NAVAL POSTGRADUATE SCHOOL

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THESIS

STUDY OF ENLISTMENT TEST SCORES AND OTHER ATTRITION FACTORS FROM THE NAVY'S DELAYED ENTRY PROGRAM

by

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March 2009

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13. ABSTRACT (maximum 200 words)

This study focuses on the effects of the Armed Forces Qualification Test (AFQT) percentile score and age on Navy Delayed Entry Program (DEP) attrition. The data used in the study were collected from fiscal years 1999 through 2008 and were provided by the Defense Manpower Data Center (DMDC). Men and women were analyzed separately because of historic differences in attrition by gender and sample size.

Regression analysis was conducted using three different models, each with age and AFQT score as the primary variables of interest.   In the first model, with the use of an interaction variable, the effect of AFQT score on DEP attrition depended upon the age of the individual. The second and third models employed only binary variables to estimate a Linear Probability Model (LPM).

The results of this study indicate that the effect of AFQT score on DEP attrition depends on the age of the individual. Generally as a person gets older, he or she is more likely to attrite from the DEP. Males generally have lower attrition rates than females. High school graduates make up the majority of DEP applicants and generally have lower attrition rates than persons holding other Education Credentials.

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STUDY OF ENLISTMENT TEST SCORES AND OTHER ATTRITION FACTORS FROM THE NAVY'S DELAYED ENTRY PROGRAM

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iii

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ABSTRACT

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TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

I. INTRODUCTION

A. GENERAL INFORMATION

Each year, thousands of prospective recruits join the Delayed Entry Program (DEP) where they may spend up to 15 months awaiting shipment to Navy Recruit Training Command (RTC). The Commander, Navy Recruiting Command (CNRC) defines a person's status while in DEP as:

> Delayed entry is the military status gained by an enlistment in which a service member's entry on active duty (ACDU) or initial active duty for training (IADT) is postponed for up to 365 days (12 months) with the exception of juniors who will be mid-year graduates. All up and coming new high school seniors (scheduled to graduate at the completion of the next school year) entering DEP during the months of May, June and July are authorized to remain in DEP for a maximum of 455 days (15 months).[1]

Essentially, the DEP is a means for the Navy to account for and manage the readiness of potential recruits until they fulfill all eligibility requirements for accession to active duty and shipment to recruit training. Many factors may account for why a member of the DEP does not complete the program. CNRC further defines four goals of the DEP intended to reduce attrition and "enhance program effectiveness." These goals include: increased motivation, mental and physical enhancement, screening for disqualifying traits, and encouragement for DEP members "to provide quality referrals."[2] Intuitively, these goals make sense in their intended purpose to reduce attrition and enhance program effectiveness; however, other traits can be quantified that measure the likelihood of success for DEP members.

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[1] Commander, Navy Recruiting Command (CNRC), *Navy Recruiting Manual-Enlisted COMNAVCRUITCOMINST 1130.8H Volume V,* (Millington, TN: CNRC, 2005), 1-1-1.

[2] Ibid.

The Navy has used Armed Forces Qualification Test (AFQT) score, education credential, and age to screen applicants for DEP admission. The score is calculated from Armed Services Vocational Aptitude Battery (ASVAB) subsets, which include Mathematics Knowledge, Arithmetic Reasoning, Word Knowledge, and Paragraph Comprehension.[3] The AFQT percentile scores are grouped into categories shown in Figure 1. Different education credentials are categorized into Tiers. Tier I credentials generally include: those who possess a high school diploma which meets Department of Defense (DOD) standards, those who possess an adult education diploma, or those who have earned a semester of college-level credits.[4] Tier II credentials generally include: those who possess a General Education Development (GED) certificate, home-school diploma (classified as Tier I if AFQT score is 50 or greater), or those who are attending high school and are classified as "will grads."[5] Tier III credentials includes those who have not graduated from high school, are not attending high school, or are not enrolled in other "alternative education programs."[6]

AFQT Test Score	Test Score Category
99 – 93	I
92 – 65	II
64 – 50	IIIA
49 – 31	IIIB
30 – 21	IVA
20 – 16	IVB
15 – 10	IVC
9 – 1	V

Source: Commander, Navy Recruiting Command (CNRC), *Navy Recruiting Manual-Enlisted COMNAVCRUITCOMINST 1130.8H Volume II*, (Millington, TN: CNRC, 2005), 2-6-1.

Figure 1. AFQT Percentile Scores and Category

To be qualified for enlistment in the DEP, persons must meet the age requirement shown in Figure 2.

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[3] Commander, Navy Recruiting Command (CNRC), *Navy Recruiting Manual-Enlisted COMNAVCRUITCOMINST 1130.8H Volume II,* (Millington, TN: CNRC, 2005), 2-6-4.

[4] Ibid., 2-4-1.

[5] Ibid., 2-4-6.

[6] Ibid., 2-4-9.

AGE STANDARDS		
COMPONENT	**MINIMUM AGE**	**MAXIMUM AGE**
Active Component (non-prior service)	18 Years (17 with parental consent)	34 Years (must report to recruit training prior to 35th birthday)
Active Component (prior service)	No minimum age	Must be able to complete 20 years of active duty service prior to age 60.
Reserve Component (non-prior service)	18 Years	39 Years Must be gained and/or report to recruit training prior to 40th birthday.
Reserve Component (prior service)	No minimum age	Must be able to complete 20 years of qualifying service prior to age 60.

Source: Commander, Navy Recruiting Command (CNRC), *Navy Recruiting Manual-Enlisted COMNAVCRUITCOMINST 1130.8H Volume II*, (Millington, TN: CNRC, 2005), 2-1-1.

Figure 2.   Delayed Entry Program Age Requirements

The Navy has used different models to cross-reference AFQT score, education credential, and age to determine eligibility for DEP enrollment. Figure 3 shows the High Performance Predictor Profile model that was used to evaluate Tier II and Tier III applicants. This model evaluates an applicant's AFQT category, age, years of education, and participation in a youth program, such as Junior Reserve Officer Training Corps, to determine DEP program eligibility. The above variables are cross-referenced to generate a qualification code. Tier I applicants are not subject to this screening.

Secondary Education Credential	Age	9 Years or Less AFQT TSC			10 Years AFQT TSC			11 Years AFQT TSC			12 Years or More AFQT TSC		
		IIIA	II	I	IIIA	II	I	IIIA	II	I	IIIA	II	I
G.E.D. Diploma	18	K	K	W	W	W	Q	W	Q	Q	Q	Q	Q
	19+	W	W	Q	W	Q	Q	Q	Q	Q	Q	Q	Q
No Credential	18	K	K	W	K	W	Q	W	W	Q	Q	Q	Q
	19+	K	W	Q	W	Q	Q	Q	Q	Q	Q	Q	Q
H.S. Certificate of Attendance or Completion	18										Q	Q	Q
	19+										Q	Q	Q
Occupational Certificate of Attendance or Completion	18							Q	Q	Q	Q	Q	Q
	19+							Q	Q	Q	Q	Q	Q
Correspondence School, Distance Learning or Independent Study Diploma or Certificate	18	K	K	W	W	W	Q				Q	Q	Q
	19+	W	W	Q	W	Q	Q	Q	Q	Q	Q	Q	Q

* Source: COMNAVCRUITCOMINST 1130.8F Exhibit 2-12. High Performance Profile Predictor (HP3) selection table. Effective date 9/28/00.

Key:

Q = Qualified for Enlistment as an HP3

W = Qualified with Documentation of Youth Program Participation

      or

    Qualified with Enlistment Eligibility Determination Interview (by CO, XO, or EPO)

K = Qualified with CO, NRD Waiver

Source: Peggy A. Golfin and Lynda G. Houck, *Effectiveness of the HP3 Screen for Non-High-School-Diploma Graduates: Was FY01 a Better Year?* (Alexandria, VA: The CNA Corporation, 2002), 13.

Figure 3.　　　HP3 Screening Matrix

General criteria for all applicants are shown in Figure 4. In this model, AFQT category and education credential are cross-referenced to determine an applicant's eligibility for DEP enlistment. This model does not account for an applicant's age or participation in a youth program. The criteria presented in Figure 4 were taken from the FY2008 CNRC Operation/Production plan and require that the following recruiting goals be set: 75 percent of all recruits must be from category I through category IIIA and 95 percent of recruits must possess Tier I education credentials. Under this model, Tier II and Tier III applicants must have an AFQT score of 50 or better and meet HP3 criteria.

		Tier I	Tier II	Tier III
99 ... 93	Category I			
92 AFQT 65	Category II			
64 ... 50	Category IIIA			
49 ... 35 ... 31	Category IIIB			

Legend:

70 percent Category I through Category IIIA goal

Eligible for enlistment, 95 percent HSDG rate goal

Eligible for enlistment but must meet HP3 criteria

Not eligible for enlistment
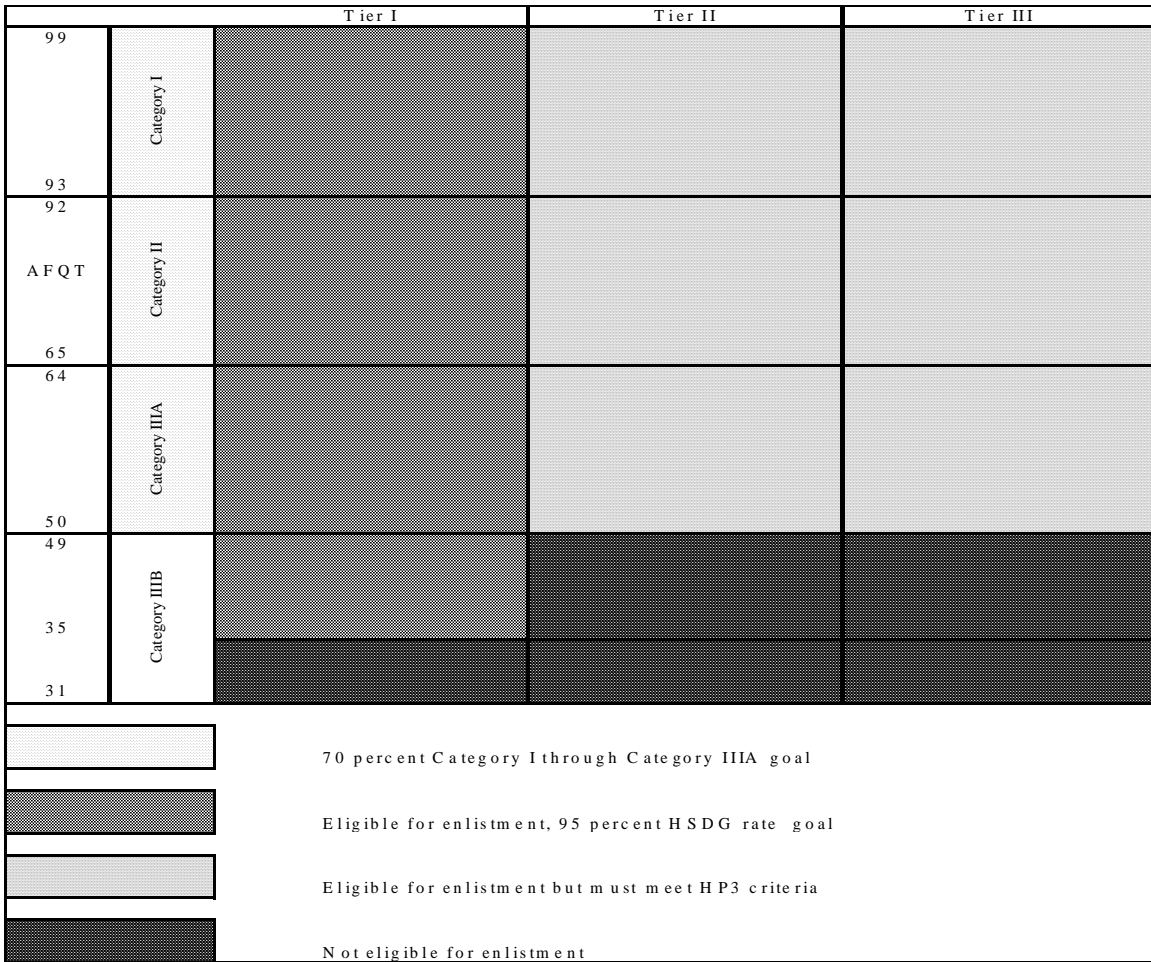
Source: Derived from Commander, Navy Recruiting Command (CNRC), FY2008 Operation/Production Plan, (Millington, TN: CNRC, 2008).

Figure 4.   Recruit Eligibility Matrix, FY2008

B.   PURPOSE AND BENEFITS OF THE STUDY

Much research has been done in the area of attrition in the military. The purpose of the present study is to analyze and determine the effect of AFQT score (or category), age, and other variables on DEP attrition. Attrition within the DEP is very costly to the Navy with respect to recruiting, advertising, and various intangibles, such as recruiter's time and administrative processing. In the FY2008 Operations/Production Plan, CNRC listed reduction of attrition from the DEP as a main goal:

Reduce in-month losses to 10 percent and overall DEP attrition to 18 percent. DEP attrition, and specifically in-month losses, are expensive with respect to resources, recruiter time, and lost "A" school seats. In-month losses jeopardize accession goal attainment and result in the need for direct shippers or rollups.[7]

By better understanding the different factors that contribute to DEP attrition, policies may be developed to reduce this attrition and the costs associated with it. Additionally, the findings of this study may assist in refining the current recruit screening models and achieving the lower attrition rates established by CNRC.

C. ORGANIZATION OF THE THESIS

The thesis is organized into six chapters. Chapter I presents an overview of the research area, including general DEP policy and recruit screening methods. Chapter II summarizes past and current research regarding military aptitude testing, screening based upon age, and DEP attrition. Chapter III analyzes male DEP attrition trends and uses a Maximum Likelihood Estimation (MLE) probit model to estimate the effects of AFQT, age, and other variables on attrition. Chapter IV is similar to Chapter III, but focuses on female DEP attrition. Chapter V estimates the effects of binary variables only on DEP attrition, using a linear probability model. Chapter VI presents the summary, conclusions, and recommendations.

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[7] Commander, Navy Recruiting Command (CNRC), *FY2008 Operation/Production Plan,* (Millington, TN: CNRC, 2008).

II.   BACKGROUND

A.   MILITARY TESTING

The military has used aptitude testing to determine recruit enlistment eligibility and ability for many years. As early as 1917, the Army was using aptitude testing to determine the ability of new recruits and as a tool to determine assignments for which a recruit was best suited.[8] These early tests used to screen draftees were known as the Army Alpha and Army Beta tests. The Alpha test was a verbal test used to aid the Army in "selection and placement" of a recruit while the Beta test was a non-verbal test used by the Army to determine if the recruit was "illiterate, unschooled, or non-English speaking."[9] During the WWII era the Army developed several other aptitude tests that were administered to non-high school diploma graduates, such as the Mental Qualification Test ("Q"), Visual Classification Test ("VC") used for persons unable to take the "Q" Test because of English illiteracy, and Individual Battery Test ("IB") used for those who failed the "VC" Test.[10] These early tests administered by the Army were generally intended to screen and select potential recruits who were more likely to adapt to military service or to determine if an individual's educational ability was at least equivalent to that of a fourth grader.[11] The military has also been concerned about accessing under-qualified recruits. As one writer points out, "during WWII and the Korean Conflict, for instance, there were relatively high rejection rates for military entry and widespread reports of in-service performance deficiencies," which increased the amount of research aimed at determining the effect on "selection and classification of lower aptitude individuals" for military service.[12]

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[8] Mark J. Eitelberg, *Manpower for Military Occupations* (Alexandria, VA: Human Resources Research Organization, 1988), 20.

[9] Ibid.

[10] Ibid., 21-22.

[11] Mark J. Eitelberg et al., *Screening for Service: Aptitude and Education Criteria for Military Entry* (Alexandria, VA: Human Resources Research Organization, 1984), 14-15.

[12] Peter F. Ramsberger et al., *Augmented Selection Criteria for Enlisted Personnel* (Alexandria, VA: Human Resources Research Organization, 1999), 4.

The Army General Classification Test (AGCT) was also developed during the WWII era and was designed to test the "general ability" of potential recruits. This test replaced the older Alpha test and ranked recruits in order of ability based upon their test score. Those who scored above a 130 were considered "rapid learners," while those who scored below a 69 were considered "the slowest learners."[13] During the WWI and WWII eras, the military services administered their own aptitude tests to classify applicants. This remained the standard until 1950 when the armed services developed the AFQT, which "was specifically designed to be used as a screening device."[14] Although the AFQT was useful to the military services as a screening tool, it was not as helpful in the assignment process.

