, they can be assessed and generally grouped into a hierarchy of four levels of measurement: nominal, ordinal, interval, and ratio data. Nominal data is the weakest level of measurement, representing categories without numerical representation. Ordinal data is ordered or ranked in order of responses, but no measure of distance is possible. Interval data are generally integer data in which ordering and distance measurement is possible. Finally, ratio data are data that can be meaningfully ordered, and in which distance, decimals, and fractions between variables are possible (Allen & Seaman, 2007). The more data points and commonality between responses, the more meaningful the results will come from the survey analysis.

## **Division of Survey Data**

Once fielded, the data to be collected can be organized into three specific areas: demographic, psychological constructs, and retention categories. From the survey, nine questions are demographic, 16 questions are focused on the retention categories currently being employed by the Air Force, and 45 psychological construct questions were developed independently for an analysis of trust, organizational culture, organizational commitment, perceived organizational support, job satisfaction, and intrinsic pay satisfaction. Moreover, all 16 retention category questions contained portions of these physiological construct characteristics that are to be used for further analysis of motivation. The data can be analyzed for trends and the identification of correlations among influencers and constructs after the data are bundled into its specific group.

## **Career Decisions Survey Analysis**

Near the end of this study, data were made available by AF/A1XD of the resultant answers for the 2019 Air Force Career Decisions Survey. This newly formed availability of data allowed this study to perform analyses outlined in the previous section that was initially intended for the AMRM survey. As well as this, the Career Decisions Survey inherently contained specific questions associated with the psychological constructs built in the AMRM: trust, job satisfaction, organizational commitment, organizational culture profile, perceived organizational support, and pay satisfaction. With these consistent psychological constructs as a foundation of this survey, similar analyses can be confidently performed. With the applicable data converted to an appropriate five-point Likert type scale, a Spearman correlation analysis was able to be performed on these data. This analysis mimics the planned analysis for the AMRM survey in the

correlation of variables but focused the comparable variable to a specifically directed question and not psychological constructs associated with retention measures. The directed question used for correction was:

*Question 38 – “What are your current intentions toward remaining in the Air Force beyond your current enlistment or service commitment?”*

Identifying a specific question for correlation allows for an analysis to render variables that are statistically linked to one another. Further, an association between questions can be analyzed, and a negative correlation between specific questions can be sought. This negative correlation will identify areas directly affecting a pilot's decision to leave the Air Force and aid the ACTF in focusing efforts in this area to improve conditions more suitable for MAF pilots.

### **Regression Analysis**

As we moved towards the middle of the research, COVID-19 began to affect the global economy. So much that the adverse effects on the economy directly affected airline employment opportunities for potential pilots. As these employment opportunities have a strong correlation with AvB take rates and, ultimately, pilot retention, it became clear that a regression analysis on these variables could prove useful for interested players and decision-makers.

A regression analysis is useful in statistics when predicting future performance from past occurrences. In regression equations, coefficients define the relationship between independent variables and a single dependent variable (Frost, 2020). The better the model fits to the data, the more predictive the forecasts can be. Although regression analyses are used for forecasting, it is better said that they predict dependent variables from the independent values and not merely predicting the future. In general, a regression model can be written as:

$$y_j = \beta_1 x_{j1} + \dots + \beta_n x_{jn} + \varepsilon_j, \quad j = 1, \dots, m \quad (1)$$

Where  $\beta_i$  is a regression coefficient and  $\varepsilon_j$  is an observation error (Tanaka, Ishibuchi, & Yoshikawa, 1994). Equation 1 can be simplified and rewritten in the following form:

$$y = x_0^t \beta + \varepsilon \quad (2)$$

Using this regression model as a foundation, an analysis of AvB, with respect to Gross Domestic Product (GDP) and Year, can be performed to determine if any correlation can be made between these and if so, can a model be built for forecasting. GDP was determined as an independent variable due to the consistent research finding that AvB take rates correlate negatively with economic performance. Furthermore, substantial research is being performed on GDP because of the effects that COVID-19 is having on it in May 2020. With this being a U.S. executive power priority in mid-2020, this variable will be the most scrutinized and thus the most appropriate variable to use in our current economic climate.

## Summary

The AMRM Survey was created to accomplish two objectives: measure the subjective pilot climate in regards to the Air Force culture and determine how MAF pilots feel about the current measures to address retention. The findings produced from this survey should give the Air Force and HAF/ACTF a gauge of where they currently stand in the eyes of MAF pilots. Further, a review of the 2019 Career Decisions Survey will be analyzed from a similar lens to assess any correlations between imbedded psychological construct questions and a decision to leave the Air Force. With this information, HAF/ACTF will be able to adjust their "plan of attack" to enhance effectiveness enterprise-wide. Lastly, a regression was built with AvB and

U.S. GDP variables to forecast the coming years AvB take rates, as they are affected by the COVID-19 pandemic and an associated economic downturn.

## **IV. Analysis and Results**

This chapter provides a review of key findings from the analysis performed from AF/A1XD survey data, as well as a regression analysis on the effects of COVID-19 on retention. The AMRM survey was forecast to be dispersed to all of the operational Squadrons on March 25, 2020, and the window for collecting all submissions was to be closed on April 29, 2020. However, due to the emergence of COVID-19, the strenuous approval process through AFSO and AFPC, and eventual denial of said survey, alternative means for collecting data were sought.

### **Research Objectives/Questions Analysis**

The research objectives were to be broken into two groups to assess two separate areas: (1) a review of the 2019 Military Career Decisions Survey with the determination of influence that specific factors play in a decision to exit the Air Force and (2) the introduction of COVID-19 and its detrimental effects on the global economy would play on Air Force MAF retention.

The 2019 Career Decisions Survey was analyzed with regards to answering the three investigative questions and had the below findings:

1. What are the factors where the Air Force is viewed as underwhelming by MAF pilots?

After reviewing the data, it was concluded that none of the identified factors contained overwhelming indications of underperformance. Every question analyzed contained 50% or more responses in the neutral or satisfied sections, thus not identifying any underwhelming factors.

2. What factors influence MAF pilots the most in their decisions to leave the military?

Reviewing the tally of responses, a clear rank structure resulted in influencers for leaving the Air Force. The top five influences were: difficulty maintaining work/life balance, availability of

civilian jobs, choice of job assignment/locations, amount of additional duties, and number of PCS moves and temporary duty away from home.

3. Is there a distinct correlation between unsatisfied factors and decisions to exit the military? After a Spearman correlation was performed on all selected questions, the top two identified factors that closely correlated with a decision to leave the Air Force were feelings that the Air Force does not value the individual's aviation skills and a declaration of currently looking for other employment outside the military (Appendix D. 2019 Military Career Decisions Survey Correlation Results).

After reviewing historical responses to economic downturns and associated AvB take rates, a conclusion was made regarding the adverse effects COVID-19 will have on the economy and the temporary increase in pilot retention. Further analysis on this topic is provided later in this chapter.

### **Career Decisions Survey Analysis**

Without sufficient data to answer the original research questions associated with this study, an effort was made to analyze data in the area of this study so that some insights can be made from the current climate of MAF pilots. These insights will assist with the regression analysis of AvB that will be shown in the following section.

Air Force Policy Analysis office (AF/A1XD) provided cleansed survey results from their 2019 Air Force Careers Decisions Survey and allowed this study to analyze the results further. After further filtering the data to include MAF pilots exclusively and selecting questions in line with this study and psychological constructs, a resultant of 25 questions (40 responses, as few



had sub-sections) encompassing 496 respondents was developed. A summary of the survey and the main areas analyzed is depicted in Figure 15, Figure 16, and Figure 17.

CORE AFSC	Population (#)	Invited (#)	Respondents (#)	Participation Rate
11M	4384	1347	496	36.8%

Figure 15. 2019 Military Career Decisions Survey Participation (Mitchell, 2020)

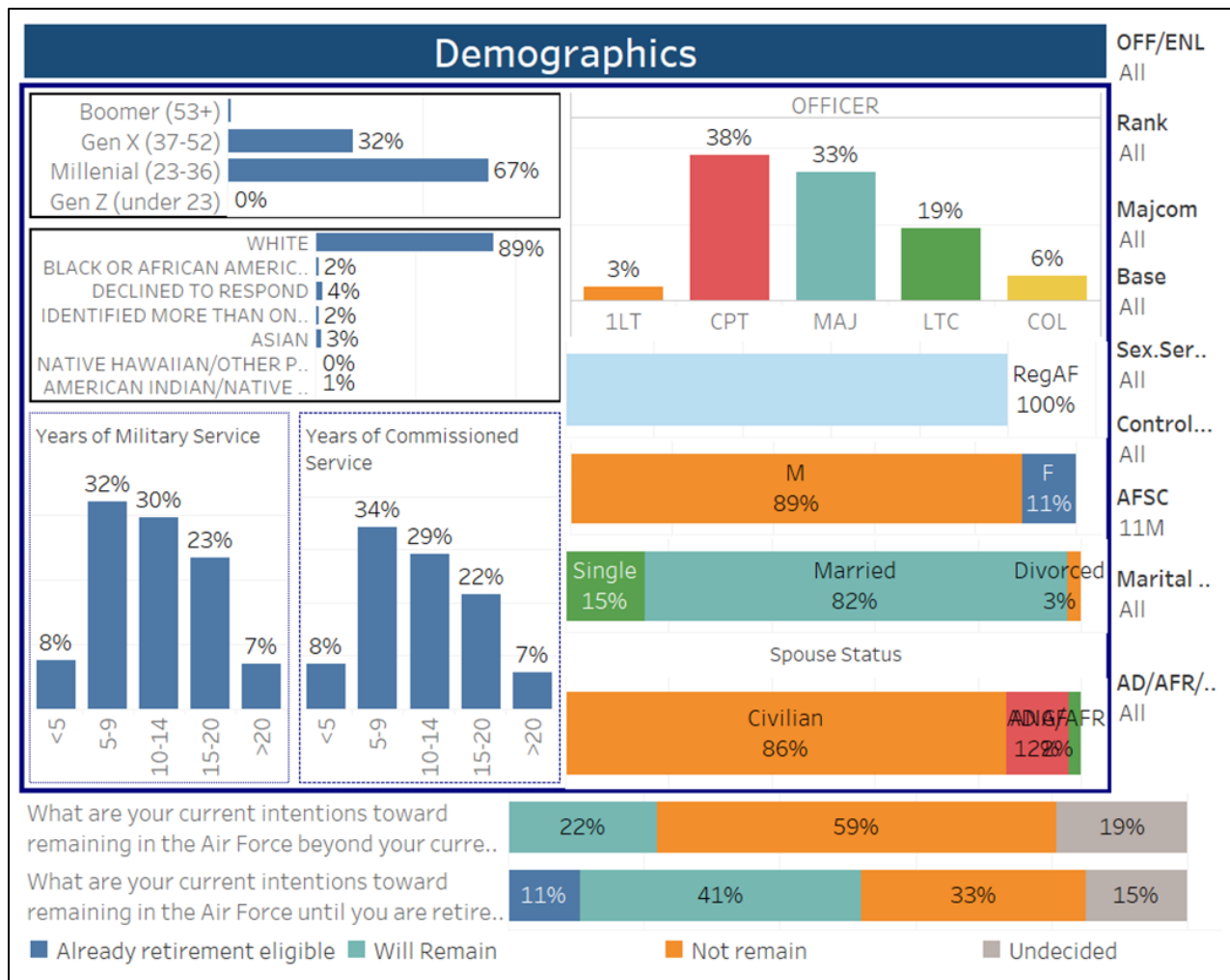


Figure 16. Career Intention Survey Demographics of 11M Pilots (Mitchell, 2020)