As Maier writes, "in 1966, the Office of the Assistant Secretary of Defense for Force Management and Personnel (OASD-FM&P) directed the Services to develop a single test battery that could be used for vocational counseling."[15] The Armed Services Vocational Aptitude Battery (ASVAB) was eventually selected, and in January 1976, "a revised form of the ASVAB was installed as the DoD-wide aptitude test of enlistment eligibility."[16] Different test versions and normalizing methods have been used since 1976; however, the AFQT percentile score, calculated from the ASVAB subtest scores presented in Table 1, remain a primary means for the armed services to determine program eligibility for new recruits. As shown in Table 1, the subset categories vary from more cognitive, such as general science, word knowledge, and arithmetic reasoning, to more practical categories such as auto & shop information and mechanical comprehension. The time required to test each category also varies, but generally the paper and pencil version of the test will take an individual three hours to complete,

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[13] Mark J. Eitelberg et al., *Screening for Service: Aptitude and Education Criteria For Military Entry* (Alexandria, VA: Human Resources Research Organization, 1984), 15.

[14] Ibid., 16.

[15] Milton H. Maier, *Military Aptitude Testing: The Past Fifty Years* (Monterey, CA: Defense Manpower Data Center, 1993) iv.

[16] Mark J. Eitelberg et al., *Screening for Service: Aptitude and Education Criteria For Military Entry* (Alexandria, VA: Human Resources Research Organization, 1984), 17.

including all administrative and preparation time. The Computer Adaptive Test (CAT) version will generally take less time to complete, given that it is designed to be more efficient and to adapt levels of difficulty based on the test-taker's ability.

Table 1.   ASVAB Subtest Categories

TEST	CONSTRUCT
Verbal	
Word Knowledge (WK)	*Ability to select the correct meaning of words presented in context and to identify best synonym for a given word.*
Paragraph Comprehension (PC)	*Ability to obtain information from written passages.*
(i) Mathematics	
Arithmetic Reasoning (AR)	*Ability to solve arithmetic word problems.*
Mathematics Knowledge (MK)	*Knowledge of high school mathematics principles.*
(ii) Science/Technical	
General Science (GS)	*Knowledge of physical and biological sciences.*
Electronics Information (EI)	*Knowledge of electricity and electronics.*
Auto Information (AI)	*Knowledge of automobile terminology and technologies.*
Shop Information (SI)	*Knowledge of tools and shop terminology and practices.*
Mechanical Comprehension (MC)	*Knowledge of mechanical and physical principles.*
Assembling Objects (AO)	*Ability to figure out how an object will look when its parts are put together.*

Source: W. S. Sellman, *Predicting Readiness for Military Service: How Enlistment Standards Are Established* (National Assessment Governing Board, 2004).

The derivation of AFQT percentile scores from ASVAB subtest scores can lead to different results depending on factors such as the number of times an applicant has taken the test or the type of normalizing method used to generate the AFQT scores. For example, enlisted members are given the opportunity to retake a test similar to the ASVAB, called the Armed Forces Classification Test, to improve scores and become eligible for programs in which they would not otherwise be eligible, given their current ASVAB scores. With regard to number of times an individual has taken the test, Doherty states:

> The ASVAB is a multiple-choice aptitude exam, but experience has shown that it is not truly an aptitude exam because there is a tendency for scores to increase with successive tests. Dr. Lisa Mills of the Navy's Selection and Classification office showed there were statistically significant increases between initial scores on the ASVAB and scores on the AFCT…The increase has also been identified for armed forces applicants who are administered the ASVAB more than once at the Military Entrance Processing Stations. (Mills, 2004).[17]

The number of times an individual takes the ASVAB is only one factor that influences the outcome of the test. Other factors such as the method used in determining the AFQT score also can influence the outcome of the test. Raw ASVAB scores are used to determine normalized ASVAB scores in order to compare military recruits to their civilian counterparts. Sellman and Segall describe the process as follows:

> ASVAB is normed against a nationally representative sample of young people ages 18 to 23 years old that tested in 1997 as part of the Bureau of Labor Statistics' National Longitudinal Survey of Youth (Segall, 2004). Such norms allow the comparison of applicant and recruit aptitude levels with those of the contemporary civilian youth population from which they come. AFQT scores are expressed on a percentile scale and grouped into five categories for reporting purposes.[18]

It is important that this norming process is calculated correctly in order to ensure ASVAB and AFQT scores accurately reflect the mental ability of the recruits. During 1976 the

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[17] Brian D. Doherty, *An Examination of the Armed Forces Classification Test and its use as a Force Shaping Tool* (Monterey, CA: Naval Postgraduate School, 2007), 2.

[18] Source: W. S. Sellman, Predicting Readiness for Military Service: How Enlistment Standards Are Established (National Assessment Governing Board, 2004), 3.

methods used to calculate the AFQT percentile had "undetected flaws" which resulted in inflated "scores in the lower ability range, with many recruits who were thought to be of average aptitude actually belonging in the below-average, or Category IV range."[19] It was not until October 1980 that this "misnorming" was detected and by then "over 300,000 "Potentially Ineligibles" or PIs (Greenberg 1980) had entered the military."[20] Eitelberg points out that "four years and nine months of recruiting with a misnormed enlistment test promised to have a lasting influence on the military and its manpower policies."[21]

B.   DELAYED ENTRY PROGRAM ATTRITION RESEARCH

Much research has been conducted in the area of attrition in general, with less research focusing specifically on DEP attrition. As Lockman and Warner observe, "the history of predicting premature attrition, that is, losses before the completion of the first-term of military service, dates back to at least the early 1960s."[22] According to the Army, "the largest volume of research has centered on demographic and psychosocial factors probably because of the large amount of personal information contained in readily available data bases."[23]   This section references some past DEP attrition studies as well as attrition studies in general. One of the problems that arises in determining the factors that lead to DEP attrition is that "we have very little knowledge of the characteristics of DEP attrites" because of a lack of information gathered from attrites when they leave the DEP.[24] For example, as Lane observes, "attrition from the DEP has ranged from a low of

[19] Peter F. Ramsberger et al., *Augmented Selection Criteria for Enlisted Personnel* (Alexandria, VA: Human Resources Research Organization, 1999), 5.

[20] Ibid.

[21] Mark J. Eitelberg, *Manpower for Military Occupations* (Alexandria, VA: Human Resources Research Organization, 1988), 74.

[22] Robert F. Lockman and John T. Warner, *Predicting Attrition: A Test of Alternative Approaches* (Arlington, VA: Center for Naval Analysis, 1977).

[23] Joseph J. Knapik et al., *A Review of the Literature on Attrition from the Military Services: Risk Factors for Attrition and Strategies to Reduce Attrition* (Fort Knox, KY: U.S. Army Center for Health Promotion and Preventive Medicine, 2004), ES-1.

[24] Marian E. Lane, *Predictors of Attrition From the U.S. Navy Delayed Entry Program* (Research Triangle Park, NC: RTI International, 2006), 3.

16% in 1999 to a high of 25% in 2004."[25] Further, Neuhalfen found that DEP attrition rates "increased from 18.5 percent (1998) to 23.6 percent (2005) and was closely correlated with average yearly time in DEP."[26] These findings by Lane and Neuhalfen support the findings this study; however, as Siebold points out, "the amounts and rates of attrition are aggregate variables. Causal analysis requires these aggregate variables to be investigated within smaller, more meaningful personnel groupings."[27]

Because of the lack of reliable information gathered from DEP members relating to the reasons why a member decided to leave, the majority of research on DEP attrition has focused on measurable data such as education level, AFQT, age, or survey information. The variables Lane identified in her study as being good predictors of DEP attrition "listed in order of importance, were average recruiting scale score, reported length of time in DEP, frequency of DEP meetings, satisfaction with amount of time spent in classification, AFQT score, extent of explanation of importance of ASVAB scores in qualifying for U.S. Navy jobs, and age at DEP entry."[28]

Past studies have reached different conclusions regarding the effect of AFQT scores on the likelihood of DEP attrition. For example, Baykiz found in his study that "AFQT scores have a negative effect on DEP attrition probability for high school graduates and seniors: as the AFQT score increases, attrition probability decreases."[29] Lane, however, revealed different findings:

> The finding that DEP attrites had higher AFQT scores is especially important in discriminating among these groups, because this finding contradicts the notion that DEP attrition is "wanted" attrition of lower quality recruits who would eventually fail anyway. Research has

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[25] Marian E. Lane, *Predictors of Attrition From the U.S. Navy Delayed Entry Program* (Research Triangle Park, NC: RTI International, 2006), 3

[26] Jon K. Neuhalfen, *Analysis of Recruit Attrition from the Navy's Delayed Entry Program and Recruit Training Command* (Monterey, CA: Naval Postgraduate School, 2007), 197.

[27] Guy L. Siebold, *Attrition: Casualty, Explanation, and Level of Analysis* (Alexandria, VA: Army Research Inst for the Behavioral and Social Sciences, 1981).

[28] Marian E. Lane, *Predictors of Attrition From the U.S. Navy Delayed Entry Program* (Research Triangle Park, NC: RTI International, 2006), 6.

[29] Murat S. Baykiz, *An Analysis of Marine Corps Delayed Entry Program (DEP) Attrition by High School Graduates and High School Seniors* (Monterey, CA: Naval Postgraduate School, 2007), 82.

consistently shown cognitive ability as the best predictor of job performance (Hunter & Hunter, 1984; Schmidt & Hunter, 1998). The military uses the ASVAB, of which the Armed Forces Qualification Test (AFQT) is a part, as its measure of cognitive ability; research shows that cognitive ability, as measured by the ASVAB, is useful in predicting job performance in the military (Ree, Earles, & Teachout, 1994). Therefore, the finding that DEP attrites had higher cognitive ability scores than individuals who shipped to training translates into the fact that the U.S. Navy is losing higher, not lower, quality candidates to attrition before they enter training.[30]

Wegner and Hodari found that persons who enlisted under the National Guard Youth ChalleNGe program, a program designed to help "at risk" youth earn a GED, who scored at least 50 on the AFQT had "somewhat lower attrition rates than all ChalleNGe recruits."[31] Generally AFQT is regarded as being a good predictor of "trainability" and a weaker predictor of attrition. Wegner and Hodari observe that "the Armed Forces rely heavily on applicants' scores on the ASVAB; considerable evidence links scores on these tests to trainability (although the relationship between ASVAB/AFQT scores and attrition is weaker)."[32]

Factors other than AFQT score have been analyzed to determine their effect on attrition. It is generally agreed that education credential is the best predictor of attrition. An Army study indicated that "individuals without a high school diploma are about twice as likely to attrite in their first term compared to those who have a high school diploma."[33] Early attrition analysis conducted by the military identified, in order of priority, "level of education, mental ability, and age" as the best predictors of attrition.[34] The Army has defined risk factors for DEP attrition into two categories, intrinsic and

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[30] Marian E. Lane, *Predictors of Attrition From the U.S. Navy Delayed Entry Program* (Research Triangle Park, NC: RTI International, 2006), 8.

[31] Jennie W. Wegner and April K. Hodari, *Final Analysis of Evaluation of Homeschool and ChalleNGe Program Recruits* (Alexandria, VA: The CNA Corporation, 2004), 48.

[32] Ibid., 16.

[33] Joseph J. Knapik et al., *A Review of the Literature on Attrition from the Military Services: Risk Factors for Attrition and Strategies to Reduce Attrition* (Fort Knox, KY: U.S. Army Center for Health Promotion and Preventive Medicine, 2004), ES-1.

[34] Robert F. Lockman and John T. Warner, *Predicting Attrition: A Test of Alternative Approaches* (Arlington, VA: Center for Naval Analysis, 1977).

extrinsic. Intrinsic risk factors include "female gender, older age, white race, single marital status or no dependents, lower AFQT score, high school senior status, and lower educational level;" while extrinsic risk factors "include longer time in the DEP, higher regional or national employment rates, greater monetary earning potential in the civilian environment than in the military environment, non-participation in a service college fund, contract renegotiation, and lack of participation in a military youth program like junior ROTC."[35]

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[35] Joseph J. Knapik et al., *A Review of the Literature on Attrition from the Military Services: Risk Factors for Attrition and Strategies to Reduce Attrition* (Fort Knox, KY: U.S. Army Center for Health Promotion and Preventive Medicine, 2004), ES-1.

III. ANALYSIS OF DELAYED ENTRY PROGRAM ATTRITION BY MEN

A. DATA

The Defense Manpower Data Center (DMDC) provided the data used in this analysis. The data file was constructed from Navy Military Entrance Processing Command (MEPCOM), Navy enlisted loss, and Navy enlisted-active duty files.[36] The data are comprised of three sample groups: those who entered DEP but did not enter active duty; those who were in DEP for at least one day and entered active-duty; and those who were discharged from the Navy while on active duty.[37] Geographic and population data were merged with the data provided by DMDC, using an individual's home-of-record zip code, to gather additional demographic information on the sample.[38]

The data collected span fiscal years 1999 through 2008 and include men only. Individuals whose attrition date or active-duty accession date fell within FY1999 were dropped to maintain continuity. This was done because not all individuals who attrite in a given fiscal year enter DEP in that same fiscal year. The data do not include those who scored below a 31 AFQT score, served on active duty prior to entering DEP, or those whose attrition from DEP was a result of entering a military service, other than the Navy, from DEP. Generally, observations with missing data elements, such as height, weight, and race were left in the data set provided they did not make up a significant portion of the sample. Observations with missing AFQT scores or education codes were dropped. The data used in this analysis include 380,073 observations; however, it should be noted that, due to the data being extracted in FY2009, FY2008 data may be incomplete as a result of possible delays between DMDC updates and data submissions.

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[36] Thank you to Richard Moreno, DMDC, who extracted the data and provided a data dictionary.

[37] Some active duty observations were missing a DEP entry date. Those observations were treated as having at least 1 day in DEP where the missing DEP entry date was replaced with the accession date. Some active duty observations were missing a DEP education code. Observations missing DEP education codes were replaced with the accession education code.

[38] Geographic and population data obtained from a commercial zip code data base.

B. METHODOLOGY

An analysis of attrition, age, AFQT, and educational trends for male DEP members was conducted using pooled cross-sectional data from FY1999 through FY2008, with FY1999 including only those individuals who accessed into DEP during that fiscal year. Overall attrition trends for both male and female members are presented in this section for informational purposes; however, the primary focus in this section is on men only. Members were grouped according to their educational Tier (I, II, or III). Each group was then analyzed separately with respect to the effects of AFQT and age on probability of attrition, controlling for other demographic factors.

C. VARIABLES

The variables analyzed in this study are presented in Table 2. The primary variables of interest are AFQT percentile and age of individual while a member of the DEP. The variable afqt_age is an interaction term between AFQT and age which is included to capture the effect of AFQT on the probability of attrition, given a specified age of an individual. The theory is that the effect of AFQT on attrition depends on the experience, or age, of the individual. By including the interaction term in the model, coefficients cannot be directly interpreted and must have unique values specified, taking the form: $y = \alpha_0 + \delta_1 x_1 + \delta_2 x_2 + \beta_3 (x_1 - \mu_1)(x_2 - \mu_2) + u$.[39] The same principle applies to the variable tid2, where the time spent in DEP is squared. Education variables in this analysis are defined by DMDC and categorized by the author into Navy Tier classifications. Depending on AFQT, some Tier II education credentials may be classified as Tier I credentials. For the purpose of this study, education credentials were categorized based upon the credential itself and not the AFQT score. Race variables in this analysis are also included as defined by DMDC, with the exception of American Indian/Alaskan and Unknown; these variables were classified as category "other." Variable omxwt, youth, metro, mar, deps, hor_mep, and rtc_hor were included to control for observable and other non-observable factors in the sample. Fiscal year dummies,

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[39] Jeffrey M. Wooldridge, *Introductory Econometrics 3rd ed.*, (Mason: Thomson South-Western, 2006), 204-6.

fy2000 through fy2008, were included to control for structural changes over the course of the study. Variables mep1 through mep65 represent the Military Entrance Processing Station (MEPS) where the individual was processed when entering DEP and were included in the model to control for unobserved factors relating to location.