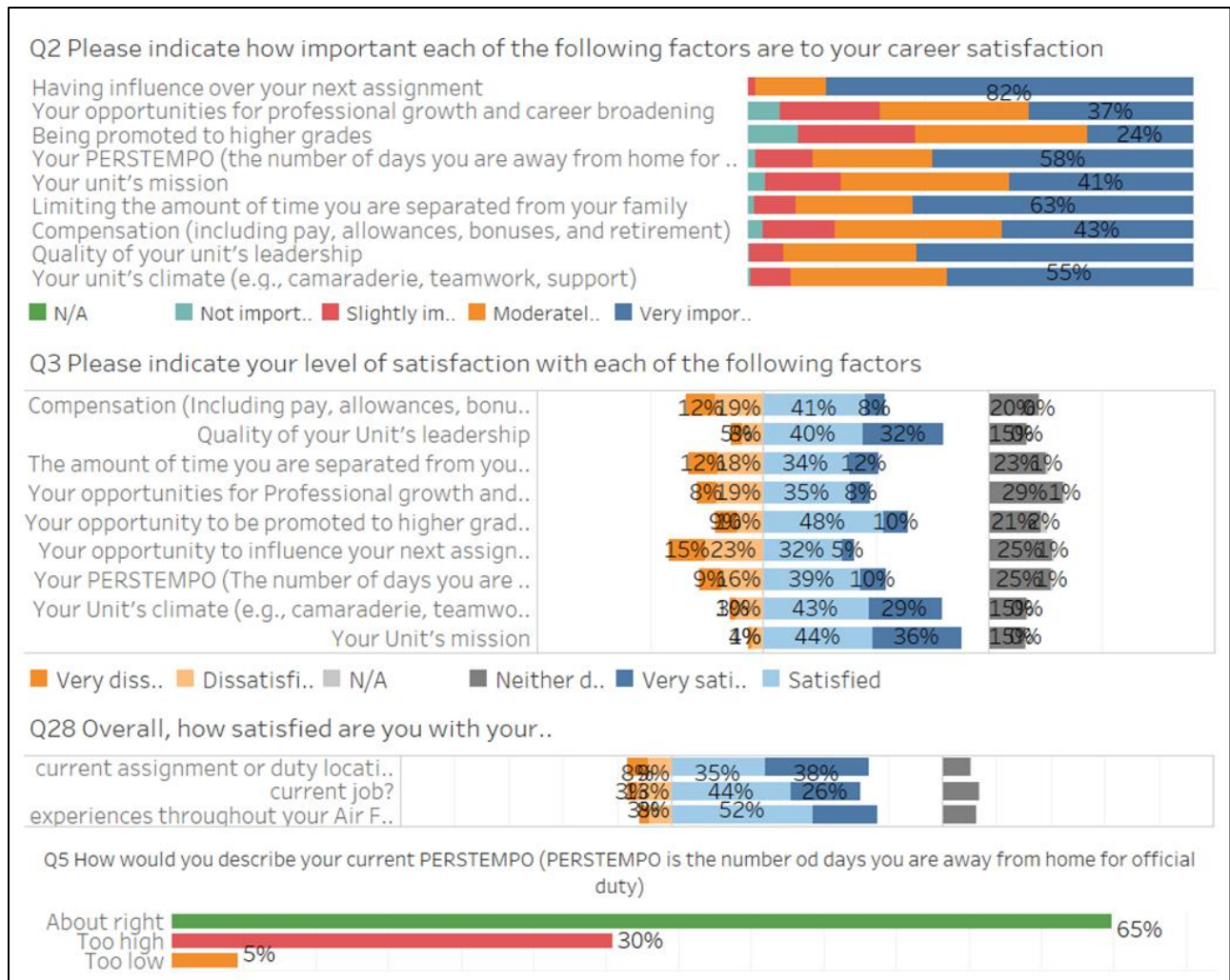


Figure 17. Measure of 11M Satisfaction in 2019 Career Decisions Survey (Mitchell, 2020)

Once this data was cleansed, it needed to be reformatted from nominal to ordinal measure, so that a comparative analysis could be accomplished that would be in line with this study. For consistency in the analysis, “Definitely Remain in the Air Force” / “Very Satisfied” / “Very Important” were coded as 5 and Definitely NOT remain in the Air Force” / “Very Unsatisfied” / “Not Very Important” were coded as 1. Once complete, a two-tailed Spearman correlation was performed between all variables with respect to one specific question, question 38 (Figure 18). Question 38 was the focus of this analysis as this study deals with retention of

pilots and variables that affect their decisions to leave the Air Force. Further, as this data was received at the conclusion of the research, time for analysis became a deciding factor in where to focus.

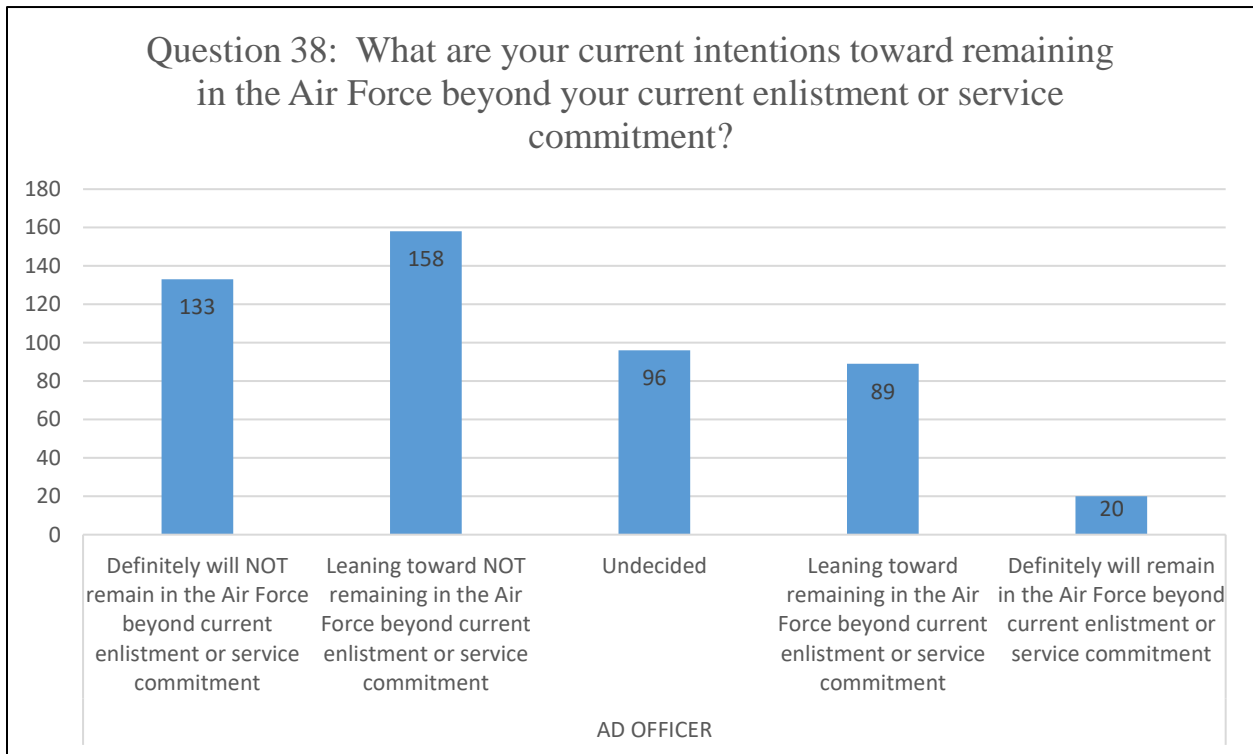


Figure 18. Question 38 from the 2019 Career Decisions Survey

With this analysis performed, a statistically significant correlation was found between Question 38 and 26 other questions at a 99% confidence level, as well as two questions at a 95% confidence level. Further, six of the questions contained a negative correlation with Question 38, and the rest were positive. The negative correlated questions deal with: currently looking for another job (-0.446) (Figure 19), amount of time separated from family (-0.164), high PERSTEMPO (-0.101), importance of influence over next assignment (-0.073), compensation (-

0.052), and reduction in additional duties (-0.038). These negative correlations show linkages that high PERSTEMPO, lifestyle predictability with moves, compensation, and additional duties are contributing factors in a pilot’s decision to leave the Air Force. Although the correlation between the question 38 and the rest of the variables remained low, it shows statistical significance between these variables and the decision to leave the military. The entire Spearman correlation report can be found in Appendix D. 2019 Military Career Decisions Survey Correlation Results