Table 2.   Summary of Variables

Variable	Name	Description
DEP Attrite	d_att	Individual who entered Navy DEP but never accessed to active duty Navy
AFQT Percentile	afqt	Latest AFQT percentile score on record
Age	age	Age of individual while in DEP
Interaction between age and AFQT	afqt_age	(afqt - afqt*)(age - age*); where afqt* and age* are specified values of afqt and age
Time in DEP	tid	Time an individual spent in DEP before attrition or accession
Time in DEP Squared	tid2	(tid - tid*)(tid - tid*); where tid* is average time spent in DEP of sample evaluated
High School Diploma	I_hsd	Individual who has earned a traditional high school diploma meeting DOD requirements (Tier I)
Did Not Pass Exit Exam	I_hsnx	Individual who completed high school graduation requirements but did not pass the state mandated exit exam (Tier I)
High School Senior	I_hss	Individual who does not have a high school diploma but who was classified as a high school senior, completed junior year and 70% of graduation requirements (Tier I)
Credential Near Completion	I_cnc	Individual who does not have a high school diploma but who was classified as having a credential near completion (Tier I)
Adult Education	I_aed	Individual who received high school diploma through an adult education program (Tier I)
Semester of College	I_semcol	Individual who completed 1 semester of college (Tier I)
Associate Degree	I_asc_deg	Individual who has earned an associate degree (Tier I)
Baccalaureate Degree	I_ba	Individual who has earned a baccalaureate degree (Tier I)
Nursing Degree	I_pnd	Individual who earned a professional nursing degree (Tier I)
Graduate Education	I_grded	Individual who has earned a postsecondary degree (Tier I)
Test Based Equivalency Diploma	II_ged	Individual has earned a GED or Army challenge program GED (Tier II)
In High School	II_inhs	Individual was attending high school but did not meet Tier I criteria (Tier II)
Occupational Program Certificate	II_opc	Individual has earned an occupational program certificate (Tier II)
Correspondence School	II_csd	Individual has earned a correspondence school diploma (Tier II)
Certificate of Attendance	II_coa	Individual possess a high school certificate of attendance. This is similar to a GED but is based upon attendance rather that test scores (Tier II)
Home Study	II_hsd	Individual earned a home study diploma
No Credential	III_lths	Individual does not possess a Tier I or Tier II credential
Maximum Weight	omxwt	An individual's (weight upon entry to DEP) - (maximum allowable weight for the individual's height)
Youth Program	youth	Youth program such as JROTC, ROTC, Civil Air Patrol, or Sea Cadets
Metropolitan Area	metro	Individual's home of record ZIP code is considered a metropolitan statistical area (50,000 or more population), as defined by the U.S. Office of Management and Budget
Married	mar	Individual Married
Number of Dependents	deps	Number of dependents (children and spouse)
Asian	asian_pi	Individual is an Asian / Pacific Islander
Black	black	Individual is Black
Hispanic	hisp	Individual is Hispanic

Variable	Name	Description
White	white	Individual is White
Other	race_oth	Individual is not Asian, Black, Hispanic, or White
Distance from MEPS	hor_mep	The distance in miles from an individual's home of record to the MEPS where processed
Distance from RTC	rtc_hor	The distance in miles from an individual's home of record to Recruit Training Command
Fiscal Year	fy1999-fy2008	Fiscal year individual entered DEP
MEPS	mep1 - mep65	Individual's MEPS

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

D.   RESULTS

The following section summarizes the DEP attrition analysis for men with respect to AFQT, age, education, and other demographic factors.

1.   Attrition Trends

One issue to consider when analyzing attrition trends is the method in which the attrition rates are calculated. This study grouped individual DEP accession, DEP attrition, and active-duty accession dates by fiscal year. Attrition rates were calculated as a percentage of DEP accessions or as a percentage of active-duty accessions for the corresponding fiscal year in which attrition occurred. Since accession varies over fiscal years, and not all individuals attrite from DEP in the same fiscal year they entered, normalized attrition rates have also been calculated. The normalized rates were calculated using the average DEP accessions and average active-duty accessions for fiscal years, 2000 through 2003, and fiscal years, 2004 through 2008. Attrition rates that occurred between FY2000 and FY2003 were calculated using the FY2000 to FY2003 accession averages. Similar calculations were used for attrition that occurred between FY2004 and FY2008.

Table 3 shows total attrition, DEP accessions, and active-duty accessions for all education Tiers and gender. These data indicate that the number of personnel entering DEP between FY2000 and FY2008 fluctuated, with FY2000 through FY2003 having higher DEP accession numbers than in FY2004 through FY2008. This trend was the basis for choosing the fiscal years, mentioned above, used to normalize attrition rates.

Table 3.   Overall Navy DEP Attrition Rates, Men and Woman, FY2000 - FY2008

FY	Attrite	DEP	Access	% DEP	%DEP(N)	% Access	% Access(N)
2000	11,801	60,269	48,650	19.58	19.73	24.26	25.97
2001	11,908	63,847	49,639	18.65	19.91	23.99	26.21
2002	11,396	62,299	43,350	18.29	19.05	26.29	25.08
2003	11,765	52,824	40,127	22.27	19.67	29.32	25.89
2004	11,907	49,717	39,280	23.95	26.90	30.31	30.82
2005	11,349	45,125	37,545	25.15	25.64	30.23	29.37
2006	10,046	44,370	35,714	22.64	22.69	28.13	26.00
2007	10,105	50,669	39,565	19.94	22.83	25.54	26.15
2008	10,651	31,451	41,075	33.87	24.06	25.93	27.57
Total	100,928	460,571	374,945	21.91	N/A	26.92	N/A

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Trends in male attrition, DEP accessions, and active-duty accessions are presented in Table 4. Consistent with the overall trends presented in Table 3, male DEP accessions and active-duty accessions also fluctuated across fiscal years, with higher numbers in FY2000 through FY2003.

Table 4.   Navy DEP Attrition for Men, all Education Tiers, FY2000 - FY2008

FY	Attrite	DEP	Access	% DEP	%DEP(N)	% Access	% Access(N)
2000	8,644	48,430	39,627	17.85	17.87	21.81	23.18
2001	8,917	50,918	40,470	17.51	18.44	22.03	23.91
2002	8,473	49,150	35,828	17.24	17.52	23.65	22.72
2003	8,198	44,935	33,220	18.24	16.95	24.68	21.99
2004	9,026	40,390	32,736	22.35	25.60	27.57	28.51
2005	8,475	36,594	31,410	23.16	24.04	26.98	26.77
2006	7,343	35,002	28,957	20.98	20.83	25.36	23.19
2007	7,180	39,659	32,077	18.10	20.37	22.38	22.68
2008	7,296	24,632	33,133	29.62	20.69	22.02	23.04
Total	73,552	369,710	307,458	19.89	N/A	23.92	N/A

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Tables 3 and 4 are useful in summarizing the overall numbers of persons entering and leaving DEP, but do not illustrate graphically attrition over time. Figure 5 shows male attrition rates for all Education Tiers compared with overall attrition rates, including

that of women.   For all fiscal years, attrition rates for men have been lower than the overall attrition rates.   Between FY2000 and FY2002, Navy attrition rates for men generally remained constant at approximately 17 percent.   In FY2003 the rate of male attrition began to rise until it peaked in FY2005 at 23.16 percent.   From FY2006 through FY2007, attrition rates declined to 18.1 percent and then climbed to almost 30 percent in FY2008.   Overall attrition rates also followed the same trend.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Overall	19.58	18.65	18.29	22.27	23.95	25.15	22.64	19.94	33.87
Male	17.85	17.51	17.24	18.24	22.35	23.16	20.98	18.10	29.62
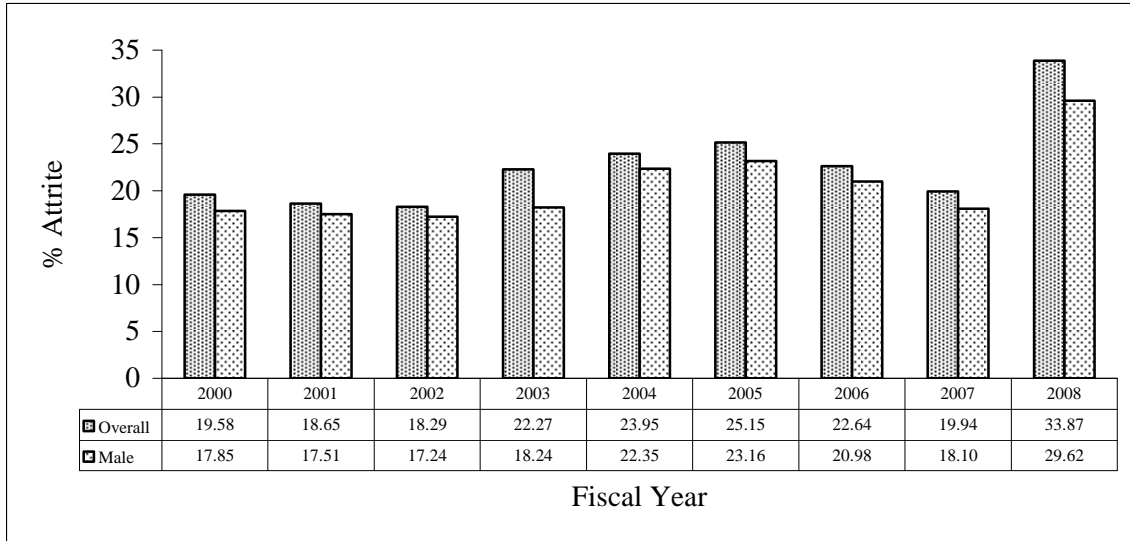
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 5.   Navy DEP Men and Overall Attrition Rates, all Education Tiers, FY2000 - FY2008

Illustrated in Figure 6 are the normalized attrition rates shown in Figure 5. Attrition rates between FY2000 and FY2003 remained generally constant at approximately 17 percent.   In FY2004 attrition rates peaked at 25.6 percent and then declined to 20.37 percent in FY2007.   The most noticeable difference between the raw attrition rates and the normalized attrition rates occurs in FY2008, where the raw attrition rate was 29.62 percent and the normalized attrition rate was 20.69 percent.   This difference could be caused by several reasons: FY2008 data was fairly new when the study was conducted and the data has not been fully updated; or the unusually high number of personnel joining DEP in FY2007 carried over into FY2008 causing higher attrition rates.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Overall	19.73	19.91	19.05	19.67	26.90	25.64	22.69	22.83	24.06
Male	17.87	18.44	17.52	16.95	25.60	24.04	20.83	20.37	20.69

Fiscal Year
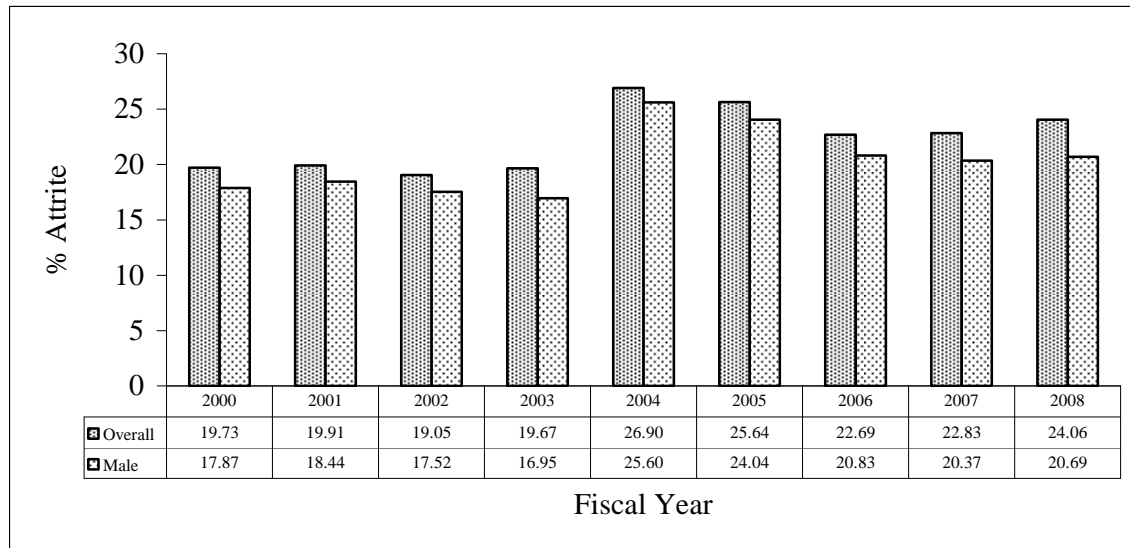
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 6. Men and Overall Navy DEP Attrition Rates, all Education Tiers, Normalized, FY2000 - FY2008

Table 5 summarizes attrition and accession among men for each Tier. The data show that the number of personnel who entered DEP with Tier I education credentials rose from 42,525 in FY2000 to 45,313 in FY2002, then gradually fell to 23,411 in FY2008, with a spike in FY2007 of 36,620. Tier II and Tier III DEP accessions followed a similar trend as Tier I accessions with a spike in FY2007.

Table 5. Navy DEP Attrition by Education Tier for Men, FY2000 - FY2008

	Tier I					Tier II					Tier III				
FY	Attrite	DEP	Access	% DEP	% DEP(N)	Attrite	DEP	Access	% DEP	% DEP(N)	Attrite	DEP	Access	% DEP	% DEP(N)
2000	7,651	42,525	34,742	17.99	17.56	656	3,915	3,310	16.76	20.11	337	1,990	1,575	16.93	22.06
2001	7,880	44,688	35,466	17.63	18.09	694	4,098	3,315	16.94	21.28	343	2,132	1,689	16.09	22.45
2002	7,623	45,313	32,360	16.82	17.50	559	2,708	2,388	20.64	17.14	291	1,129	1,080	25.78	19.05
2003	7,496	41,751	30,900	17.95	17.20	508	2,324	1,684	21.86	15.58	194	860	636	22.56	12.70
2004	8,436	38,468	30,993	21.93	25.38	435	1,509	1,348	28.83	26.54	155	413	395	37.53	40.64
2005	7,980	34,459	29,900	23.16	24.01	391	1,727	1,204	22.64	23.86	104	408	306	25.49	27.27
2006	6,957	33,218	27,462	20.94	20.93	307	1,457	1,205	21.07	18.73	79	327	290	24.16	20.71
2007	6,651	36,620	29,862	18.16	20.01	425	2,465	1,820	17.24	25.93	104	574	395	18.12	27.27
2008	6,805	23,411	31,188	29.07	20.48	407	1,036	1,611	39.29	24.84	84	185	334	45.41	22.02
Total	67,479	340,453	282,873	19.82	N/A	4,382	21,239	17,885	20.63	N/A	1,691	8,018	6,700	21.09	N/A

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 7 shows male attrition rates, broken down by Tier, as a percent of total number personnel entering DEP within their Tier group. Rates were not calculated as a percent of total DEP accessions for a given fiscal year because, in all cases, the number of Tier II and Tier III applicants made up a smaller percentage of total applicants than did the Tier I applicants. The data show that in FY2000 and FY2001, attrition rates for Tier II and Tier III members were lower than for Tier I members. From FY2003 through FY2004, attrition rates for Tier II and Tier III members were higher than those for Tier I members and, from FY2005 through FY2007, attrition rates among all the Tiers declined until FY2008, when it spiked.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
⊠ Overall	19.58	18.65	18.29	22.27	23.95	25.15	22.64	19.94	33.87
☐ Tier I	17.99	17.63	16.82	17.95	21.93	23.16	20.94	18.16	29.07
◼ Tier II	16.76	16.94	20.64	21.86	28.83	22.64	21.07	17.24	39.29
◩ Tier III	16.93	16.09	25.78	22.56	37.53	25.49	24.16	18.12	45.41

Fiscal Year
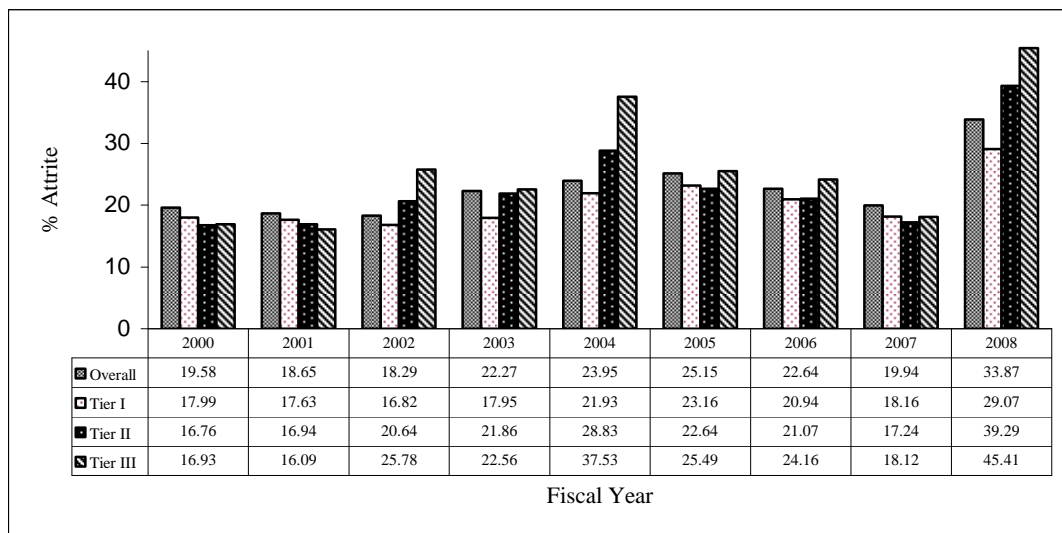
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 7.   Men and Overall Navy DEP Attrition Rates by Education Tier, FY2000 - FY2008

Normalized attrition rates broken down by Tier, as a percentage of Tier group, are shown in Figure 8. The data show the same spike in attrition rates as seen FY2004, using raw data, with a decline during FY2005 and FY2006. The normalized data show that attrition rates in FY2008 are much lower than indicated by the raw numbers in Figure 7.

22

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Overall	19.73	19.91	19.05	19.67	26.90	25.64	22.69	22.83	24.06
Tier I	17.56	18.09	17.50	17.20	25.38	24.01	20.93	20.01	20.48
Tier II	20.11	21.28	17.14	15.58	26.54	23.86	18.73	25.93	24.84
Tier III	22.06	22.45	19.05	12.70	40.64	27.27	20.71	27.27	22.02

Fiscal Year
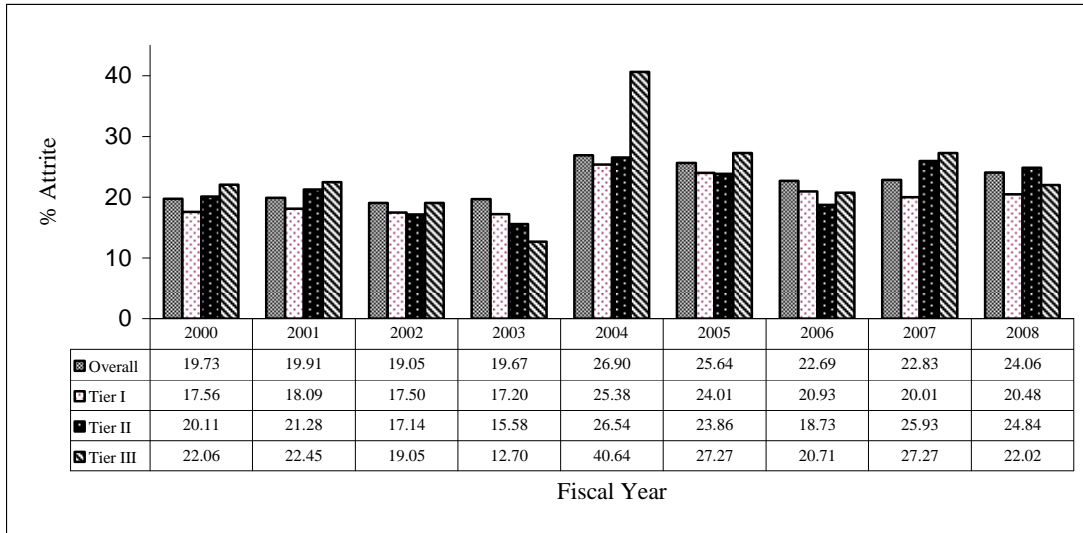
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 8. Men and Overall Attrition Rates, Normalized, by Education Tier, FY2000 - FY2008

2. Age Trends

The average age of men entering DEP is shown in Figure 9. The data show a rise in the average age from 19.88 in FY2000 to 20.19 in FY2002. The average age then dropped to 19.95 in FY2004, and then began a steady increase to 20.77 in FY2008. As seen here, the difference between the low and high average age is 0.89 years, and the trend in the data is clearly upward from FY2004 through FY2008.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Avg. Age	19.88	19.98	20.19	20.13	19.95	19.98	20.13	20.43	20.77

Fiscal Year
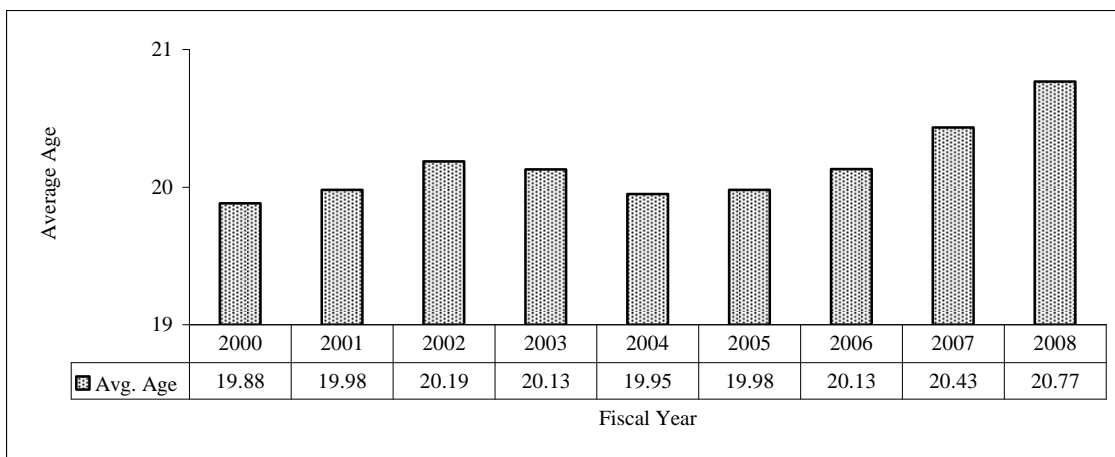
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 9. Average Age of Men in Navy DEP, all Education Tiers, FY2000 - FY2008

Figure 10 displays the overall age distribution of men entering the DEP. The data show that the majority of DEP accessions come from those who are between 18 and 20 years of age. After age 18, the average age appears to drop off exponentially until age 35. In Figure 9, it was shown that the average age for all fiscal years was between 19.88 and 20.77; however, Figure 10 shows that the model age for men entering DEP is 18 years.
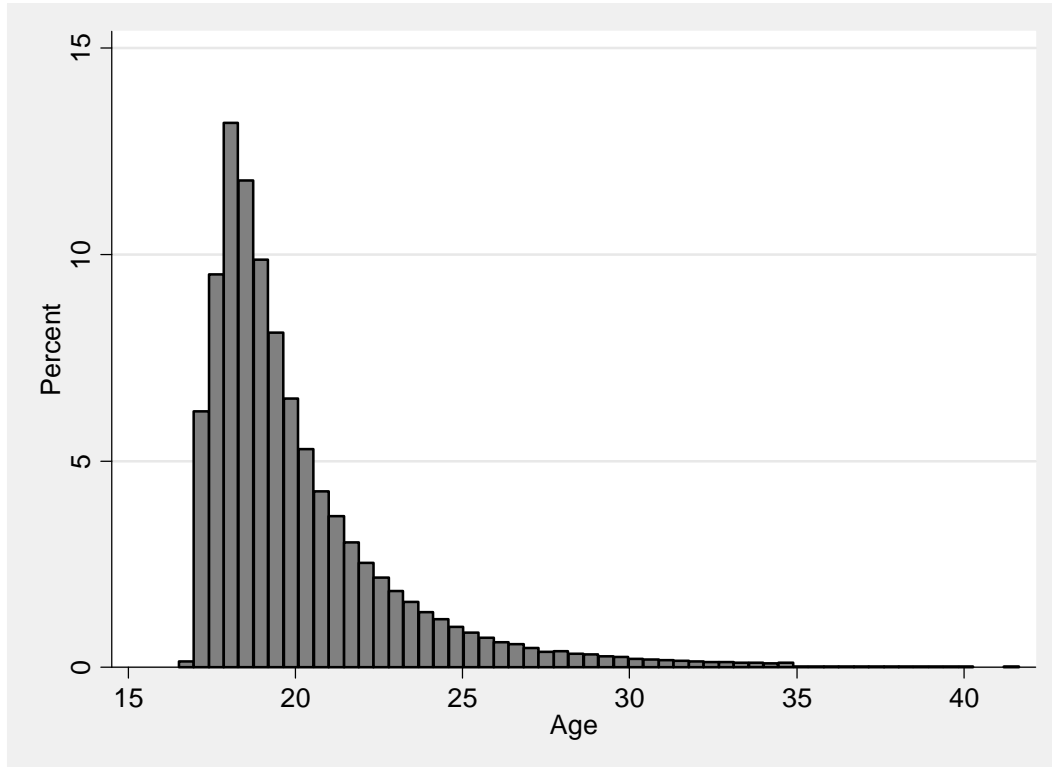
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 10.   Age Distribution of Men Entering the Navy DEP, FY2000 - FY2008

3.   AFQT Score Trends

The average AFQT for men, all Tiers, entering the Navy DEP has risen since FY2000 as shown in Figure 11. In FY2000 and FY2001, the average AFQT score remained constant at approximately 58. The data show a steady rise in average AFQT score between FY2002 and FY2006, where it reached a plateau of approximately 64

through FY2008. The difference between the high and the low score is 5.81, which is significant considering it is 8.5 percent of the range of AFQT scores analyzed in this study.

Fiscal Year	2000	2001	2002	2003	2004	2005	2006	2007	2008
Avg. AFQT	58.39	58.25	59.06	61.37	62.16	63.32	64.06	63.77	63.64
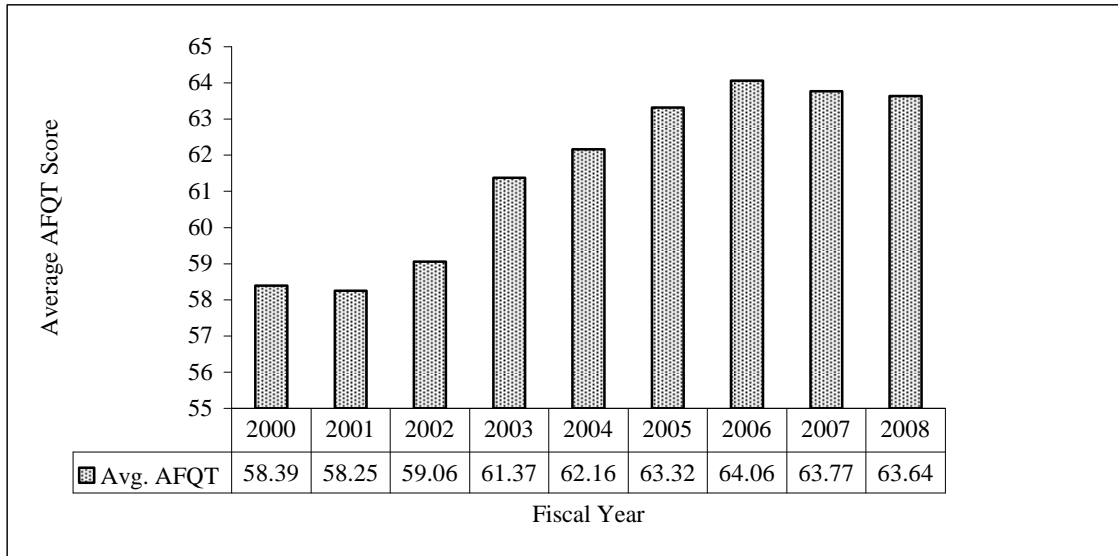
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 11.   Average AFQT Score for Men Entering the Navy DEP,
FY2000 – FY2008

The average AFQT score for men in age groups 18 through 30 is shown in Figure 12. The data indicate that the average score for 18-19 year olds is approximately 59. The average AFQT score increased from 60.89 at age 20 to 65.86 at age 25. There was a slight decrease in AFQT scores from age 24 to age 30, but the scores generally centered on approximately 65. The data shown in Figure 9 indicate that the average age of men entering DEP have risen, while the data shown in Figure 11 indicate that average AFQT scores have also risen. The data shown in Figure 12 validates these results because, if the average AFQT score increased with age, and the average age rose, then the average AFQT score would also increase.
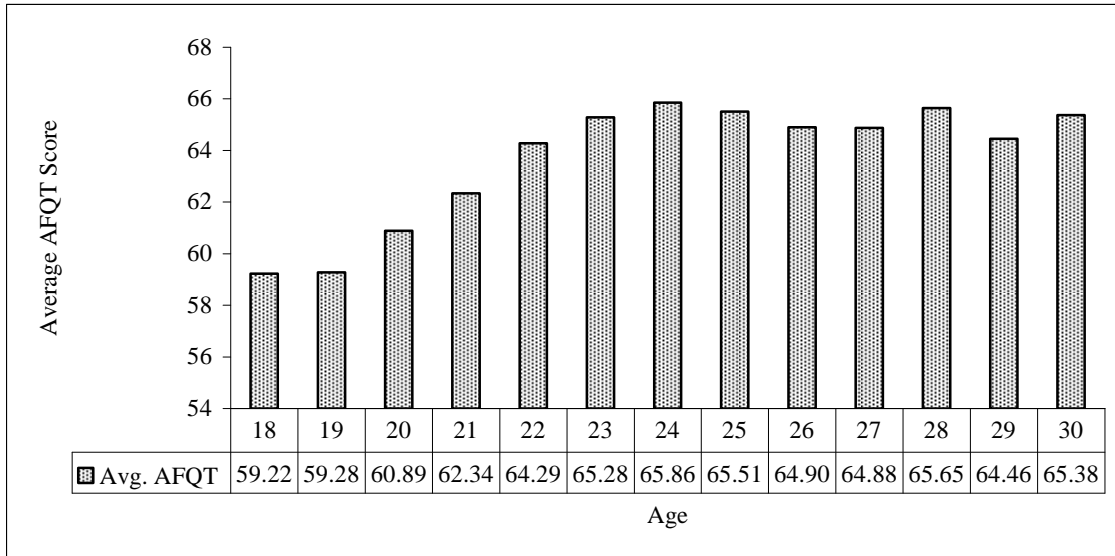
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 12.   Average AFQT Score by Age for Men Entering the Navy DEP, Total
FY2000 – FY2008