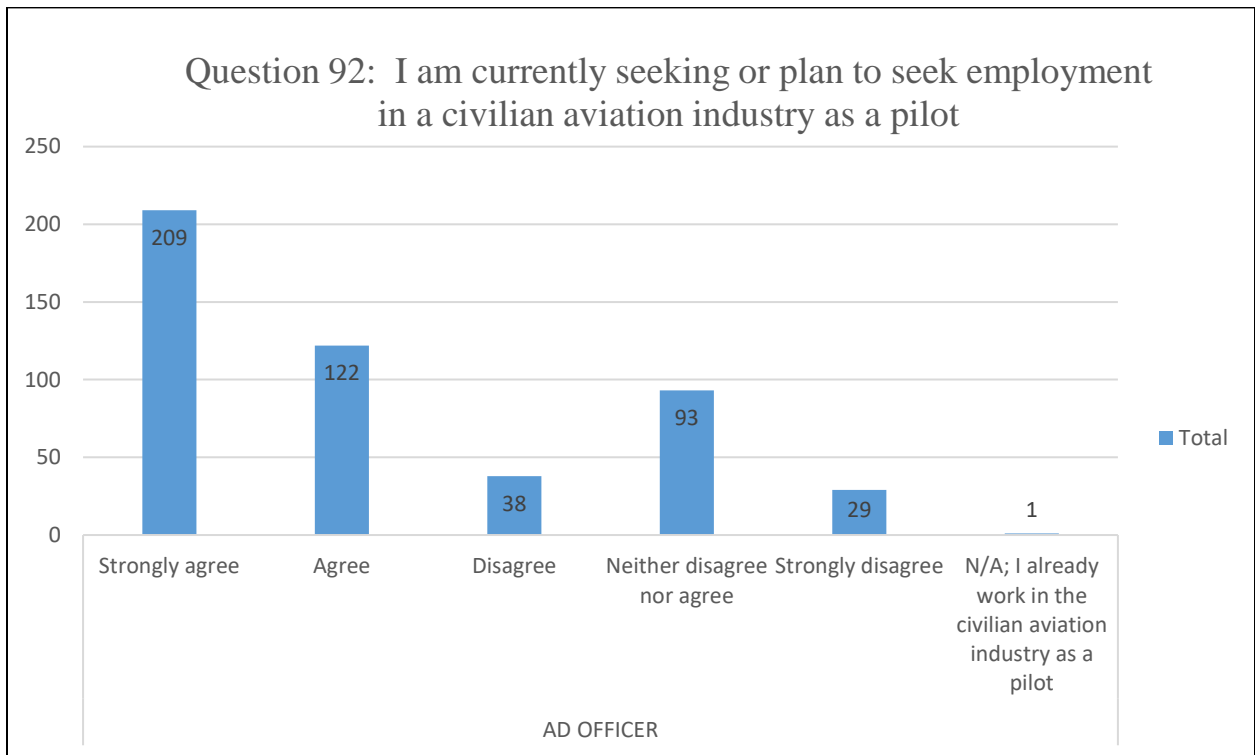


Figure 19. Question 92 from the 2019 Career Decisions Survey

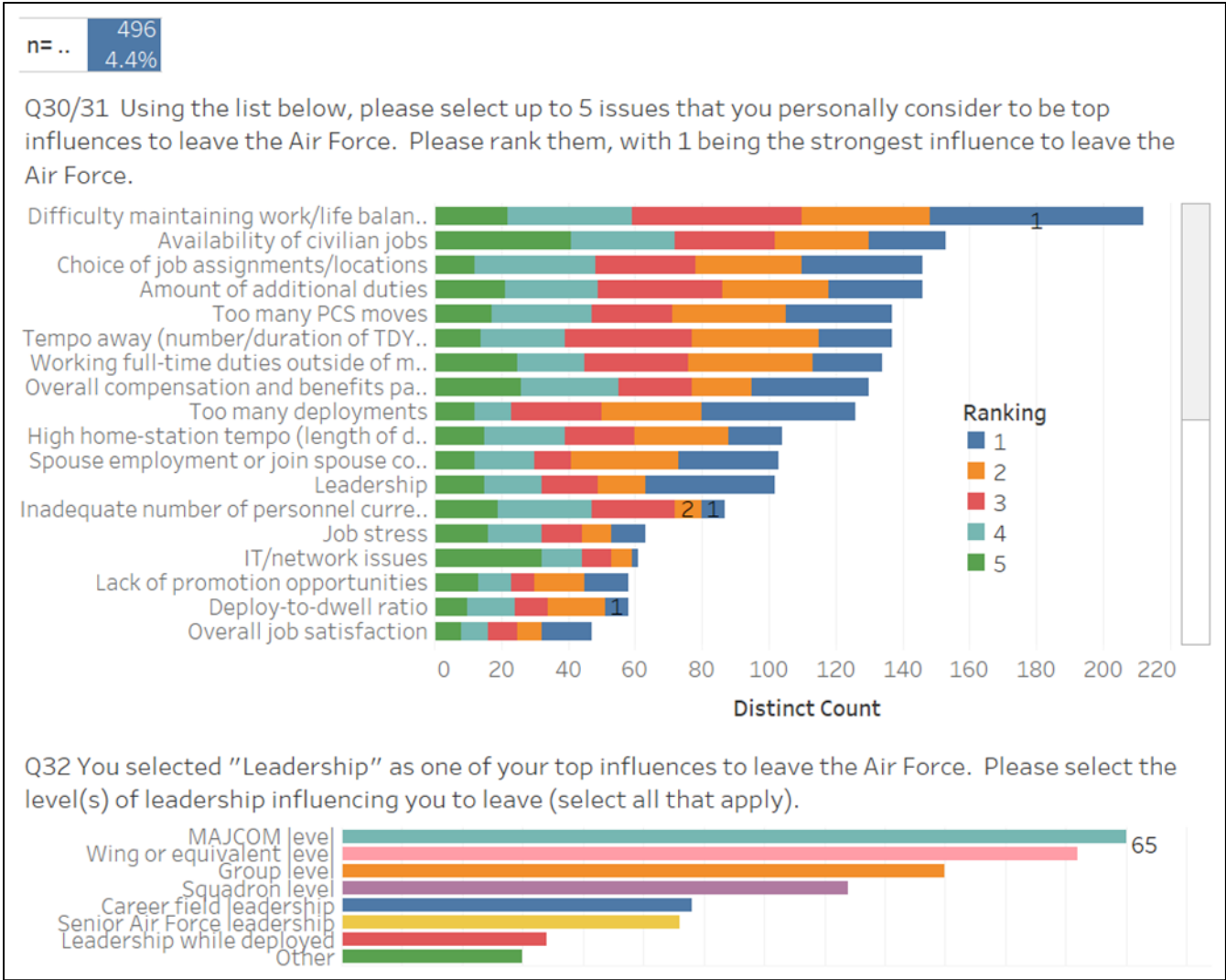


Figure 20. Top Ranked "Leave" Influences for MAF Pilots (Mitchell, 2020)

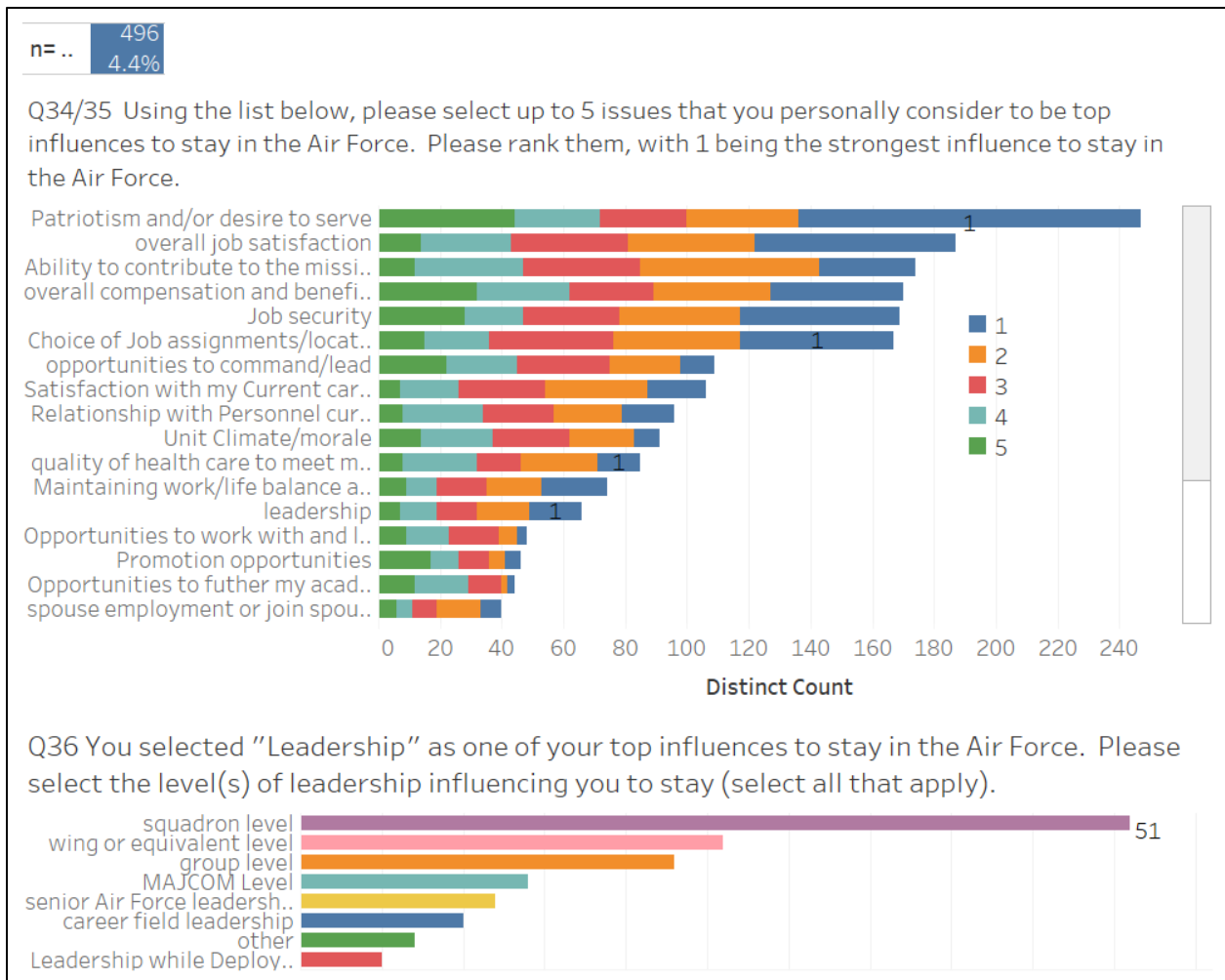


Figure 21. Top Ranked "Stay" Influences for MAF Pilots (Mitchell, 2020)

Figure 20 and Figure 21 are extracts for the AF/A1XD analysis on the Career Decisions Survey. These figures show the top five influences for staying in the Air Force as (1) patriotism, (2) job satisfaction, (3) ability to contribute to the mission, (4) compensation, and (5) job security. Conversely, Figure 20 identified the top five influences for leaving the Air Force as (1) difficulty maintaining a work/life balance, (2) availability of civilian jobs, (3) choice of job assignments, (4) high number of PCS moves, and (5) number of time away from home. The insights provided by these figures show a concern with the PERSTEMPO and uncontrollable

aspects inherently built in the military. However, the Air Force offers acceptable compensation and job security in the eyes of a majority of the surveyed populace. These findings, although not included in the analysis within this study, will add background and justification to the regression forecast built in the following section.

### **Retention Analysis on Gross Domestic Product (GDP) reaction to COVID-19**

As COVID-19 has ravaged global health and the economy, it has also shifted course for a majority of business. Multiple airlines are accepting bailouts, and with them come any measures available to cut costs and keep their company afloat during these difficult times. Where this becomes relevant to the topic at hand is that these “cost-cutting” measures will inevitably lead to reduced hiring of pilots. As of May 2020, United has launched a plan to cut around 30 percent of their pilot force, responding to the strain that COVID-19 and the subsequent economic downturn has levied on its company (Reed, 2020). With this in consideration, a look at the effects this economic downturn has on retention is valuable.

The first quarter of 2020 resulted in a daunting annualized drop in GDP of negative 4.8 percent and is only expected to get worse in quarter two (Payne, 2020). Assuming a negative 4.0 percent growth in annual GDP, a conservative estimate from an abundance of research and the forecasted minimum from economist Mr. David Payne of Kiplinger, an undesirable effect will still be had on commercial growth and employment. According to the literature, GDP is a benchmark indicator of airline industry growth and open employment opportunities (Duffin, 2020). As GDP growth rises, airline aircrew positions open for filling, and conversely, when it declines, reductions are made to save capital (Jin, Li, Sun, & Li, 2019). These forecasts of negative GDP growth followed by a slow positive growth indicate an average four percent

increase of AvB take rates per year, plateauing at the end of 2022 as the economy begins to recover fully, and airlines begin hiring again (Figure 22). The model resulted in the highest increase of AvB in 2022 when AvB take rates are expected to be 55%, an increase of 15% over what they were in 2019. AvB has been a telling metric of pilot retention for the Air Force and, as such, has been used as a primary retention indicator and forecast of workforce levels. The regression calculations can be found in Appendix E. 2019 AvB versus GDP<sup>2</sup> Regression Analysis

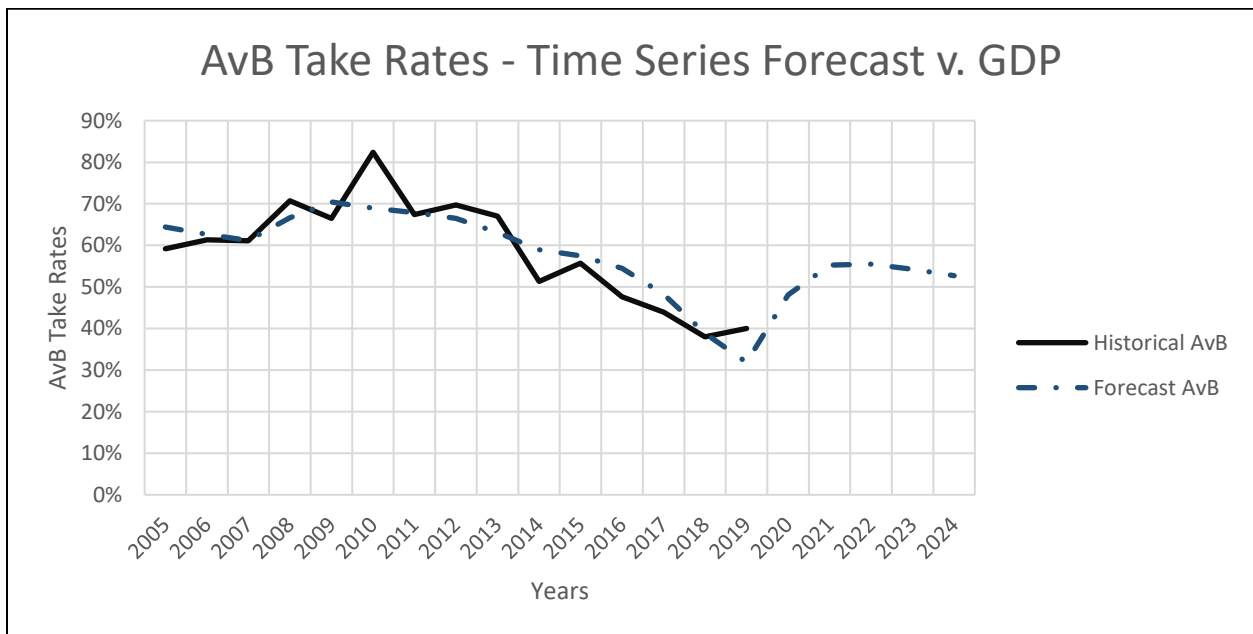


Figure 22. MAF AvB Forecast after COVID-19 effects

Furthermore, if GDP decline negatively affects job availability, then this could further add to the claim that retention will increase during this economic downturn. **In Error!** **Reference source not found.**, data from the 2019 Air Force retention survey shows that ‘availability of civilian jobs’ is ranked second among influences for MAF pilots to leave the Air Force. So, if these economic downturns lead to fewer pilot positions, then the motivation to



leave the Air Force would decline until the downturn repairs itself. Additionally, **Error!**  
**Reference source not found.** identifies that 'job security' is ranked fifth among influences for  
MAF pilots to stay in the Air Force. Reference Appendix E. 2019 AvB versus GDP<sup>2</sup>  
Regression for the computational analysis of the regression.

## Summary

Due to the timing of the COVID-19 global pandemic and an eventual AFPC denial of the AMRM survey, data was not collected for the original purpose of the research. Instead, analyses were executed on the 2019 Air Force Career Decisions survey. Lastly, a regression was performed on AvB and expected GDP growth for the near future. Findings indicate that a negative GDP growth for 2020 – 2021 will result in an increase in Air Force AvB take rate, thus resulting in an estimated 15% increase from 2019 – 2022 among MAF pilots.

The groundwork has been laid to allow future research to execute a MAF retention survey of this focus. For an unbiased, purposive sample to be had, the execution of this survey should be postponed until the environmental and economic repercussions of this pandemic have resolved, and global operations are back at a steady state.

## **V. Conclusion and Recommendation**

This chapter concludes all of the research and work done determining the current emotional climate within the MAF pilot community and if the current retention measures being instituted by the Air Force are working within the MAF. The military has been continuously competing with major airlines from raiding its active-duty pilot force with promises of higher wages and a more stable quality of life. Research findings shed light on the current Air Force MAF pilot culture and how sufficient each of the highlighted measures are performing within this community.

### **Conclusion of Research**

For the reasons articulated in Chapter II, the survey was not fielded, and no data were collected for the AMRM survey. Instead, analyses were performed on the 2019 Career Decisions Survey fielded by AF/A1DX and questions relevant to this research. Although small, the negative correlation between the amount of time separated from family, high PERSTEMPO, the importance of influence over the next assignment, compensation, and reduction in additional duties show that they affect a pilot's decision to leave the Air Force. Lastly, a regression was performed on AvB as it relates to GDP and GDP growth. It was concluded that due to the decreased economic activity caused by COVID-19, an increase in MAF AvB take-rates is expected to take form over the next three years. Until a survey similar to the AMRM is dispersed, the research initiative of determining the effectiveness of current retention measures cannot be concluded upon for MAF decision-makers.

## **Significance of Research**

The literature for this research project amply demonstrated that the global airline industry and the transportation/logistics industry are experiencing a pilot shortage. Thus, the pilot shortage is not just a workforce issue solely within the Air Force. With world populations growing and air travel continuously being a high demand for transport, trained and qualified pilots will always be a highly sought after commodity for the industry. In order for the Air Force to maintain pilot manning billets at a sufficient level, attention needs to be continuously paid towards pilot recruitment, training production pipelines, and quality of life improvements. This will allow the Air Force to produce enough pilots to carry the burden of mission required of the Air Force and entice the experienced instructor and evaluator pilot to continue serving after their initial pilot commitment is up.

Today the Air Force is focused on improving pilot production, enhancing the quality of life standards, and taking a more deliberate effort to listen and grow its pilots (and Airmen, in general). These measures will eventually begin to change the culture of the Air Force positively, but it will take time.

## **Recommendation for Action**

Based on a review of the literature and anecdotal data gathered through informal discussions with other pilots, this researcher recommends the Air Force continue to pursue measures in line with the ACTF initiatives. The messaging these actions send to the populace speaks volumes that the Air Force cares and wants the best for them and their family. Retention is an ever-changing variable, dependent on many things (i.e., PERSTEMPO, quality of life, flight training, and future potential). It will serve the Air Force best to continue to pursue efforts

of experimenting with initiatives to produce better and retain quality pilots and not be satisfied with the status quo.

### **Recommendation for Future Research**

The survey that was unable to be distributed is attached in the appendix of this paper. Future researchers interested in similar areas of study can use this as a template to survey the current pilot populace in retention areas. The literature shows that retention is a topic that is continuously revisited through different lenses; this is not the first and will not be the last research done on the topic.

### **Conclusion**

In the years following the 2020 COVID-19 pandemic, pilot retention will remain a top concern for the Air Force. A continued effort to improve the production, training, and quality of lives of their pilots will best serve the Air Force toward their desired manning levels. Although the current pandemic will most likely aid the Air Force with curbing the pilot shortage in the near term, airline competition will re-emerge, and retention will remain a problem for the foreseeable future (Insinna, 2020).

## Appendix A. Air Mobility Retention Measures (AMRM) Survey

### Gender

1. Male
2. Female

### Years on Active Duty

1. 0-8
2. 8-12
3. 12-16
4. 16+

### Major Weapons System

1. KC-10
2. KC-135
3. C-130
4. C-17
5. C-5

### Aviation Bonus

1. I'm currently under contract until retirement
2. I'm currently under contract but will expire before retirement
3. No AvB commitment

### Marital Status

1. Single
2. Married

### Number of Dependents

1. 0
2. 1
3. 2
4. 3
5. 4
6. 5+

### Commissioning Source

1. OTS
2. ROTC
3. Air Force Academy

Average annual days away from home (last 3 years)

1. 0-60
2. 60-120
3. 120-180
4. 180-240
5. 240+

Blended Retirement System

1. Enrolled in BRS
2. Enrolled in legacy High-3 retirement

To what extent is this value characteristic of your organization? INNOVATION

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Innovation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Opportunities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Experimenting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Risk Taking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Careful (-)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rule oriented (-)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization? STABILITY

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Stability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Predictability	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Security	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
No rules (-)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization?RESPECT FOR PEOPLE

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Respect for individual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Fairness	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Tolerance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization?OUTCOME ORIENTATION

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Achievement orientation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Action oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
High expectations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Results oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization?ATTENTION TO DETAIL

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Precise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Attention to detail	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization?TEAM ORIENTATION

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

			extent		
Team oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Collaboration	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People oriented	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To what extent is this value characteristic of your organization?COMPETITIVENESS

	Not at all	To a limited extent	To a moderate extent	To a large extent	To a very large extent
Aggressive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Competitive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Socially responsible (-)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Most managers are honest and truthful about information to do with the job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Most managers are sincere in their attempts to meet the worker's point of view about the job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I believe that most managers will keep their word about rewards offered for completion of a task.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
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Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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I believe what I am told by management about future plans for the company.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Most managers are incompetent at managing the workers.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management are competent when it comes to matters of safety on the job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management shows good judgment when making decisions about the job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Most managers do not understand when a worker should be rewarded for a job well done.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Management makes decisions that threaten the future of our team.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management respects my ability and knowledge of the job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Managers treat workers doing the job with respect.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Management respects the workman's position over rewards.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Managers respect my view when planning a job.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Knowing what you know now, if you had to decide all over again whether to take the job you now have, what would you decide?

	Very unlikely	Moderately unlikely	Unlikely	Neutral	Likely	Moderately likely	Very likely
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

If a good friend asked if he/she should apply for a job like yours with your employer, what would you recommend?

	Very unlikely	Moderately unlikely	Unlikely	Neutral	Likely	Moderately likely	Very likely
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How does this job compare with your ideal job?

	Poor	Below average	Average	Good	Excellent
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In general, how does your job measure up to the sort of job you wanted when you took it?

	Poor	Below average	Average	Good	Excellent
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

All things considered, how satisfied are you with your current job?

	Extremely Dissatisfied	Moderately	Slightly Dissatisfied	Neutral	Slightly Satisfied	Moderately Satisfied	Extremely Satisfied
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	d	Dissatisfie d	d				
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In general, how much do you like your job?

	Extremely Dissatisfie d	Moderatel y Dissatisfie d	Slightly Dissatisfie d	Neutral	Slightly Satisfied	Moderatel y Satisfied	Extremely Satisfied
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How satisfied are you with your?