Analysis of the average AFQT scores by fiscal year is useful in revealing general trends, but does not reveal specific information about the diversity of the scores making up the average. Figure 13 shows the distribution of AFQT scores from FY2000 through FY2008 for male DEP members. For FY2000 through FY2004, the data show that AFQT score frequency gradually declines from the mean as the scores approach 99. A different trend is observed for FY2005 through FY2008, where the data show an increase in frequency for scores in the 80 to 99 range, with FY2006 showing a dramatic increase.
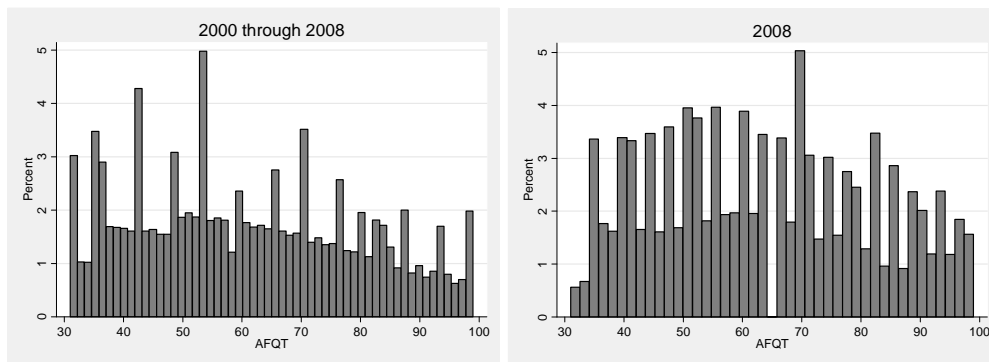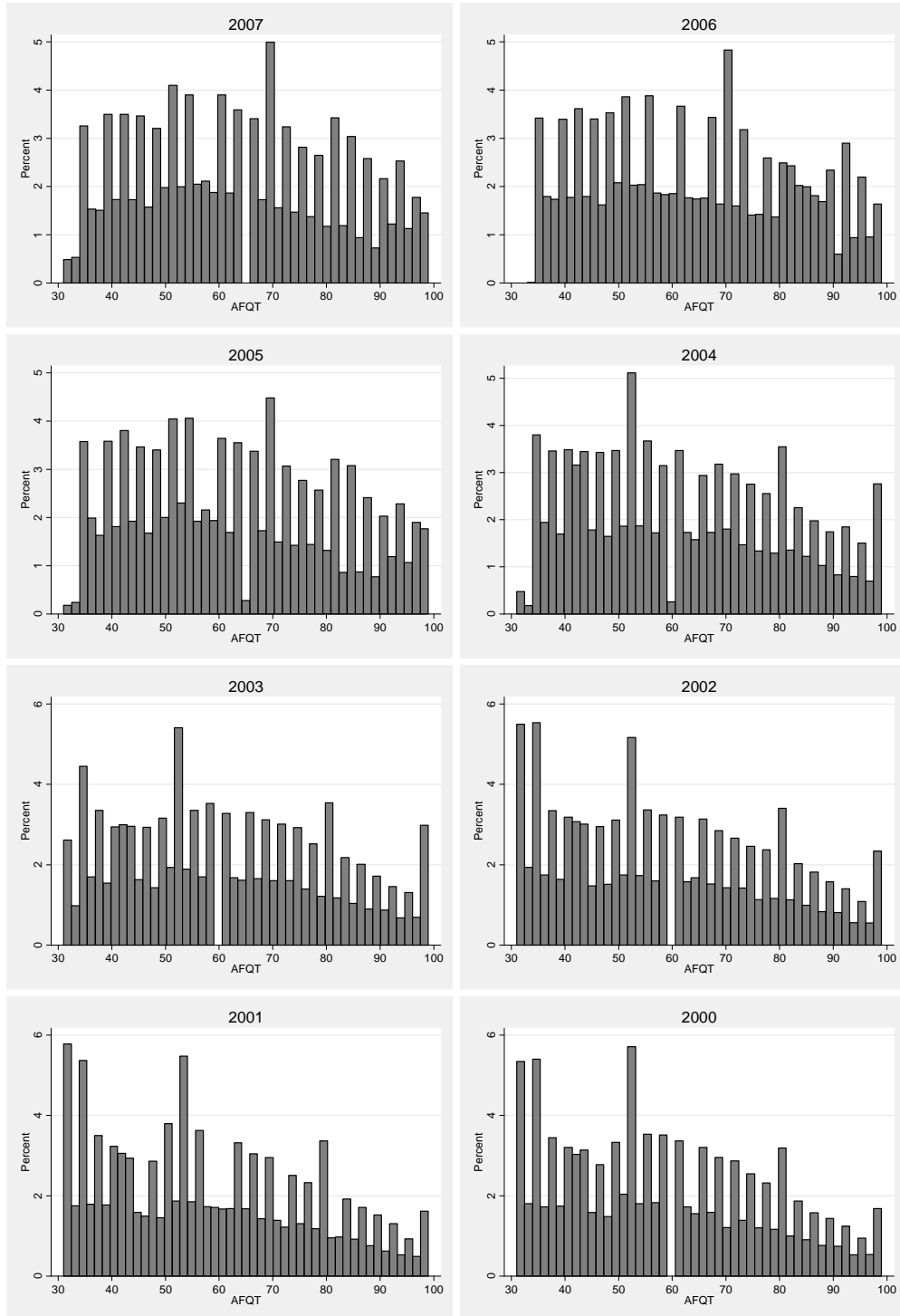
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 13.   AFQT Score Distribution for Men, FY2000 – FY2008

4.   Education Trends

Table 6 summarizes the individual education credentials, as defined by DMDC, that comprise the Tier I category. As expected, individuals who possess a high school diploma make up the majority of the sample, followed by those classified as high school seniors and those classified as possessing a credential near completion. Individuals classified as Tier I on the basis of college credits make up a smaller, but significant, portion. Persons holding graduate education degrees are reported but are not significant in numbers.

Table 6.   Number of Men Entering the Navy DEP, Tier I, by Education Credential, FY2000 – FY2008

FY	HS. Senior	Cred. Near Comp.	HS. No Exit Exam	HS. Grad.	Adult Education Dipl.	One Sem. Coll.	Assoc. Deg.	B.A. Deg.	M.A. Deg.	Prof. Nurse Dipl.	Post M.A. Deg.	First Prof. Deg.	Doctorate Deg.
								Tier I					
2000	16,989	1,961	0	21,836	437	690	220	374	14	2	1	1	0
2001	17,118	2,068	7	23,573	456	793	232	419	14	6	2	0	0
2002	16,025	1,843	27	25,252	341	813	321	666	10	10	3	1	1
2003	15,669	1,062	30	22,744	208	693	361	950	25	3	0	6	0
2004	14,944	766	10	20,768	201	541	335	871	25	3	0	3	1
2005	12,728	396	20	19,665	142	453	250	779	18	2	1	5	0
2006	11,023	193	33	20,299	121	402	297	832	15	1	0	1	1
2007	10,805	218	38	23,483	98	543	413	996	23	2	1	0	0
2008	5,450	126	15	16,496	76	382	261	581	20	2	0	2	0
Total	120,751	8,633	180	194,116	2,080	5,310	2,690	6,468	164	31	8	19	3

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 7 summarizes Tier II and Tier III education credentials. Those individuals possessing a GED make up a majority of the sample followed by those classified as currently in high school and those who possess a home school diploma. The data show that number of individuals possessing a GED has declined since FY2000 from 3,281 to 768 in FY2008. Tier III, no credential, make up a significant portion of the total but have seen a dramatic decrease in numbers from 1,990 in FY2000 to 185 in FY2008.

Table 7.   Number of Men Entering the Navy DEP, Tier II and Tier III, by Education
Credential, FY2000 – FY2008

	Tier II							Tier III
	Currently in HS.	GED	Occup. Prog. Cert.	Correspondence HS.	Cert. of Attendance	Home Study Dipl. (All AFQT)	Army Guard Challenge Prog.	No Credential
FY								
2000	208	3,281	8	15	48	221	134	1,990
2001	221	3,402	8	11	44	259	153	2,132
2002	149	2,207	9	10	43	121	169	1,129
2003	142	1,923	8	21	31	63	136	860
2004	155	1,078	7	18	29	68	154	413
2005	115	1,454	2	18	50	57	31	408
2006	123	1,196	7	24	33	56	18	327
2007	130	1,872	209	30	36	137	51	574
2008	44	768	99	13	6	73	33	185
Total	1,287	17,181	357	160	320	1,055	879	8,018

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 8 summarizes male DEP accessions by Tier for fiscal years 2000 through 2008. Tier I members accounted for 92.09 percent of total DEP accessions from FY2000 through FY2008 with Tier II members accounting for 5.74 percent and Tier III members accounting for 2.17 percent. The total number of DEP accessions for each fiscal year has fluctuated with FY2001 the highest at 50,918 and FY2008 the lowest at 24,623. In general the number of Tier II and Tier III personnel accessing into DEP has declined since FY2000.

Table 8.   Number and Percentage Distribution of Men Entering Navy DEP by
Education Tier, FY2000 – FY2008

FY	Tier I	% Tier I	Tier II	% Tier II	Tier III	% Tier III	Total
2000	42,525	87.81	3,915	8.08	1,990	4.11	48,430
2001	44,688	87.76	4,098	8.05	2,132	4.19	50,918
2002	45,313	92.19	2,708	5.51	1,129	2.30	49,150
2003	41,751	92.91	2,324	5.17	860	1.91	44,935
2004	38,468	95.24	1,509	3.74	413	1.02	40,390
2005	34,459	94.17	1,727	4.72	408	1.11	36,594
2006	33,218	94.90	1,457	4.16	327	0.93	35,002
2007	36,620	92.34	2,465	6.22	574	1.45	39,659
2008	23,411	95.04	1,036	4.21	185	0.75	24,632
Total	340,453	92.09	21,239	5.74	8,018	2.17	369,710

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Tier I accession rates have increased significantly as shown in Figure 14. During FY2000 and FY2001, Tier I male accessions made up approximately 87 percent of total accessions. The figure began to rise starting in FY2002 and reached a peak of 95.24 percent in FY2004. The Tier I accession rate fluctuated between FY2005 and FY2008, with a significantly lower accession rate in FY2007 at 92.34 percent.

Tier II accession rates have decreased significantly, as shown in Figure 15. The highest rates occurred in FY2000 and FY2001. These rates correspond with the lowest Tier I rates observed in Figure 14.   There was a gradual decline in accession rates between FY2002 through FY2004, where Tier II accessions reach a low of 3.74 percent. Between FY2005 and FY2008, the accession rates fluctuated with a spike in FY2007 of 6.22 percent.

Similar to the trend observed with Tier II DEP accession rates, Tier III DEP accession rates have also significantly decreased from FY2000 through FY2008, as shown in Figure 16. The highest accession rates occurred in FY2000 and FY2001, where Tier III accessions made up approximately 4.20 percent of total accessions.   After

FY2001 the data show a steep drop in Tier III accessions, with the lowest rate 0.75 percent observed in FY2008. Higher Tier III rates also correspond with lower Tier I rates.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
% Tier I	87.81	87.76	92.19	92.91	95.24	94.17	94.90	92.34	95.04

Fiscal Year
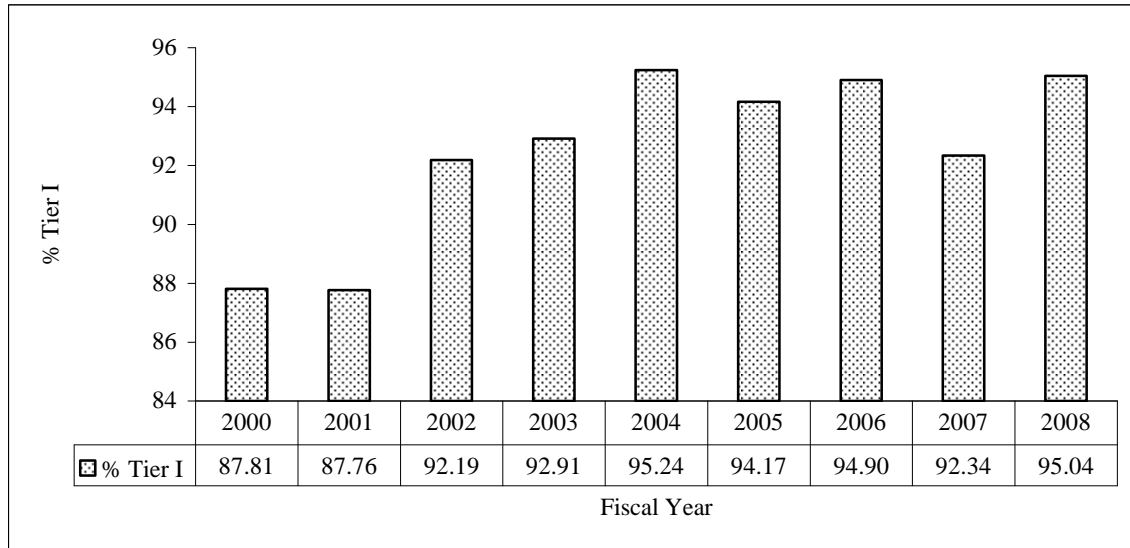
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 14.   Percentage of Men Entering Navy DEP From Education Tier I, FY2000 – FY2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
% Tier II	8.08	8.05	5.51	5.17	3.74	4.72	4.16	6.22	4.21

Fiscal Year
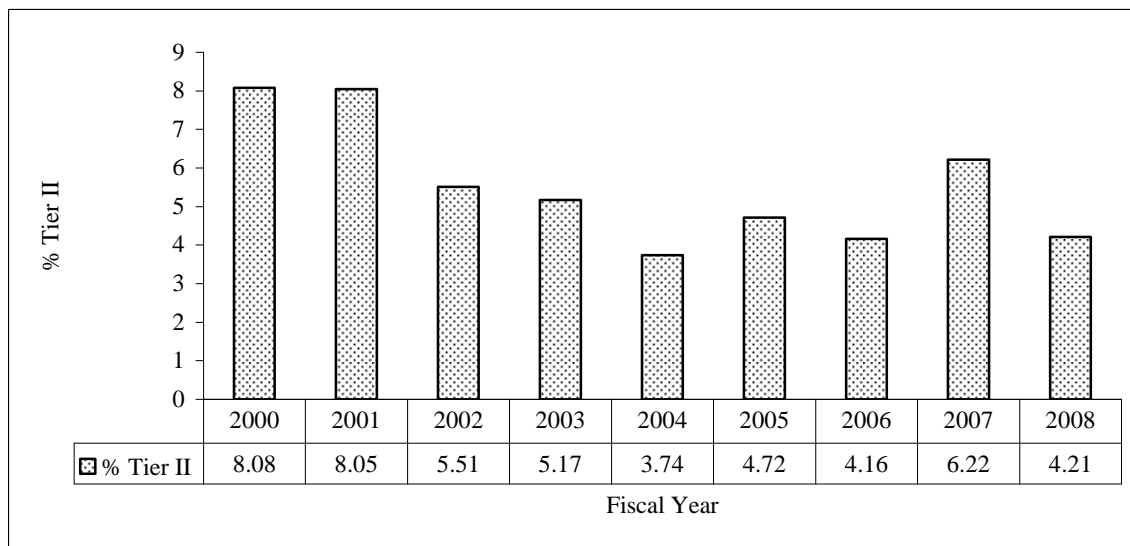
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 15.   Percentage of Men Entering Navy DEP From Education Tier II, FY2000 – FY2008

31

	2000	2001	2002	2003	2004	2005	2006	2007	2008
▣ % Tier III	4.11	4.19	2.30	1.91	1.02	1.11	0.93	1.45	0.75

Fiscal Year
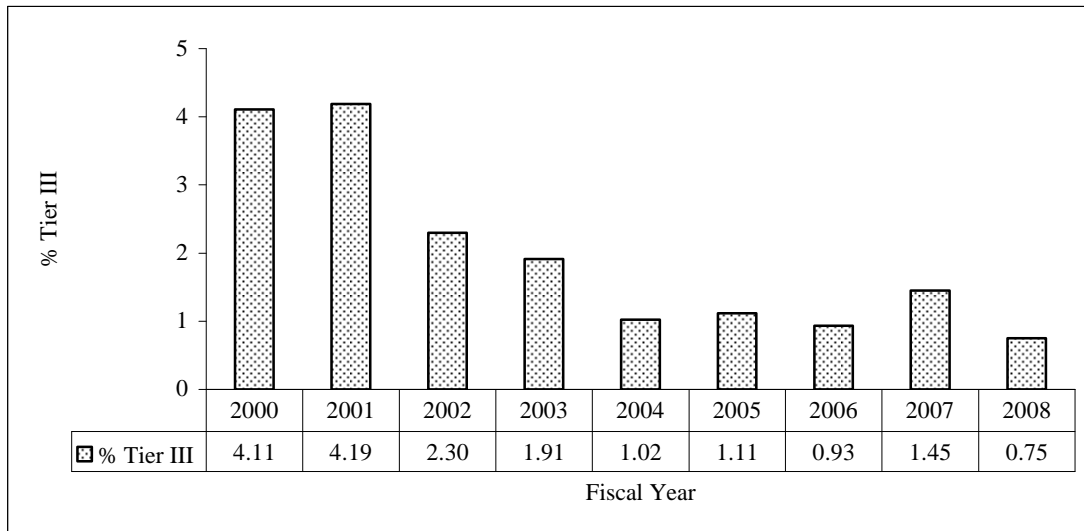
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 16.   Percentage of Men Entering Navy DEP From Education Tier III,
FY2000 – FY2008

5.   Tier I Attrition Regression Analysis

The probability of male DEP attrition was analyzed using a maximum likelihood estimation (MLE) probit model. The probit model was chosen over the LPM model because it was unknown if the probability response was linear, and the probit model automatically accounts for heteroskedasticity in the $Var(y|x)$.[40] Table 9 presents the variables and descriptive statistics of the Tier I model with d_att, the dependent variable, and the primary variables of interest afqt and age. The model includes an interaction term, afqt_age, to capture the effect of afqt dependent on age of individual. MLE were first generated using the probit model to gain an understanding of the magnitude and significance of the variables included in the model. Marginal effects for each of the variables, and probabilities for attrition, were then calculated for specific AFQT scores from, 31 to 99, within age groups 18, 19, 20, 21, 25, and 30. Individuals, younger than 18 or older than 30, were not examined because these age groups did not have enough observations to produce meaningful results.

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[40] Jeffrey M. Wooldridge, *Introductory Econometrics 3rd ed.*, (Mason: Thomson South-Western, 2006), 586.