	Extremely Dissatisfie d	Moderatel y Dissatisfie d	Slightly Dissatisfie d	Neutral	Slightly Satisfied	Moderatel y Satisfied	Extremely Satisfied
Take home pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Benefits package	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most recent raise	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Influence my supervisor has on my pay/benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My current salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Amount the company pays towards my benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The raises I have typically received in the past	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The company's pay structure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Information the company gives about pay issues of concern to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My overall level of pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The value of my benefits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pay of the other jobs in the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Consistency of the company's pay policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Size of my current salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The number of benefits I receive	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How many raises are determined	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Differences in pay among jobs in the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
How the company administers pay	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I am quite proud to tell people who it is that I work for.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I sometimes feel like leaving this employment for good

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I'm not willing to put myself out just to help the organization

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Even if the firm were not doing too well financially, I would be reluctant to change to another employer

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I feel myself to her part of the organization

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

In my work I like to feel I am making some effort, not just for myself, but for the organization as well.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The offer of a bit more money with another employer would not seriously make me think of changing my job

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I would not recommend a close friend to join our staff

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

To know that my own work had made a contribution to the good of the organization would please me

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization values my contribution to its well-being

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization strongly considers my goals and values

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Help is available from the organization when I have a problem

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization really cares about my well-being

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization is willing to help me when I need a special favor

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization cares about my general satisfaction at work

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization cares about my opinions.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization takes pride in my accomplishments at work.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The organization tries to make my job as interesting as possible.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Interpretation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The recent changes towards the deployment cycle (reducing/removing OCONUS deployment requirements, bringing back deployments stateside) has positively affected my perception of the MAF PERSTEMPO.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



The addition of Commander's Support Staff (CSS) back to the Operational Squadron has allowed me to more focus my efforts on flying & training.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The addition of the CSS back to the Operational Squadron has given me back time to spend with my friends & family.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The introduction of the Readiness Driven Allocation Process (RDAP) has increased the quality of flight training.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The re-introduction of the Squadron Deployment model would make deployments more receptive for me.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The changes to volunteer benefits for 365 deployments (preferred and advance assignments) has made the possibility of a long term deployments more palatable.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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The monetary amount of the Aviation Bonus (AvB) has positively affected my decision to remain in the military. Current AvB for 11M is \$30,000 per year (1, 2, 5, or 9 years)

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Expansion to the advance aviation courses available (Weapons School, Advanced Instrument School, Safety School, Test Pilot School, etc.) would greatly increase my motivation to stay in the military.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

What is your level of perceived fairness of pay between the military and the airline industry?

	Very Unfair	Unfair	Slightly Unfair	Average	Slightly Fair	Fair	Excellent
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The CSAF's efforts to re-focus on the Squadron has better affected my day-to-day life.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I think that the removal of Below Primary Zone (BTZ) promotion is a good overall change for the AF.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
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	Disagree		Disagree		Agree		Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I believe the creation of the Rated Engagement and Retention Branch will improve my experience/perception with the assignment process.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Headquarters Air Force (HAF) is working with AFPC to implement an Airman Centric Delivery Model (ACDM) to allow for better "flight following" of each individual Airman throughout their career. I believe these changes are a great move forward in taking care of our Airmen.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The Air Force is looking at increasing Air Force Personnel Center (AFPC) Assignment Officer's 45% in order to perform better customer service to the service member's assignment process. Likewise, Headquarters Air Force (HAF) is working with AFPC to implement an Airman Centric Delivery Model (ACDM) to allow for better "flight following" of each individual Airman throughout their career. I believe these changes are a great move forward in taking care of our Airmen.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

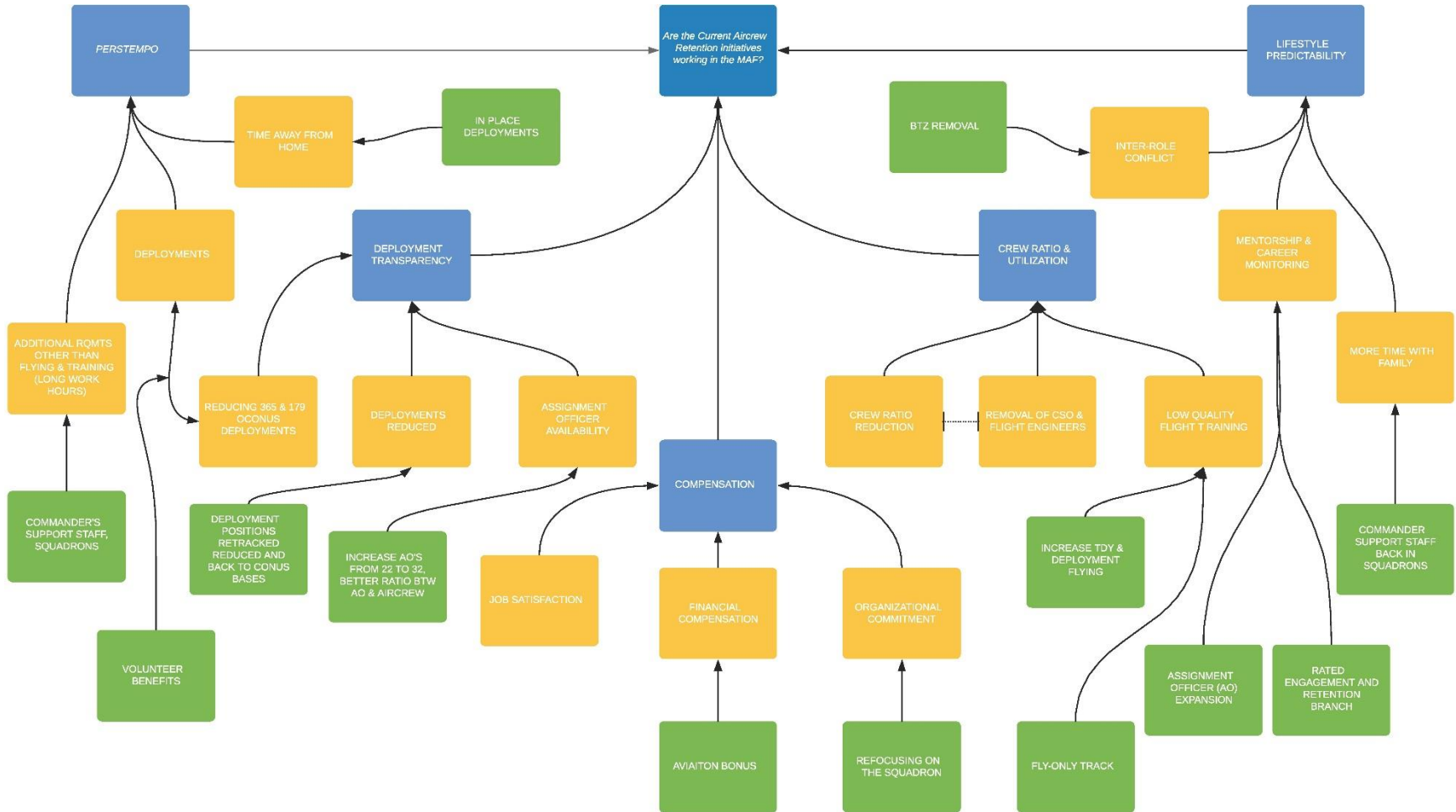
What is your perception of the pay provided to civilian pilots at a comparable point in their careers?

	>40% less	20-40% less	10-20% less	0-10% less	Same	0-10% greater	10-20% greater	20-40% greater	>40% greater
Compared to your salary	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

I plan on staying in the Air Force until retirement.

	Strongly Disagree	Disagree	Slightly Disagree	Neutral	Slightly Agree	Agree	Strongly Agree
Personal Opinion	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Appendix B. Retention Measures – Interrelationship Diagram



## Appendix C. 2019 Military Career Decisions Survey (Abbreviated)

### 2019 Military Career Decisions Survey

Q1 This official Air Force survey is your opportunity to talk directly to Senior Leadership regarding what influences you to remain in or separate/retire from the Air Force. Please take the time to thoughtfully respond to each item. The information you provide will be kept confidential. Your responses will be grouped with other responses prior to providing survey findings to Senior Leadership. Identifying information will be used only by government and contractor staff engaged in survey research and analysis supporting military talent management.

The term 'Air Force' is used throughout this survey. Respondents should interpret 'Air Force' as a Total Force term of reference for their specific component (Active Duty, Air National Guard, or Air Force Reserve).

*Do NOT provide names of individuals, units, or locations. Remember OPSEC guidance and do not discuss or comment on classified or operationally sensitive information. We cannot provide confidentiality to a participant regarding comments involving criminal activity/behavior, or statements that pose a threat to yourself or others.*

#### Privacy Act Statement

**Authority:** 10 U.S.C.; 8013, SECAF

**Purpose:** To provide senior leadership insight on what factors influence Airmen to remain in or separate/retire from the Air Force.

**Routine Uses:** Feedback will be used to re-assess personnel policies and programs.

**Disclosure:** Providing information in this survey is voluntary. Individual responses will be kept confidential.

Q2

Please indicate how important each of the following factors are to your career satisfaction.

	N/A	Not important	Slightly important	Moderately important	Very important
Having influence over your next assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your opportunities for professional growth and career broadening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Being promoted to higher grades	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your PERSTEMPO (the number of days you are away from home for official duty)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your unit's mission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Limiting the amount of time you are separated from your family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compensation (including pay, allowances, bonuses, and retirement)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of your unit's leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your unit's climate (e.g., camaraderie, teamwork, support)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q3

Please indicate your level of satisfaction with each of the following factors.

	N/A	Very dissatisfied	Dissatisfied	Neither dissatisfied nor satisfied	Satisfied	Very satisfied
Your opportunity to influence your next assignment	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your opportunities for professional growth and career broadening	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your opportunity to be promoted to higher grades	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your PERSTEMPO (the number of days you are away from home for official duty)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your unit's mission	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The amount of time you are separated from your family	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compensation (including pay, allowances, bonuses, and retirement)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of your unit's leadership	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Your unit's climate (e.g., camaraderie, teamwork, support)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



Q4 Please use the scale provided to answer the following questions.

**To what extent do you feel the Air Force values...**

	Not at all	Very little	Somewhat	To a great extent	Don't know
your input when making assignment decisions?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
professional growth and career broadening?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
promotion to higher grades?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
managing PERSTEMPO (the number of days you are away from home for official duty)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
your unit's mission?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
your career field?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
limiting the amount of time you are separated from your family?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
appropriately compensating you (including pay, allowances, bonuses, and retirement)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
developing leadership within your unit?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
your unit's climate (e.g., camaraderie, teamwork, support)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q5 How would you describe your current PERSTEMPO?

*PERSTEMPO is the number of days you are away from home for official duty.*

- Too high
- About right
- Too low

Q6

On average, how many hours per week do you spend performing additional duties?

*If you are a Traditional Guard or Reserve member NOT on orders, please respond based on time spent in an average drill weekend.*

*Additional duties include duties other than those related to the performance of your primary duties.*

- N/A; I am not assigned any additional duties
- 0 hours
- 1-9 hours
- 10-15 hours
- 16-20 hours
- 21-25 hours
- 26-30 hours
- More than 30 hours

---

Q7 How has the amount of time you spend performing additional duties changed over the last 2 years?

- Significantly increased
- Increased
- Remained the same
- Decreased
- Significantly decreased
- N/A; I have served in the Air Force for less than 2 years or have not performed any additional duties over the last 2 years

Q18 What is your current marital status?

- Married
- Separated
- Divorced
- Widowed
- Never married
- Prefer not to answer

Q19 Are you currently in a committed, romantic relationship?

- Yes
- No
- Prefer not to answer

Q20 What is the current status of your spouse/partner?

- Civilian (not a military member)
- Active duty Air Force member
- Active duty member of another military Service
- Reserve or Guard member

Q30 Using the list below, please select up to 5 issues that you personally consider to be top influences to leave the Air Force.

- Choice of job assignments/locations
- Too many PCS moves
- Not enough PCS opportunities
- Spouse employment or join spouse considerations
- Deploy-to-dwell ratio
- Too many deployments
- Too few deployments
- Tempo away (number/duration of TDYs)
- Leadership
- Overall job satisfaction
- Dissatisfaction with my current career field
- Lack of recognition of my efforts
- Amount of additional duties
- High home-station tempo (length of duty day/work schedule)
- Working full-time duties outside of my primary specialty (e.g., instructor, exec)
- Job stress
- Inadequate number of personnel currently working in my unit
- Relationship with personnel currently working in my unit
- Lack of opportunities to work with and learn from individuals who come from diverse backgrounds
- Unit climate/morale
- Hostile work environment (e.g., hazing, harassment)
- Lack of opportunity to receive an SRB or retention bonus
- Overall compensation and benefits package (e.g., pay, retirement program, leave, medical)
- Availability of civilian jobs

- Difficulty maintaining work/life balance and meeting family commitments
- Quality of health care to meet my and/or dependent(s)'s needs
- Lack of quality schools for my children
- Officer/enlisted evaluation systems
- Fitness standards
- Lack of opportunities to further my academic education or for professional development
- Lack of opportunities to command/lead
- Lack of promotion opportunities
- Career uncertainty due to potential Force Shaping/Force Management programs
- Opportunities for off-duty education using the GI Bill
- Starting a family
- Opportunity to do something other than military work
- IT/network issues

ROLE != AD

- Pay issues

ROLE != AD

- Conflicts with my civilian employment

ROLE != AD

- Lack of support from my civilian employer for my military service

Q31 Your top influences to **leave** the Air Force are listed in the box below. Please rank them by dragging them to the desired position, with 1 being the strongest influence to **leave** the Air Force.

*If your top influences are already in the desired order, please verify this by moving one of them slightly so that the list is numbered before continuing to the next question.*

- \_\_\_\_\_ Choice of job assignments/locations
- \_\_\_\_\_ Too many PCS moves
- \_\_\_\_\_ Not enough PCS opportunities
- \_\_\_\_\_ Spouse employment or join spouse considerations
- \_\_\_\_\_ Deploy-to-dwell ratio
- \_\_\_\_\_ Too many deployments
- \_\_\_\_\_ Too few deployments
- \_\_\_\_\_ Tempo away (number/duration of TDYs)
- \_\_\_\_\_ Leadership
- \_\_\_\_\_ Overall job satisfaction
- \_\_\_\_\_ Dissatisfaction with my current career field
- \_\_\_\_\_ Lack of recognition of my efforts
- \_\_\_\_\_ Amount of additional duties
- \_\_\_\_\_ High home-station tempo (length of duty day/work schedule)
- \_\_\_\_\_ Working full-time duties outside of my primary specialty (e.g., instructor, exec)
- \_\_\_\_\_ Job stress
- \_\_\_\_\_ Inadequate number of personnel currently working in my unit
- \_\_\_\_\_ Relationship with personnel currently working in my unit
- \_\_\_\_\_ Lack of opportunities to work with and learn from individuals who come from diverse backgrounds

- \_\_\_\_\_ Unit climate/morale
- \_\_\_\_\_ Hostile work environment (e.g., hazing, harassment)
- \_\_\_\_\_ Lack of opportunity to receive an SRB or retention bonus
- \_\_\_\_\_ Overall compensation and benefits package (e.g., pay, retirement program, leave, medical)
- \_\_\_\_\_ Availability of civilian jobs
- \_\_\_\_\_ Difficulty maintaining work/life balance and meeting family commitments
- \_\_\_\_\_ Quality of health care to meet my and/or dependent(s)'s needs
- \_\_\_\_\_ Lack of quality schools for my children
- \_\_\_\_\_ Officer/enlisted evaluation systems
- \_\_\_\_\_ Fitness standards
- \_\_\_\_\_ Lack of opportunities to further my academic education or for professional development
- \_\_\_\_\_ Lack of opportunities to command/lead
- \_\_\_\_\_ Lack of promotion opportunities
- \_\_\_\_\_ Career uncertainty due to potential Force Shaping/Force Management programs
- \_\_\_\_\_ Opportunities for off-duty education using the GI Bill
- \_\_\_\_\_ Starting a family
- \_\_\_\_\_ Opportunity to do something other than military work
- \_\_\_\_\_ IT/network issues

ROLE != AD

- \_\_\_\_\_ Pay issues

ROLE != AD

- \_\_\_\_\_ Conflicts with my civilian employment



\_\_\_\_\_ Lack of support from my civilian employer for my military service

Q35 Your top influences to stay in the Air Force are listed in the box below. Please rank them by dragging them to the desired position, with 1 being the strongest influence to stay in the Air Force.

*If your top influences are already in the desired order, please verify this by moving one of them slightly so that the list is numbered before continuing to the next question.*

- \_\_\_\_\_ Choice of job assignments/locations
- \_\_\_\_\_ Spouse employment or join spouse considerations
- \_\_\_\_\_ Leadership
- \_\_\_\_\_ Overall job satisfaction
- \_\_\_\_\_ Satisfaction with my current career field
- \_\_\_\_\_ Recognition of my efforts
- \_\_\_\_\_ Job security
- \_\_\_\_\_ Relationship with personnel currently working in my unit
- \_\_\_\_\_ Opportunities to work with and learn from individuals who come from diverse backgrounds
- \_\_\_\_\_ Unit climate/morale
- \_\_\_\_\_ Opportunity to receive an SRB or retention bonus
- \_\_\_\_\_ Air Force incentives tied to increased service commitment
- \_\_\_\_\_ Overall compensation and benefits package (e.g., pay, retirement program, leave, medical)
- \_\_\_\_\_ Maintaining work/life balance and meeting family commitments
- \_\_\_\_\_ Quality of health care to meet my and/or dependent(s)'s needs
- \_\_\_\_\_ Accessibility of quality care at medical facilities
- \_\_\_\_\_ Availability of quality housing at my location
- \_\_\_\_\_ Availability of quality schools for my children
- \_\_\_\_\_ Opportunities to further my academic education or for professional development

- \_\_\_\_\_ Opportunities to command/lead
- \_\_\_\_\_ Promotion opportunities
- \_\_\_\_\_ GI Bill benefits
- \_\_\_\_\_ Tuition assistance
- \_\_\_\_\_ Starting a family
- \_\_\_\_\_ Ability to contribute to the mission
- \_\_\_\_\_ Patriotism and/or desire to serve

**ROLE != AD**

- \_\_\_\_\_ TRICARE Reserve Select

Q38 What are your current intentions toward remaining in the Air Force beyond your current enlistment or service commitment?

- Definitely will remain in the Air Force beyond current enlistment or service commitment
- Leaning toward remaining in the Air Force beyond current enlistment or service commitment
- Undecided
- Leaning toward NOT remaining in the Air Force beyond current enlistment or service commitment
- Definitely will NOT remain in the Air Force beyond current enlistment or service commitment

Q45 How does receiving a bonus or incentive pay influence your decision regarding remaining in the Air Force beyond your current enlistment or service commitment?

- Strong influence to stay
- Influence to stay
- Neither an influence to stay nor leave
- Influence to leave
- Strong influence to leave

Q46 Please rate the amount of the bonus offered for your career field and zone/Total Active Federal Military Service (for enlisted members) or pay grade (for officers).

- Too high
- Appropriate
- Too low

Q50

How do each of the following influence your decision regarding remaining in the Air Force beyond your current enlistment or service commitment?

*For Guard and Reserve members, please select "N/A; Did not consider" if you are not qualified for the specific policy or program.*

	N/A; Did not consider	Strong influence to stay	Influence to stay	Neither an influence to stay nor leave	Influence to leave	Strong influence to leave
Creation of the Military Parental Leave Program (established in 2019 to provide 6 weeks primary caregiver leave, 6 weeks convalescent leave and 3 weeks secondary caregiver leave)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Expansion of the post-pregnancy deployment deferment policy to 12 months	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Child care	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q84 On average, how many hours per week do you work in your Air Force job at your home station (excluding exercises)?

- Less than 38 hours per week
- 38-42 hours per week
- 43-50 hours per week
- 51-60 hours per week
- More than 60 hours per week

Q87 Please select your Core AFSC if you are Active Duty Officer, Control AFSC if you are Active Duty Enlisted, or Duty AFSC if you are Guard or Reserve.

OEC = OFF

- 11X Pilot

OEC = OFF

- 12X Combat Systems

OEC = OFF

- 13B Air Battle Manager

OEC = OFF

- 18X Remotely Piloted Aircraft (RPA)

OEC = ENL

- 1U1X1 Remotely Piloted Aircraft (RPA) Pilot
- None of the above

Q90 How satisfied are you with your opportunity to sustain and enhance your aviation skills?

- Very dissatisfied
- Dissatisfied
- Neither dissatisfied nor satisfied
- Satisfied
- Very satisfied

Q91 To what extent do you feel the Air Force values your aviation skills?

- Not at all
- Very little
- Somewhat
- To a great extent
- Don't know

Q92

Please indicate your level of agreement with the following statement.

I am currently seeking or plan to seek employment in the civilian aviation industry **as a pilot**.

- N/A; I already work in the civilian aviation industry as a pilot
- Strongly disagree
- Disagree
- Neither disagree nor agree
- Agree
- Strongly agree

Q100 How do each of the following influence your decision regarding remaining in the Air Force beyond your current enlistment?

	Strong influence to stay	Influence to stay	Neither an influence to stay or leave	Influence to leave	Strong influence to leave
Frequency of PCS assignments for your AFSC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Locations of PCS assignments for your AFSC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security clearance or mission access issues	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q105 Which of the following **best** describes your preference as you advance in rank?

- Stay in a technical role and continue performing language duties, with minimal additional duties
- Take on more leadership/administrative duties and move away from technical job roles
- Balance leadership/administrative duties with my technical job role



Q106 Please indicate your level of agreement with the following statements.