Table 9.   Male Tier I Model and Descriptive Statistics

Variable	Description	Obs.	Mean	Std. Dev.	Min.	Max.
d_att	= 1 if true, 0 false	349466	0.1916	0.3935	0	1
afqt	AFQT percentile	349466	61.13	18.88	31	99
age	Age in DEP	349466	20.05	2.96	17	42
afqt_age	Age afqt interaction term	349466	5.51	59.08	-546.33	721.38
tid	Time in DEP	342386	162.93	119.31	1	551
tid2	Time in DEP squared	342386	14235.78	17065.90	100	149769
I_hsd	= 1 if true, 0 false	349466	0.5607	0.4963	0	1
I_hsnx	= 1 if true, 0 false	349466	0.0005	0.0226	0	1
I_hss	= 1 if true, 0 false	349466	0.3637	0.4811	0	1
I_cnc	= 1 if true, 0 false	349466	0.0266	0.1611	0	1
I_aed	= 1 if true, 0 false	349466	0.0060	0.0775	0	1
I_semcol	= 1 if true, 0 false	349466	0.0153	0.1228	0	1
I_asc_deg	= 1 if true, 0 false	349466	0.0078	0.0879	0	1
I_ba	= 1 if true, 0 false	349466	0.0187	0.1355	0	1
I_pnd	= 1 if true, 0 false	349466	0.0001	0.0094	0	1
I_grded	= 1 if true, 0 false	349466	0.0006	0.0237	0	1
omxwt	(weight - max weight allowed)	348307	-20.29	23.66	-107	123
youth	= 1 if true, 0 false	349466	0.0275	0.1634	0	1
metro	= 1 if true, 0 false	349466	0.8092	0.3929	0	1
mar	= 1 if true, 0 false	349466	0.0502	0.2183	0	1
deps	Number of dependents	349035	0.1174	0.4437	0	4
asian_pi	= 1 if true, 0 false	349466	0.0425	0.2018	0	1
black	= 1 if true, 0 false	349466	0.1741	0.3792	0	1
hisp	= 1 if true, 0 false	349466	0.1434	0.3504	0	1
white	= 1 if true, 0 false	349466	0.5746	0.4944	0	1
race_oth	= 1 if true, 0 false	349466	0.0654	0.2473	0	1
hor_mep	Distance from HOR to MEPS	347745	78.23	176.91	0	7429.14
rtc_hor	Distance from HOR to RTC	347745	888.09	568.62	0	8091.94
fy1999	= 1 if true, 0 false	347745	0.0293	0.1688	0	1
fy2000	= 1 if true, 0 false	349466	0.1205	0.3255	0	1
fy2001	= 1 if true, 0 false	349466	0.1269	0.3329	0	1
fy2002	= 1 if true, 0 false	349466	0.1290	0.3353	0	1
fy2003	= 1 if true, 0 false	349466	0.1192	0.3241	0	1
fy2004	= 1 if true, 0 false	349466	0.1100	0.3128	0	1
fy2005	= 1 if true, 0 false	349466	0.0985	0.2980	0	1
fy2006	= 1 if true, 0 false	349466	0.0950	0.2932	0	1
fy2007	= 1 if true, 0 false	349466	0.1046	0.3061	0	1
fy2008	= 1 if true, 0 false	349466	0.0669	0.2499	0	1
mep1 - mep65	= 1 if true, 0 false	349466*	*	*	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
* Complete Table in Appendix A.

Probit regression results are presented in Table 10. The overall goodness of fit, pseudo R-squared, value is 0.0626. The primary variables of interest, afqt and age, are both statistically significant with p-values < 0.0001. The data show that AFQT has a negative effect on probability of attrition, while age has a positive effect on probability of attrition. The interaction term, afqt_age, is also statistically significant with a p-value <

0.0001, which supports the hypothesis that the effects of AFQT and age are interrelated. The variables included to control for the time an individual spends in DEP, tid and tid2, are both statistically significant at the 1 percent level and indicate that the length of time spent in DEP has a positive effect on DEP attrition. The education credential variables vary in magnitude and significance. The data show that variables high school senior and credential near completion have a positive effect on DEP attrition. Both variables are statistically significant at the 1 percent level. The only college credential variables, which are statistically significant, are Bachelorette and Associate's degree. Possessing a Bachelorette degree has a positive effect on attrition while possessing an Associate's degree has a negative effect on attrition. All fiscal year dummy variables are statistically significant at the 1 percent level indicating that there are structural differences among the different fiscal years. The variables mep1 through mep64 vary individually in significance and magnitude, but are jointly significant at the 1 percent level.

Table 10.   Male Tier I Probit Regression Results

Variable	Coefficient	Std. Error	p-Value
afqt	-0.0024	0.0001	0.0000
age	0.0223	0.0012	0.0000
afqt_age	0.0003	0.0000	0.0000
tid	0.0015	0.0000	0.0000
tid2	0.0000	0.0000	0.0000
I_hss	0.0617	0.0071	0.0000
I_cnc	0.4404	0.0153	0.0000
I_aed	-0.0398	0.0363	0.2730
I_semcol	0.0280	0.0219	0.2000
I_asc_deg	-0.0931	0.0314	0.0030
I_pnd	0.1469	0.2655	0.5800
I_hsnx	0.0167	0.1165	0.8860
I_ba	0.0775	0.0203	0.0000
I_grded	0.0975	0.1063	0.3590
omxwt	-0.0014	0.0001	0.0000
youth	-1.2182	0.0310	0.0000
metro	0.0122	0.0073	0.0930
mar	-0.3273	0.0208	0.0000
deps	0.0421	0.0101	0.0000
asian_pi	-0.1333	0.0144	0.0000
black	-0.0709	0.0079	0.0000
hisp	-0.0526	0.0087	0.0000
race_oth	0.0366	0.0107	0.0010

Variable	Coefficient	Std. Error	p-Value
hor_mep	-0.0001	0.0000	0.0030
rtc_hor	0.0000	0.0000	0.8470
fy2000	-0.2920	0.0159	0.0000
fy2001	-0.2629	0.0158	0.0000
fy2002	-0.2518	0.0157	0.0000
fy2003	-0.2040	0.0155	0.0000
fy2004	-0.1598	0.0156	0.0000
fy2005	-0.1693	0.0159	0.0000
fy2006	-0.1757	0.0161	0.0000
fy2007	-0.1705	0.0160	0.0000
fy2008	-0.1982	0.0176	0.0000
mep1-mep64	*	*	*
Intercept	-1.3496	0.0855	0.0000

Pseudo R2	Number of obs.	LR chi2(98)	Prob > chi2
0.0626	339,215	19706.22	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A.
Note: Base individual is a white male with AFQT 61 and Age 20 who possesses a high school diploma. Dependent variable is DEP attrite.

Marginal effects are presented in Table 11 and were calculated at the specified values of independent variables listed in the "x" column. Consistent with the results reported in Table 10, AFQT score has a negative effect on attrition and age has a positive effect on attrition; however, the marginal effect coefficients can be interpreted. A one-point increase in AFQT, for an individual who is 20 years old and scored 61 on the AFQT, will decrease probability of attrition by 0.0008; and an increase in age by one year, for the same individual, will increase probability of attrition by 0.0072, all else equal. This specific individual has a 0.2578 probability of attrition. Table 11 may also be used to calculate probability of attrition for an individual with other characteristics. For example the probability of attrition for an individual, of the same age and AFQT score, who possesses an Associate's degree and is black would be (0.2629 – 0.0291 – 0.0223 = 0.2115). The same method may not be used with AFQT or age since the marginal effects of AFQT score are not constant with changes in level of AFQT score and depend on an individual's age.

Table 11. Male Tier I Probit Regression Results, Marginal Effects

Variable	dy/dx	x	Std. Error	p-Value

Variable	dy/dx	x	Std. Error	p-Value
afqt	-0.0008	61	0.0001	0.0000
age	0.0072	20	0.0005	0.0000
afqt_age	0.0001	5.46	0.0000	0.0000
tid	0.0005	164	0.0000	0.0000
tid2	0.0000	14190	0.0000	0.0000
I_hss	0.0203	0	0.0025	0.0000
I_cnc	0.1590	0	0.0074	0.0000
I_aed	-0.0127	0	0.0114	0.2730
I_semcol	0.0091	0	0.0072	0.2000
I_asc_deg	-0.0291	0	0.0096	0.0030
I_pnd	0.0495	0	0.0932	0.5800
I_hsnx	0.0054	0	0.0380	0.8860
I_ba	0.0256	0	0.0069	0.0000
I_grded	0.0324	0	0.0364	0.3590
omxwt	-0.0004	-20.3	0.0000	0.0000
youth	-0.2264	0	0.0171	0.0000
metro	0.0040	0	0.0024	0.0930
mar	-0.0935	0	0.0072	0.0000
deps	0.0136	0	0.0033	0.0000
asian_pi	-0.0411	0	0.0047	0.0000
black	-0.0223	0	0.0027	0.0000
hisp	-0.0167	0	0.0028	0.0000
race_oth	0.0119	0	0.0036	0.0010
hor_mep	0.0000	78.3	0.0000	0.0030
rtc_hor	0.0000	888.3	0.0000	0.8470
fy2000	-0.0846	0	0.0066	0.0000
fy2001	-0.0771	0	0.0063	0.0000
fy2002	-0.0741	0	0.0061	0.0000
fy2003	-0.0612	0	0.0057	0.0000
fy2004	-0.0488	0	0.0054	0.0000
fy2005	-0.0515	0	0.0056	0.0000
fy2006	-0.0533	0	0.0057	0.0000
fy2007	-0.0518	0	0.0056	0.0000
fy2008	-0.0596	0	0.0061	0.0000
mep1-mep64	*	*	*	*

Prob. at (X bar)				
0.1617				
Prob. at (X)				
0.2629*				
Pseudo R2	Number of obs.		LR chi2(98)	Prob > chi2
0.0626	339,215		19,706.22	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A. Estimated with LPM including all Education Tiers.
Note: Base individual is a white male with AFQT 61 and Age 20 who possesses a high school diploma. Dependent variable is DEP attrite.

Similar probit models, as presented in Table 11, were estimated for each level of AFQT, 31 through 99, and for different age groups construct Figure 17. The change in probability of DEP attrition, with an increase in AFQT score, is not the same for persons of different ages as shown by Figure 17. For individuals between ages 18 and 21 the probability of attrition decreases as AFQT score increases. The rate at which probability of attrition decreases is greater, steeper, for younger individuals than it is for older individuals up through age 21. The data show the probability of attrition increases for an individual who is 25 years of age, as AFQT increases, but only slightly. By age 30 the probability of attrition is increasing at a much higher rate than with the 25-year-old. Ages 22 to 24 and 26 to 30 are omitted because there is sufficient data, with the ages presented, to show the relationship between AFQT and age. It should be noted that, if the effect of AFQT score did not depend on age, the curves presented in Figure 17 would be parallel for ages 18 to 21 and ages 25 to 30.
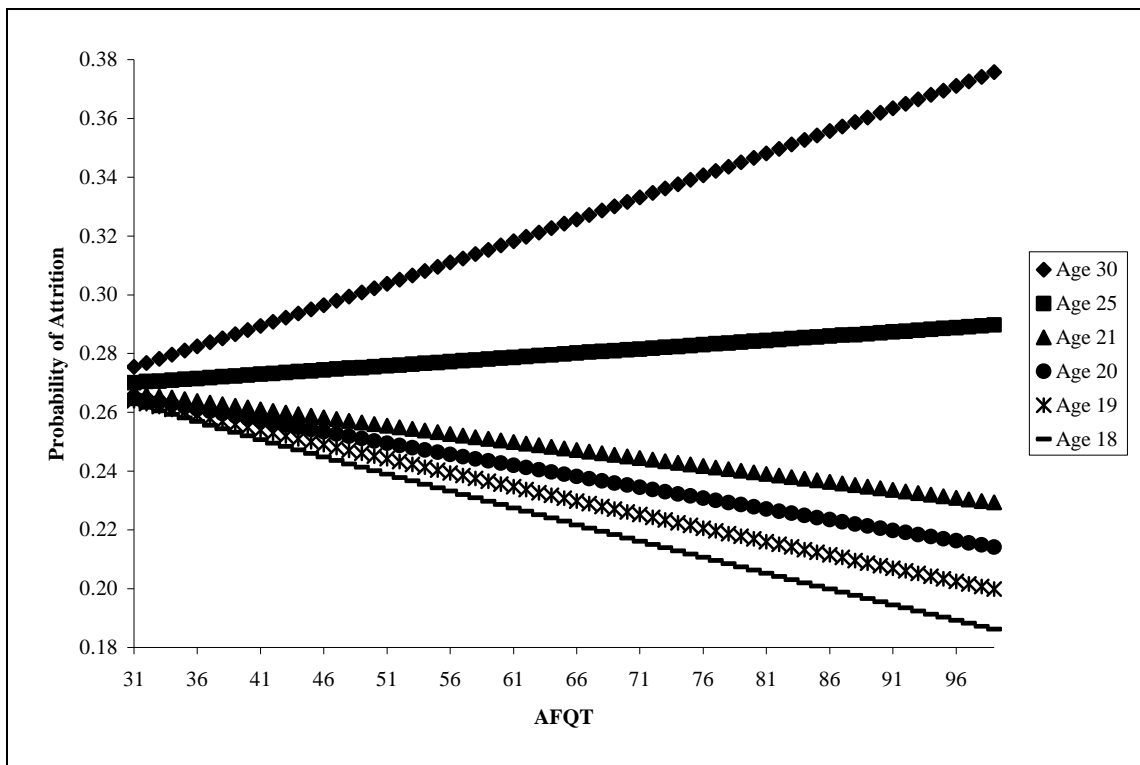
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: This individual is a white male who possesses a high school diploma.
Complete Table in Appendix A.

Figure 17.   Male Tier I Probability of Attrition by Age and AFQT

37

6. Tier II Attrition Regression Analysis

Table 12 presents the variables and descriptive statistics of the Tier II model with d_att, the dependent variable, and the primary variables of interest afqt and age. The methods and reasoning behind the model are similar to those of the Tier I model.

Table 12.   Male Tier II Model and Descriptive Statistics

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	= 1 if true, 0 false	22230	0.1963	0.3972	0	1
afqt	AFQT percentile	22230	61.90	15.29	31	99
age	Age in DEP	22230	20.61	2.84	16.93	38.97
afqt_age	Age afqt interaction term	22230	2.19	44.60	-380.80	465.19
tid	Time in DEP	21759	124.05	105.13	1	551
tid2	Time in DEP Squared	21759	11052.43	20038.28	0	182329
II_ged	= 1 if true, 0 false	22230	0.8467	0.3602	0	1
II_inhs	= 1 if true, 0 false	22230	0.0642	0.2451	0	1
II_opc	= 1 if true, 0 false	22230	0.0160	0.1255	0	1
II_csd	= 1 if true, 0 false	22230	0.0073	0.0853	0	1
II_coa	= 1 if true, 0 false	22230	0.0151	0.1218	0	1
II_hsd	= 1 if true, 0 false	22230	0.0507	0.2193	0	1
omxwt	(weight - max weight allowed)	22165	-22.89	23.16	-96	78
youth	= 1 if true, 0 false	22230	0.0165	0.1274	0	1
metro	= 1 if true, 0 false	22230	0.8163	0.3872	0	1
mar	= 1 if true, 0 false	22230	0.0866	0.2813	0	1
deps	Number of dependents	22193	0.2322	0.6148	0	4
asian_pi	= 1 if true, 0 false	22230	0.0234	0.1511	0	1
black	= 1 if true, 0 false	22230	0.1236	0.3291	0	1
hisp	= 1 if true, 0 false	22230	0.1128	0.3163	0	1
white	= 1 if true, 0 false	22230	0.6699	0.4703	0	1
race_oth	= 1 if true, 0 false	22230	0.0704	0.2558	0	1
hor_mep	Distance from HOR to MEPS	22103	83.65	192.89	0	6301.63
rtc_hor	Distance from HOR to RTC	22103	830.76	516.45	0	7354.42
fy2000	= 1 if true, 0 false	22230	0.1739	0.3790	0	1
fy2001	= 1 if true, 0 false	22230	0.1836	0.3872	0	1
fy2002	= 1 if true, 0 false	22230	0.1215	0.3267	0	1
fy2003	= 1 if true, 0 false	22230	0.1043	0.3057	0	1
fy2004	= 1 if true, 0 false	22230	0.0678	0.2514	0	1
fy2005	= 1 if true, 0 false	22230	0.0776	0.2676	0	1
fy2006	= 1 if true, 0 false	22230	0.0655	0.2474	0	1
fy2007	= 1 if true, 0 false	22230	0.1107	0.3138	0	1
fy2008	= 1 if true, 0 false	22230	0.0465	0.2105	0	1
mep1 - mep64	= 1 if true, 0 false	349466	*	*	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
* Complete Table in Appendix A.