	N/A	Strongly disagree	Disagree	Neither disagree nor agree	Agree	Strongly agree
The personnel in my work center are properly trained/qualified for the mission tasks assigned to them.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have been adequately trained to perform the mission-related tasks under my responsibility.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The day-to-day tasks under my responsibility are appropriate for my level of experience and proficiency.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel empowered to fulfill my duties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel capable of fulfilling my duties.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The personnel in my work center are being utilized effectively/efficiently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am being utilized effectively/efficiently.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

# Appendix D. 2019 Military Career Decisions Survey Correlation Results

		Q38	Q2_1	Q2_2	Q2_3	Q2_4	Q2_5	Q2_6	Q2_7	Q2_8	Q2_9	Q3_1	Q3_2	Q3_3	Q3_4	Q3_5	Q3_6	Q3_7	Q3_8	
Spearman's rho	Q38	Correlation Coefficient	1.000	-0.073	.245**	.132**	-.101*	.126**	-.164**	-0.052	0.022	0.062	-.293**	-.266**	.232**	.159**	.169**	.149**	-.169**	-.158**
		Sig. (2-tailed)		0.103	0.000	0.003	0.025	0.005	0.000	0.244	0.630	0.168	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_1	Correlation Coefficient	-0.073	1.000	-0.012	0.043	0.086	-.092*	.097*	.222**	-0.044	-0.064	-.187**	-.093*	-0.053	-0.058	-0.054	-0.004	-.118**	0.007
		Sig. (2-tailed)	0.103		0.786	0.343	0.055	0.040	0.030	0.000	0.330	0.154	0.000	0.037	0.241	0.195	0.234	0.929	0.009	0.874
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_2	Correlation Coefficient	.245**	-0.012	1.000	.417**	0.011	.239**	-0.019	-0.032	.183**	.206**	0.075	-0.021	0.082	.139**	.153**	.105*	.143**	0.048
		Sig. (2-tailed)	0.000	0.786		0.000	0.805	0.000	0.681	0.479	0.000	0.000	0.095	0.648	0.069	0.002	0.001	0.019	0.001	0.289
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_3	Correlation Coefficient	.132**	0.043	.417**	1.000	.092*	0.082	0.078	.271**	0.087	0.041	0.045	-0.012	-0.003	0.075	0.088	0.057	-0.031	0.046
		Sig. (2-tailed)	0.003	0.343	0.000		0.041	0.066	0.082	0.000	0.052	0.362	0.318	0.787	0.949	0.093	0.050	0.206	0.489	0.303
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_4	Correlation Coefficient Sig. (2-tailed)	-.101*	0.086	0.011	.092*	1.000	-0.068	.660**	.173**	0.004	-0.025	0.010	-0.054	-0.067	-.295**	-0.035	-.264**	-.114*	0.061
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_5	Correlation Coefficient Sig. (2-tailed)	.126**	-.092*	.239**	0.082	-0.068	1.000	-0.080	-0.019	.340**	.379**	.112*	.139**	.091*	0.078	.238**	.120**	.117**	0.079
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_6	Correlation Coefficient Sig. (2-tailed)	-.164**	.097*	-0.019	0.078	.660**	-0.080	1.000	.182**	-0.019	-0.049	0.017	0.001	-0.032	-.207**	0.009	-.195**	-0.076	0.063
		N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496
	Q2_7	Correlation Coefficient Sig. (2-tailed)	-0.052	.222**	-0.032	.271**	.173**	-0.019	.182**	1.000	0.052	-0.037	-.096*	-.113*	-0.065	-.109*	-0.011	-.106*	-.480**	0.023
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q2_8	Correlation Coefficient Sig. (2-tailed)	0.022	-0.044	.183**	0.087	0.004	.340**	-0.019	0.052	1.000	.698**	0.053	-0.010	0.023	.112*	.096*	.088*	0.003	0.067	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q2_9	Correlation Coefficient Sig. (2-tailed)	0.168	-0.064	.206**	0.041	-0.025	.379**	-0.049	-0.037	.698**	1.000	.112*	0.020	0.040	.126**	.136**	.115*	0.064	.137**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_1	Correlation Coefficient Sig. (2-tailed)	-.293**	-.187**	0.075	0.045	0.010	.112*	0.017	-.096*	0.053	.112*	1.000	.464**	.316**	.264**	.172**	.224**	.254**	.213**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_2	Correlation Coefficient Sig. (2-tailed)	-.266**	-.093*	-0.021	-0.012	-0.054	.139**	0.001	-.113*	-0.010	0.020	.464**	1.000	.554**	.275**	.269**	.231**	.265**	.233**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_3	Correlation Coefficient Sig. (2-tailed)	.232**	-0.053	0.082	-0.003	-0.067	.091*	-0.032	-0.065	0.023	0.040	.316**	.554**	1.000	.218**	.123**	.118**	.225**	.148**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_4	Correlation Coefficient Sig. (2-tailed)	.159**	-0.058	.139**	0.075	-.295**	0.078	-.207**	-.109*	.112*	.126**	.264**	.275**	1.000	.218**	.243**	.755**	.350**	.164**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_5	Correlation Coefficient Sig. (2-tailed)	.169**	-0.054	.153**	0.088	-0.035	.238**	0.009	-0.011	.096*	.136**	.172**	.269**	.269**	1.000	.243**	.247**	.164**	.377**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_6	Correlation Coefficient Sig. (2-tailed)	.149**	-0.004	.105*	0.057	-.264**	.120**	-.195**	-.106*	.088*	.115*	.224**	.231**	.118**	.755**	1.000	.247**	.316**	.154**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_7	Correlation Coefficient Sig. (2-tailed)	-.169**	-.118**	.143**	-0.031	-.114*	.117**	-0.076	-.480**	0.003	0.064	-.254**	-.265**	.225**	.350**	1.000	.164**	.316**	.134**	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_8	Correlation Coefficient Sig. (2-tailed)	.158**	0.007	0.048	0.046	0.061	0.079	0.063	0.023	0.067	.137**	.213**	.233**	.148**	.377**	.377**	1.000	.154**	1.000	
	N	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	496	
Q3_9			0.024		0.062	-0.014		0.011	0.007	0.042				-.277**		-.468**			-.691**	

	Correlation Coefficient Sig. (2-tailed)	.161** 0.000	0.595 496	.091* 0.043	0.171 496	0.755 496	.134** 0.003	0.806 496	0.884 496	0.356 496	.142** 0.002	.214** 0.000	0.000 496	.174** 0.000	.214** 0.000	0.000 496	.194** 0.000	.195** 0.000	0.000 496
Q4_1	Correlation Coefficient Sig. (2-tailed)	.230** 0.000	-.121** 0.007	.112** 0.013	0.085 0.138	0.003 0.267	0.088 0.051	0.009 0.842	-.106* 0.018	0.034 0.160	0.063 0.160	.596** 0.000	.366** 0.000	.292** 0.000	.201** 0.000	.206** 0.000	.128** 0.004	.243** 0.000	.171** 0.000
Q4_2	Correlation Coefficient Sig. (2-tailed)	.203** 0.000	-.106* 0.018	-.095** 0.034	-0.067 0.138	0.050 0.267	0.075 0.093	0.049 0.279	-.091** 0.044	0.055 0.340	0.043 0.340	.272** 0.000	.459** 0.000	.393** 0.000	.103** 0.021	.186** 0.000	0.079 0.081	.163** 0.000	0.087 0.053
Q4_3	Correlation Coefficient Sig. (2-tailed)	0.087 0.052	-.117** 0.009	0.044 0.331	-.109* 0.015	-0.038 0.399	0.083 0.064	-0.063 0.158	-0.060 0.181	0.045 0.322	0.079 0.079	.163** 0.000	.270** 0.000	.359** 0.000	.141** 0.002	.123** 0.006	0.085 0.060	.144** 0.001	0.084 0.061
Q4_4	Correlation Coefficient Sig. (2-tailed)	.166** 0.000	-0.055 0.218	.142** 0.002	0.083 0.065	-.187** 0.000	.151** 0.001	-.135** 0.003	-.088** 0.049	0.035 0.433	0.064 0.153	.248** 0.000	.236** 0.000	.162** 0.000	.394** 0.000	.214** 0.000	.391** 0.000	.299** 0.000	0.085 0.060
Q4_5	Correlation Coefficient Sig. (2-tailed)	.173** 0.000	-0.006 0.899	0.070 0.119	.118** 0.008	.099** 0.027	0.030 0.512	-.115** 0.010	-0.018 0.697	0.029 0.519	0.036 0.428	.165** 0.000	.206** 0.000	.208** 0.000	.116** 0.010	.247** 0.000	.113** 0.012	.144** 0.001	.152** 0.001
Q4_6	Correlation Coefficient Sig. (2-tailed)	.239** 0.000	-0.031 0.494	.122** 0.007	0.029 0.522	-0.007 0.878	0.033 0.460	-0.022 0.624	-.169** 0.000	-0.040 0.370	0.026 0.569	.299** 0.000	.325** 0.000	.340** 0.000	.188** 0.000	.173** 0.000	.118** 0.009	.333** 0.000	.188** 0.000
Q4_7	Correlation Coefficient Sig. (2-tailed)	.187** 0.000	-0.054 0.232	.133** 0.003	0.068 0.131	-.234** 0.000	.179** 0.000	-.194** 0.000	-0.080 0.075	0.043 0.339	0.083 0.065	.230** 0.000	.217** 0.000	.161** 0.000	.401** 0.000	.148** 0.001	.413** 0.000	.250** 0.000	0.019 0.668
Q4_8	Correlation Coefficient Sig. (2-tailed)	.214** 0.000	-.122** 0.007	.107** 0.017	0.019 0.677	-.117** 0.009	.133** 0.003	-0.087 0.052	-.319** 0.000	0.006 0.183	0.060 0.183	.236** 0.000	.275** 0.000	.251** 0.000	.277** 0.000	.152** 0.001	.196** 0.000	.631** 0.000	.128** 0.004
Q4_9	Correlation Coefficient Sig. (2-tailed)	.164** 0.000	0.003 0.941	-0.023 0.612	-0.015 0.746	0.000 0.992	.100* 0.026	0.002 0.967	-0.044 0.331	-0.054 0.226	-0.020 0.661	.183** 0.000	.427** 0.000	.302** 0.000	.133** 0.003	.221** 0.000	.115** 0.010	.186** 0.000	.238** 0.000
Q4_10	Correlation Coefficient Sig. (2-tailed)	.109** 0.015	0.013 0.772	0.048 0.286	0.045 0.318	-0.037 0.417	.091** 0.043	0.003 0.943	-0.005 0.907	-0.014 0.763	-0.010 0.821	.142** 0.001	.255** 0.000	.200** 0.000	.137** 0.002	.224** 0.000	.147** 0.001	.128** 0.004	.220** 0.000
Q5	Correlation Coefficient Sig. (2-tailed)	-0.063 0.161	0.031 0.485	0.017 0.705	0.052 0.246	.351** 0.000	0.012 0.782	.265** 0.000	.116** 0.010	-.092* 0.040	-.100* 0.026	-.098* 0.029	-0.065 0.146	-0.007 0.878	-.558** 0.000	-0.055 0.224	-.514** 0.000	-.172** 0.000	-0.002 0.971
Q6	Correlation Coefficient Sig. (2-tailed)	-0.070 0.120	0.065 0.151	-.133** 0.003	0.006 0.898	0.038 0.398	-0.050 0.270	-0.027 0.547	.174** 0.000	0.025 0.575	0.000 0.992	-.139** 0.002	-.188** 0.000	-.136** 0.002	-.222** 0.000	-.121** 0.007	-.166** 0.000	-.285** 0.000	-0.036 0.418
Q7	Correlation Coefficient Sig. (2-tailed)	-0.038 0.396	0.059 0.192	-0.027 0.545	-0.042 0.345	0.074 0.102	-0.081 0.070	0.023 0.604	.139** 0.002	-0.024 0.590	-0.014 0.757	-.187** 0.000	-.167** 0.000	-.157** 0.000	-.216** 0.000	-.085 0.058	-.206** 0.000	-.126** 0.005	-0.016 0.714
Q45	Correlation Coefficient Sig. (2-tailed)	.194** 0.000	0.019 0.681	0.073 0.115	.188** 0.000	-0.087 0.060	0.073 0.114	-0.045 0.334	.165** 0.000	0.042 0.362	-0.049 0.287	0.027 0.559	0.081 0.082	0.008 0.859	.105** 0.024	.182** 0.000	0.072 0.122	-0.011 0.810	.131** 0.005
Q46	Correlation Coefficient Sig. (2-tailed)	.172** 0.000	-0.065 0.161	0.037 0.420	-.102* 0.028	-.158** 0.001	0.067 0.149	-.160** 0.001	-.278** 0.000	-0.016 0.725	0.044 0.347	.195** 0.000	.175** 0.000	.121** 0.009	.195** 0.000	.161** 0.000	.129** 0.005	.351** 0.000	0.088 0.057
Q50_1	Correlation Coefficient Sig. (2-tailed)	0.081 0.072	0.000 0.997	0.082 0.068	0.039 0.384	.134** 0.003	0.025 0.585	.120** 0.007	0.074 0.099	0.011 0.807	0.050 0.265	.090* 0.046	0.027 0.552	.119** 0.008	-.112** 0.013	0.013 0.765	-.095** 0.034	-0.052 0.246	0.020 0.652
Q50_2	Correlation Coefficient Sig. (2-tailed)	0.051 0.253	0.034 0.450	0.067 0.134	0.022 0.630	.117** 0.009	-0.005 0.908	.089* 0.049	0.045 0.322	-0.009 0.840	0.005 0.919	.158** 0.000	0.035 0.437	.089* 0.047	-0.035 0.437	-0.004 0.924	-0.026 0.569	0.014 0.755	-0.010 0.824
Q50_3	Correlation Coefficient Sig. (2-tailed)	0.034 0.444	-0.018 0.694	0.035 0.440	0.002 0.958	.089* 0.048	0.033 0.461	.103* 0.022	0.062 0.165	0.028 0.534	0.037 0.408	.131** 0.003	0.056 0.211	.097* 0.030	-0.058 0.196	0.044 0.324	-0.034 0.444	-0.012 0.797	0.038 0.399
Q90	Correlation Coefficient Sig. (2-tailed)	.125** 0.006	-0.005 0.904	0.047 0.298	0.042 0.352	0.006 0.891	0.036 0.422	-0.015 0.737	-0.048 0.291	-0.022 0.623	-0.027 0.548	.286** 0.000	.302** 0.000	.280** 0.000	.205** 0.000	.228** 0.000	.123** 0.006	.256** 0.000	.107 0.018
Q91	Correlation Coefficient Sig. (2-tailed)	.267** 0.000	0.015 0.737	.215** 0.000	.145** 0.001	0.055 0.226	0.020 0.653	0.057 0.205	-0.071 0.115	0.059 0.194	.098* 0.030	.351** 0.000	.354** 0.000	.353** 0.000	.243** 0.000	.255** 0.000	.163** 0.000	.257** 0.000	.188** 0.000