Probit regression results are presented in Table 13. The overall goodness of fit, pseudo R-squared, value is 0.0727. The primary variables of interest, afqt and age, are both statistically significant at the 1 percent level. The data show that AFQT has a

negative effect on probability of attrition while age has a positive effect on probability of attrition. The interaction term, afqt_age, is not statistically significant alone however the variables afqt and afqt_age are jointly significant (Prob > chi2 = 0.0000), which supports the hypothesis that the effects of AFQT score and age are interrelated in the Tier II model. The variables included to control for the time an individual spends in DEP, tid and tid2, are both statistically significant at the 1 percent level and indicate that the length of time spent in DEP has a positive effect on DEP attrition for those within the Tier II category. The education credential variables vary in magnitude and significance. The data show that the variables for those possessing a home school diploma, certificate of attendance, or occupational program certificate have a negative effect on attrition. All fiscal year dummy variables are not statistically significant alone however are jointly significant, (Prob > chi2 = 0.0000), indicating that there are structural differences among the different fiscal years in the Tier II model. The variables mep1 through mep64 vary individually in significance and magnitude, but are jointly significant at the 1 percent level.

Table 13.   Male Tier II Probit Regression Results

Variable	Coefficient	Std. Error	p-Value
afqt	-0.0039	0.0007	0.0000
age	0.0163	0.0041	0.0000
afqt_age	0.0003	0.0002	0.2770
tid	0.0022	0.0001	0.0000
tid2	0.0000	0.0000	0.0000
II_inhs	-0.1907	0.0445	0.0000
II_opc	-0.2684	0.0947	0.0050
II_csd	-0.1874	0.1267	0.1390
II_coa	-0.2553	0.0848	0.0030
II_hsd	-0.3029	0.0538	0.0000
omxwt	-0.0013	0.0005	0.0050
youth	-1.0526	0.1424	0.0000
metro	0.0093	0.0287	0.7470
mar	-0.3496	0.0616	0.0000
deps	0.0482	0.0282	0.0870
asian_pi	-0.3085	0.0771	0.0000
black	-0.1641	0.0351	0.0000
hisp	-0.0975	0.0367	0.0080
race_oth	-0.0386	0.0416	0.3530
hor_mep	0.0000	0.0001	0.8990

39

Variable	Coefficient	Std. Error	p-Value
rtc_hor	0.0002	0.0001	0.0190
fy2000	-0.1442	0.0543	0.0080
fy2001	-0.0301	0.0534	0.5730
fy2002	-0.0713	0.0556	0.2000
fy2003	0.0464	0.0557	0.4050
fy2004	0.0738	0.0595	0.2150
fy2005	-0.0526	0.0590	0.3720
fy2006	-0.0435	0.0617	0.4810
fy2007	0.0443	0.0562	0.4300
fy2008	0.0742	0.0676	0.2720
mep1-mep64	*	*	*
Intercept	-1.7884	0.2791	0.0000

Pseudo R2	Number of obs.	LR chi2(94)	Prob > chi2
0.0727	21,539	1,471.24	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A.
Note: Base individual is a white male with AFQT 62 and Age 21 who possesses a GED. Dependent variable is DEP attrite.

Marginal effects are presented in Table 14 and were calculated at specified values of the independent variables listed in the "x" column.   Consistent with the results reported in Table 13, AFQT score has a negative effect on attrition, and age has a positive effect on attrition. Results may be interpreted as described in section 5.

Table 14.   Male Tier II Probit Regression Results, Marginal Effects

Variable	dy/dx	x	Std. Error	p-Value
afqt	-0.0009	62	0.0003	0.0000
age	0.0036	21	0.0012	0.0000
afqt_age	0.0001	2.2	0.0001	0.2770
tid	0.0003	124	0.0001	0.0000
tid2	0.0000	12073	0.0000	0.0000
II_inhs	-0.0376	0	0.0123	0.0000
II_opc	-0.0505	0	0.0197	0.0050
II_csd	-0.0370	0	0.0241	0.1390
II_coa	-0.0484	0	0.0184	0.0030
II_hsd	-0.0558	0	0.0167	0.0000
omxwt	-0.0003	-18.3	0.0001	0.0050
youth	-0.1213	0	0.0379	0.0000
metro	0.0020	0	0.0063	0.7470
mar	-0.0627	0	0.0186	0.0000
deps	0.0106	0	0.0066	0.0870
asian_pi	-0.0567	0	0.0184	0.0000
black	-0.0329	0	0.0103	0.0000

Variable	dy/dx	x	Std. Error	p-Value
hisp	-0.0203	0	0.0086	0.0080
race_oth	-0.0083	0	0.0090	0.3530
hor_mep	0.0000	78.3	0.0000	0.8990
rtc_hor	0.0000	888.3	0.0000	0.0190
fy2000	-0.0292	0	0.0134	0.0080
fy2001	-0.0065	0	0.0117	0.5730
fy2002	-0.0150	0	0.0124	0.2000
fy2003	0.0104	0	0.0126	0.4050
fy2004	0.0169	0	0.0140	0.2150
fy2005	-0.0112	0	0.0129	0.3720
fy2006	-0.0093	0	0.0135	0.4810
fy2007	0.0100	0	0.0127	0.4300
fy2008	0.0170	0	0.0159	0.2720
mep1-mep64	*	*	*	*

Prob. at (X bar)				
0.1660				
Prob. at (X)				
0.2890*				
Pseudo R2	Number of obs.		LR chi2(94)	Prob > chi2
0.0727	21,539		1,471.24	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A. Estimated with LPM including all Education Tiers.
Note: Base individual is a white male with AFQT 62 and Age 21 who possesses a GED. Dependent variable is DEP attrite.

Similar probit models, as presented in Table 14, were estimated for each level of AFQT, 31 through 99, and for different age groups to construct Figure 18. As with the Tier I model, the change in probability of DEP attrition, with an increase in AFQT score, is not the same for persons of different age. As with the Tier I model, the probability of attrition decreases as AFQT score increases with individuals between ages 18 and 21. However, the data show the probability of attrition decreases for 25-year-olds, as well, unlike the Tier I model. As with the Tier I model, the probability for attrition increases with AFQT score for 30-year-olds, but at a lower rate.
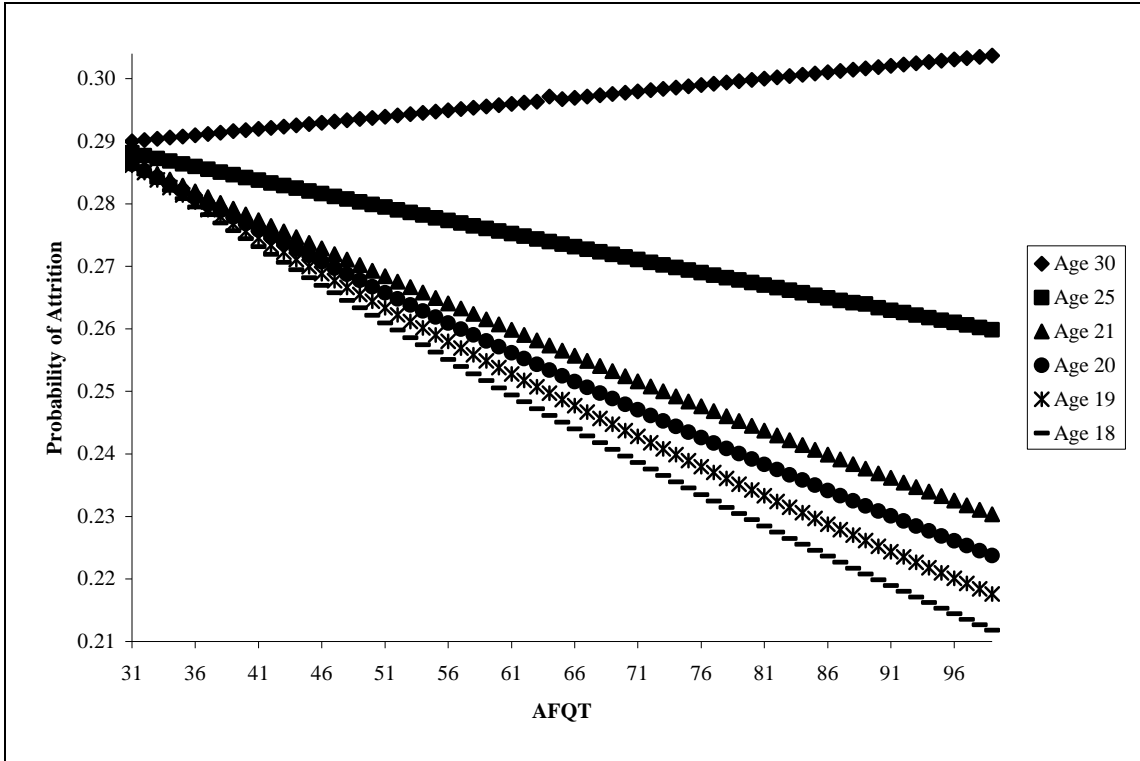
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: This individual is a white male who possesses a GED.
Complete Table in Appendix A.

Figure 18.   Male Tier II Probability of Attrition by Age and AFQT

7.   Tier III Attrition Regression Analysis

Table 15 presents the variables and descriptive statistics of the Tier III model with d_att, the dependent variable, and the primary variables of interest afqt and age.

Table 15.   Male Tier III Model and Descriptive Statistics

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	= 1 if true, 0 false	8377	0.2015041	0.4011	0	1
afqt	AFQT percentile	8377	62.19	13.09	31	99
age	Age in DEP	8377	20.29	2.52	16.95	34.62
afqt_age	Age afqt interaction term	8377	-0.3121	33.67	-391.89	422.14
tid	Time in DEP	8130	106.44	98.85	1	551
tid2	Time in DEP Squared	8130	9770.121	19552.16	169	198025
omxwt	(weight - max weight allowed)	8348	-23.85	23.28	-96	67
youth	= 1 if true, 0 false	8377	0.0181	0.1335	0	1
metro	= 1 if true, 0 false	8377	0.8318014	0.3741	0	1
mar	= 1 if true, 0 false	8377	0.0763997	0.2657	0	1
deps	Number of dependents	8367	0.2166	0.5907	0	4
asian_pi	= 1 if true, 0 false	8377	0.0251	0.1563	0	1
black	= 1 if true, 0 false	8377	0.0945	0.2926	0	1

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
hisp	= 1 if true, 0 false	8377	0.1170	0.3214	0	1
white	= 1 if true, 0 false	8377	0.6858	0.4642	0	1
race_oth	= 1 if true, 0 false	8377	0.0776	0.2675	0	1
hor_mep	Distance from HOR to MEPS	8318	76.14	162.43	0	4188.00
rtc_hor	Distance from HOR to RTC	8318	867.58	551.88	0	7330.72
fy2000	= 1 if true, 0 false	8377	0.2353	0.4242	0	1
fy2001	= 1 if true, 0 false	8377	0.2530	0.4347	0	1
fy2002	= 1 if true, 0 false	8377	0.1347	0.3414	0	1
fy2003	= 1 if true, 0 false	8377	0.1027	0.3035	0	1
fy2004	= 1 if true, 0 false	8377	0.0491	0.2160	0	1
fy2005	= 1 if true, 0 false	8377	0.0487	0.2153	0	1
fy2006	= 1 if true, 0 false	8377	0.0389	0.1934	0	1
fy2007	= 1 if true, 0 false	8377	0.0682	0.2520	0	1
fy2008	= 1 if true, 0 false	8377	0.0221	0.1470	0	1
mep1 - mep64	= 1 if true, 0 false	349466*	*	*	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
* Complete Table in Appendix A.

Probit regression results are presented in Table 16. The overall goodness of fit, pseudo R-squared, value is 0.0853. The primary variables of interest, afqt and age, are not both statistically significant at the 1 percent level but are jointly significant (Prob > chi2 = 0.0000). The data show that AFQT has a negative effect on probability of attrition while age has a positive effect on probability of attrition. The interaction term, afqt_age, is not statistically significant alone however the variables afqt, age and afqt_age are jointly significant (Prob > chi2 = 0.0001), which supports the hypothesis that the effects of AFQT and age are interrelated in the Tier III model. The variables included to control for the time an individual spends in DEP, tid and tid2, are both statistically significant at the 1 percent level and indicate that the length of time spent in DEP has a positive effect on DEP attrition for those within the Tier III category. None of the fiscal year dummy variables are individually statistically significant however are jointly significant at the 5 percent level, (Prob > chi2 = 0.0325), indicating that there are structural differences among the different fiscal years in the Tier III model. The variables mep1 through mep64 vary individually in significance and magnitude, but are jointly significant at the 10 percent level.

Table 16.   Male Tier III Probit Regression Results

Variable		Coefficient	Std. Error		p-Value
afqt		-0.0063	0.0013		0.0000
age		0.0034	0.0074		0.6460
afqt_age		0.0004	0.0005		0.4290
tid		0.0017	0.0003		0.0000
tid2		0.0000	0.0000		0.0000
omxwt		-0.0014	0.0008		0.0710
youth		-1.3009	0.2790		0.0000
metro		0.0447	0.0503		0.3740
mar		-0.2505	0.1072		0.0190
deps		0.0175	0.0485		0.7180
asian_pi		-0.2458	0.1208		0.0420
black		-0.0284	0.0626		0.6510
hisp		-0.0393	0.0595		0.5090
race_oth		0.2154	0.0624		0.0010
hor_mep		0.0002	0.0001		0.1310
rtc_hor		0.0000	0.0001		0.8020
fy2000		-0.1035	0.0878		0.2380
fy2001		-0.0817	0.0874		0.3500
fy2002		0.0947	0.0910		0.2980
fy2003		-0.0715	0.0946		0.4500
fy2004		0.0228	0.1071		0.8310
fy2005		-0.1478	0.1099		0.1790
fy2006		-0.0264	0.1158		0.8190
fy2007		0.0596	0.1014		0.5570
fy2008		-0.0227	0.1385		0.8700
mep1-mep64		*	*		*
Intercept		-1.42	0.5548		0.011

Pseudo R2		Number of obs.	LR chi2(87)		Prob > chi2
0.0853		8,035	641.95		0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A.
Note: Base individual is a white male with AFQT 62 and Age 20 who possesses no education credential. Dependent variable is DEP attrite.

Marginal effects are presented in Table 17 and were calculated at specified values of the independent variables listed in the "x" column. Consistent with the results reported in Table 16, AFQT score has a negative effect on attrition, and age has a positive effect on attrition. Results may be interpreted as described in Chapter V.

Table 17. Male Tier III Probit Regression Results, Marginal Effects

Variable	dy/dx	x	Std. Error	p-Value
afqt	-0.0010	62	0.0006	0.0000
age	0.0005	20	0.0012	0.6460
afqt_age	0.0001	0	0.0001	0.4290
tid	0.0003	106	0.0002	0.0000
tid2	0.0000	9770	0.0000	0.0000
omxwt	-0.0002	-20	0.0002	0.0710
youth	-0.0804	0	0.0628	0.0000
metro	0.0071	0	0.0091	0.3740
mar	-0.0324	0	0.0239	0.0190
deps	0.0027	0	0.0076	0.7180
asian_pi	-0.0319	0	0.0245	0.0420
black	-0.0043	0	0.0097	0.6510
hisp	-0.0059	0	0.0095	0.5090
race_oth	0.0384	0	0.0244	0.0010
hor_mep	0.0000	78	0.0000	0.1310
rtc_hor	0.0000	888	0.0000	0.8020
fy2000	-0.0149	0	0.0161	0.2380
fy2001	-0.0119	0	0.0152	0.3500
fy2002	0.0156	0	0.0170	0.2980
fy2003	-0.0105	0	0.0155	0.4500
fy2004	0.0036	0	0.0169	0.8310
fy2005	-0.0206	0	0.0202	0.1790
fy2006	-0.0040	0	0.0178	0.8190
fy2007	0.0096	0	0.0170	0.5570
fy2008	-0.0035	0	0.0211	0.8700
mep1-mep64	*	*	*	*

Prob. at (X bar)				
0.1625				
Prob. at (X)				
0.3051*				
Pseudo R2	Number of obs.		LR chi2(87)	Prob > chi2
0.0853	8,035		641.95	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix A. Estimated with LPM including all Education Tiers.
Note: Base individual is a white male with AFQT 62 and Age 20 who possesses no education credential. Dependent variable is DEP attrite.