	.165** 0.000	.109* 0.015	.126** 0.005	.187** 0.000	.185** 0.000	0.000 496	.122** 0.007	.145** 0.001	.236** 0.000	0.000 496	-.096* 0.033	0.147 496	0.138 496	.116* 0.012	.120** 0.009	0.965 496	0.617 496	0.272 496	0.000 492	0.000 492	0.077 492
.165** 0.000 496	1.000	.337**	.167**	.384**	.275**	.324**	.331**	.305**	.260**	.240**	-0.074 0.101	-.149** 0.001	-0.085 0.060	0.018 0.693	.229** 0.000	0.068 0.133	0.054 0.233	0.085 0.058	.232** 0.000	.368**	-.112* 0.013
	.496	.496	.496	.496	.496	.496	.496	.496	.496	.496	.496	.496	.496	.466	.466	.496	.496	.496	.492	.492	.492
.109*	.337**	1.000	.433**	.191**	.246**	.250**	.170**	.257**	.372**	.232**	0.005	-0.083	-0.080	0.019	.133**	.095*	-0.002	.109*	.157**	.238**	-0.088



0.077	-.112'	0.051	0.183	-.175**	0.143	-.189**	-.158**	-.192**	0.140	0.319	-.117**	-.180**	-.108'	-.108'	-.200**	0.411	-.090'	0.872	-.174**	0.000	
.492	0.013	.492	.492	0.000	.492	0.000	0.000	0.000	.492	.492	0.009	0.000	0.016	0.020	0.000	.492	0.045	.492	0.000	.492	.492

## Appendix E. 2019 AvB versus GDP<sup>2</sup> Regression Analysis

Fiscal Year	MAF AvB Take Rate (Yt)	GDP^2	GDP	GDP Growth	Forecasted MAF AvB
1990	24%	36056422.09	6004.70	1.89%	
1991	23%	39243960.25	6264.50	-0.11%	
1992	23%	44633088.64	6680.80	3.52%	
1993	42%	49191987.69	7013.70	2.75%	
1994	57%	55581498.09	7455.30	4.03%	
1995	69%	60413310.76	7772.60	2.68%	
1996	58%	68224296.04	8259.80	3.77%	
1997	53%	76841002.81	8765.90	4.45%	
1998	29%	86378436.00	9294.00	4.48%	
1999	20%	97998120.36	9899.40	4.75%	
2000	20%	108972721.00	10439.00	4.13%	
2001	24%	113635600.00	10660.00	1.00%	
2002	59%	122578112.25	11071.50	1.74%	
2003	59%	138516422.49	11769.30	2.86%	
2004	71%	156810501.76	12522.40	3.80%	
2005	59%	177750223.29	13332.30	3.51%	64.44%
2006	61%	197042983.84	14037.20	2.86%	62.67%
2007	61%	21546442.25	14681.50	1.88%	61.15%
2008	71%	211979040.25	14559.50	-0.14%	66.68%
2009	67%	213978384.00	14628.00	-2.54%	70.44%
2010	82%	232281984.64	15240.80	2.56%	68.98%
2011	67%	249529412.25	15796.50	1.55%	67.86%
2012	70%	267613609.21	16358.90	2.25%	66.48%
2013	67%	291832305.61	17083.10	1.84%	63.13%
2014	51%	318618930.01	17849.90	2.45%	58.96%
2015	56%	336883999.36	18354.40	2.88%	57.52%
2016	48%	360213828.49	18979.30	1.57%	54.46%
2017	44%	393300291.24	19831.80	2.22%	48.28%
2018	38%	436450593.96	20891.40	2.86%	38.88%
2019	40%	472153786.81	21729.10	2.32%	31.86%
2020		435136929.92	20859.94	-4.00%	48.09%
2021		426477705.02	20651.34	-1.00%	55.25%
2022		439367993.65	20961.11	1.50%	55.52%
2023		457118460.60	21380.33	2.00%	54.24%
2024		475586046.40	21807.94	2.00%	52.73%

SUMMARY OUTPUT					
Regression Statistics					
Multiple R	0.890397971				
R Square	0.792808547				
Adjusted R Square	0.758276638				
Standard Error	0.062036341				
Observations	15				

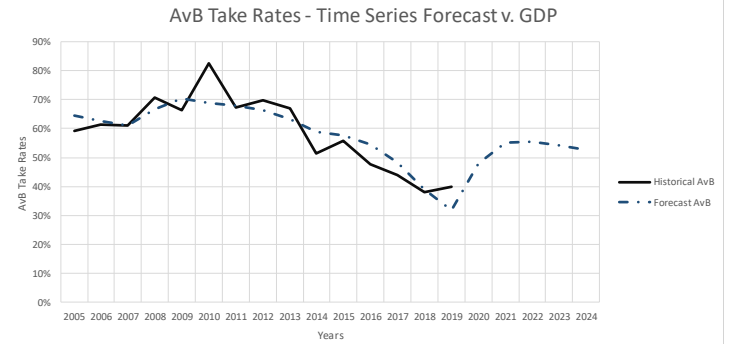
ANOVA					
	df	SS	MS	F	Significance F
Regression	2	0.176713643	0.088356821	22.95872354	7.91099E-05
Residual	12	0.046182091	0.003848508		
Total	14	0.222895733			

	Coefficients	Standard Error	t-Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.168556311	0.105285824	11.09889506	1.14822E-07	0.939158207	1.397954415	0.939158207	1.397954415
X Variable 1	0.043933777	0.015381248	2.856320653	0.014452212	0.010420916	0.077446637	0.010420916	0.077446637
X Variable 2	-3.19585E-09	7.51397E-10	-4.253210432	0.001120912	-4.833E-09	-1.5587E-09	-4.833E-09	-1.5587E-09

RESIDUAL OUTPUT		
Observation	Predicted Y	Residuals
1	0.644427352	-0.052427352
2	0.626704394	-0.013704394
3	0.611503926	-0.000503926
4	0.666838578	0.040161422
5	0.704382756	-0.039382756
6	0.689821003	0.134178997
7	0.678634618	-0.004634618
8	0.664774046	0.032225954
9	0.631308545	0.038691455
10	0.589636336	-0.076636336
11	0.575197723	-0.018197723
12	0.544572906	-0.068572906
13	0.48276737	-0.04376737
14	0.388799328	-0.008799328
15	0.318631119	0.081368881





## Appendix F. Quad Chart (Story Board)

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<b>4. TITLE AND SUBTITLE</b> How are the Air Force pilot retention measures working in the Mobility Air Forces?				<b>5a. CONTRACT NUMBER</b>	
				<b>5b. GRANT NUMBER</b>	
				<b>5c. PROGRAM ELEMENT NUMBER</b>	
<b>6. AUTHOR(S)</b> Strength, Ryan N, Major				<b>5d. PROJECT NUMBER</b>	
				<b>5e. TASK NUMBER</b>	
				<b>5f. WORK UNIT NUMBER</b>	
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Air Force Institute of Technology Graduate School of Engineering and Management (AFIT/EN) 2950 Hobson Way Wright-Patterson AFB OH 45433-7765				<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b> AFIT-ENS-MS-20-J-055	
<b>9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> Headquarters Air Force, Aircrew Task Force Deputy Director, Scott C. Linck, Colonel, USAF 1565 AF Pentagon, 811 FSS/FSH Washington, DC 20330 scott.c.linck.mil@mail.mil				<b>10. SPONSOR/MONITOR'S ACRONYM(S)</b> HAF/ACTF	
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<b>15. SUBJECT TERMS</b> Mobility Aircrew Retention Culture Survey					
<b>16. SECURITY CLASSIFICATION OF:</b>			<b>17. LIMITATION OF ABSTRACT</b>	<b>18. NUMBER OF PAGES</b>	<b>19a. NAME OF RESPONSIBLE PERSON</b>
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