Similar probit models, as presented in Table 17, were estimated for each level of AFQT, 31 through 99, and for different age groups to construct Figure 19. As shown with the Tier I model, the change in probability of DEP attrition, with an increase in AFQT score, is not the same for persons of different age. Similar to the Tier I model, the

probability of attrition decreases as AFQT score increases with individuals between ages 18 and 21. However, the data show the probability of attrition also decreases for 25-year-olds as well, unlike the Tier I model and similar to the Tier II model. As with all models, the probability for attrition increases with AFQT for 30-year-olds. This model shows a convergence of curves at approximately AFQT 56. The probability of attrition for AFQT scores below 56 may not be accurate due to insufficient observations consisting of individual who are classified as Tier III and have an AFQT score lower than 56.
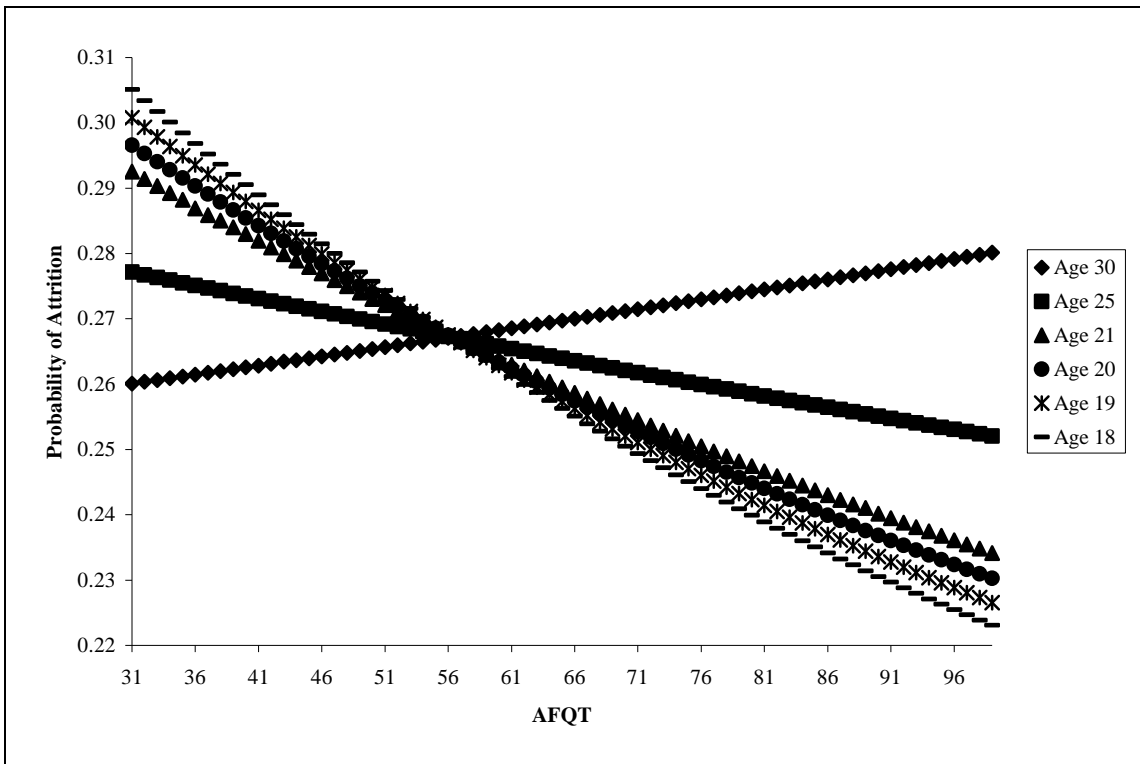
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: This individual is a white male who possesses no education credential.
Complete Table in Appendix A.

Figure 19.   Male Tier III Probability of Attrition by Age and AFQT

IV. ANALYSIS OF DELAYED ENTRY PROGRAM ATTRITION BY WOMEN

A. DATA

The Defense Manpower Data Center (DMDC) provided the data used in this analysis. The data are similar to those described in Chapter III, but are comprised of women only.

B. METHODOLOGY

An analysis of attrition, age, AFQT score, and educational trends for female DEP members was conducted using pooled cross-sectional data from FY1999 through FY2008, with FY1999 including only those women who accessed into DEP during that fiscal year. To repeat, the primary focus in this section is upon women. Members were grouped according to their Educational Tier (I, II, or III). Each group was then analyzed separately with respect to the effects of AFQT score and age on the probability of attrition, controlling for other demographic factors.

C. VARIABLES

The variables analyzed in this chapter are similar to those presented in Table 2. The primary variables of interest are AFQT percentile score and age of the women while a member of DEP. The variable afqt_age is an interaction term between AFQT score and age, and is included to capture the effect of AFQT score on the probability of attrition, given a specified age of an individual.

D. RESULTS

The following section summarizes the DEP attrition analysis for women with respect to AFQT score, age, education, and other demographic factors.

1. Attrition Trends

Attrition rates were calculated as a percentage of DEP accessions or as a percentage of active duty accessions for the corresponding fiscal year in which attrition occurred. Since accession varies over fiscal years, and not all individuals attrite from DEP in the same fiscal year they entered, normalized attrition rates have also been calculated as in Chapter III.

Table 18 summarizes female attrition, DEP accessions, and active duty accessions for all Tiers. The data indicate that the number of women entering DEP between FY2000 and FY2008 fluctuated as it did with their male counterparts. Generally higher accession numbers were not seen for women from FY2000 through FY2003 as it was for men in the DEP.

Table 18.   Navy DEP Attrition for Women, all Education Tiers, FY2000 - FY2008

FY	Attrite	DEP	Access	% DEP	%DEP(N)	% Access	% Access(N)
2000	3,146	11,739	8,997	26.80	27.60	34.97	38.64
2001	2,961	12,872	9,156	23.00	25.98	32.34	36.37
2002	2,902	13,098	7,515	22.16	25.46	38.62	35.64
2003	3,541	7,878	6,901	44.95	31.07	51.31	43.49
2004	2,874	9,311	6,536	30.87	31.93	43.97	41.25
2005	2,871	8,524	6,131	33.68	31.89	46.83	41.21
2006	2,701	9,356	6,753	28.87	30.01	40.00	38.77
2007	2,924	11,002	7,482	26.58	32.48	39.08	41.97
2008	3,353	6,815	7,935	49.20	37.25	42.26	48.12
Total	27,273	90,595	67,406	30.10	N/A	40.46	N/A

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 20 shows attrition rates for women in all Tiers compared with overall attrition rates, including men. For all fiscal years women attrition rates have been higher than the overall attrition rates. This is the opposite of what is found for men, whose attrition rates were lower than the overall attrition rates. Between FY2000 and FY2002, female attrition rates decreased slightly from 26.8 percent 22.16 percent. Attrition rates then spiked to 44.95 percent in FY2003. From FY2004 through FY2007, attrition gradually declined and then spiked again in FY2008 at 49.2 percent.
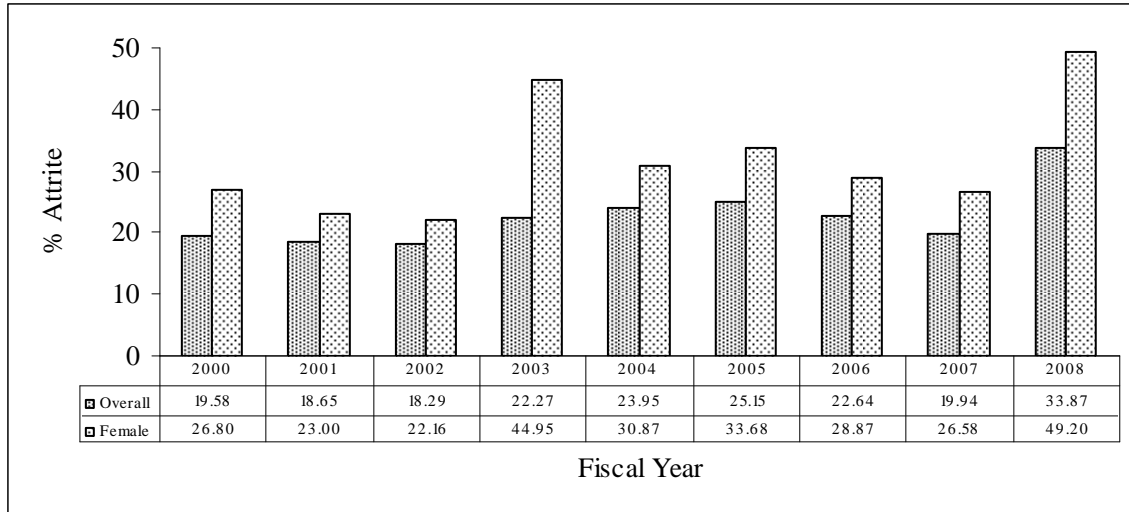
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 20.   Navy DEP Women and Overall Attrition Rates, all Education Tiers, FY2000 - FY2008

The data shown in Figure 21 are the normalized attrition rates shown in Figure 20. Attrition rates between FY2000 and FY2002 gradually declined, as shown with the raw data, with a spike in FY2003 of 31.07 percent. The normalized data show that attrition rates generally remained constant at approximately 32 percent from FY2003 through FY2005. In FY2006, attrition rates declined slightly and then rose to a peak of 37.25 percent in FY2008.
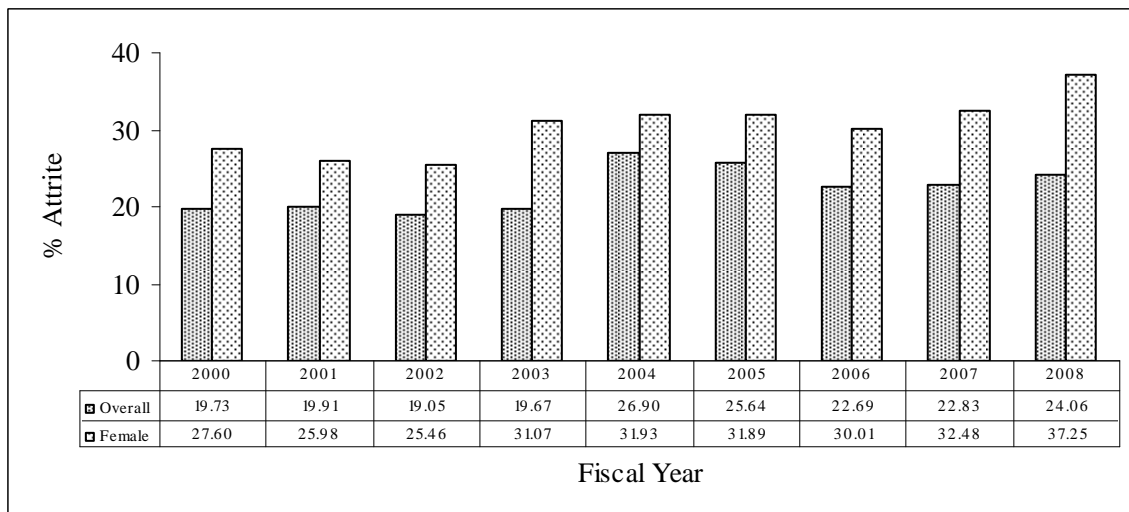
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 21.   Women and Overall Navy DEP Attrition Rates, all Education Tiers, Normalized, FY2000 through FY2008

Table 19 summarizes female attrition and accession for each Tier. The data show that the number of women who entered DEP with Tier I education credentials fell from 11,228 in FY2000 to 6,603 in FY2008, with a spike in FY2007 of 10,510. Tier II accessions fluctuated, while Tier III accessions fell in FY2000 through FY2008.

Table 19. Navy DEP Attrition by Education Tier for Women, FY2000 - FY2008

FY	Tier I					Tier II					Tier III				
	Attrite	DEP	Access	% DEP	% DEP(N)	Attrite	DEP	Access	% DEP	% DEP(N)	Attrite	DEP	Access	% DEP	% DEP(N)
2000	3,024	11,228	8,550	26.93	27.67	104	390	342	26.67	28.47	18	121	105	14.88	17.69
2001	2,818	12,225	8,725	23.05	25.78	108	500	333	21.60	29.57	35	147	98	23.81	34.40
2002	2,761	12,580	7,121	21.95	25.26	114	415	300	27.47	31.21	27	103	94	26.21	26.54
2003	3,420	7,686	6,747	44.50	31.29	100	156	132	64.10	27.38	21	36	22	58.33	20.64
2004	2,784	9,105	6,395	30.58	32.03	72	182	120	39.56	27.19	18	24	21	75.00	39.13
2005	2,779	8,249	5,999	33.69	31.98	76	229	114	33.19	28.70	16	46	18	34.78	34.78
2006	2,584	8,987	6,526	28.75	29.73	100	328	202	30.49	37.76	17	41	25	41.46	36.96
2007	2,781	10,510	7,166	26.46	32.00	128	399	259	32.08	48.34	15	93	57	16.13	32.61
2008	3,221	6,603	7,643	48.78	37.06	108	186	248	58.06	40.79	24	26	44	92.31	52.17
Total	26,172	87,173	64,872	30.02	N/A	910	2,785	2,050	32.68	N/A	191	637	484	29.98	N/A

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

The data illustrated in Figure 22 show female attrition rates, divided by Tier, as a percent of the total number of women entering DEP within their Tier group. Rates were not calculated as a percent of total DEP accessions for a given fiscal year. The data show that, from FY2000 through FY2002, attrition rates for all Tiers fluctuated. From FY2003 through FY2004, attrition rates for women in Tier II and Tier III were higher than that of women in Tier I and, from FY2005 through FY2007, the attrition rates among all the Tiers again fluctuated until FY2008, where it spiked.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Overall	19.58	18.65	18.29	22.27	23.95	25.15	22.64	19.94	33.87
Tier I	26.93	23.05	21.95	44.50	30.58	33.69	28.75	26.46	48.78
Tier II	26.67	21.60	27.47	64.10	39.56	33.19	30.49	32.08	58.06
Tier III	14.88	23.81	26.21	58.33	75.00	34.78	41.46	16.13	92.31
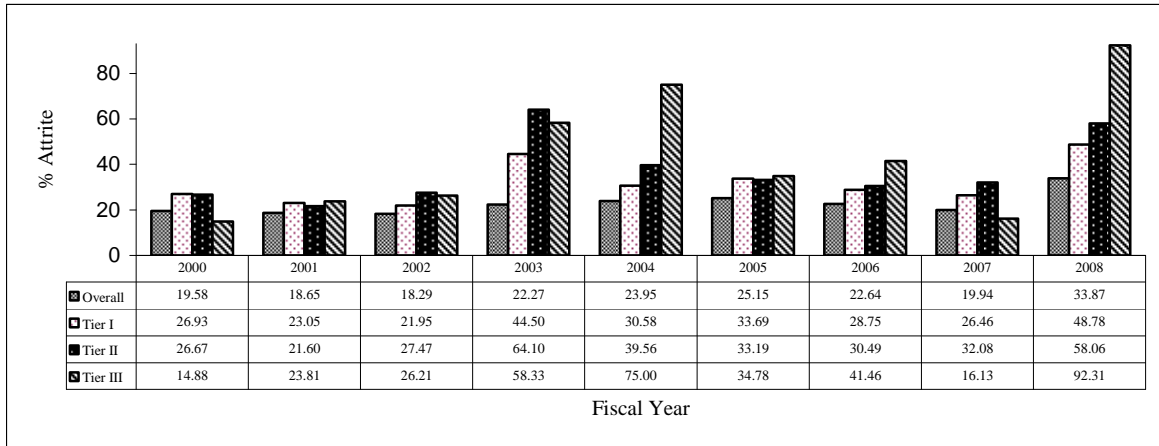
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 22.   Women and Overall Navy DEP Attrition Rates by Education Tier, FY2000 - FY2008

Normalized attrition rates divided by Tier, as a percentage of Tier group, are shown in Figure 23. The normalized data show that attrition rates in FY2008 are lower than indicated by the raw data presented in Figure 22.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Overall	19.73	19.91	19.05	19.67	26.90	25.64	22.69	22.83	24.06
Tier I	27.67	25.78	25.26	31.29	32.03	31.98	29.73	32.00	37.06
Tier II	28.47	29.57	31.21	27.38	27.19	28.70	37.76	48.34	40.79
Tier III	17.69	34.40	26.54	20.64	39.13	34.78	36.96	32.61	52.17
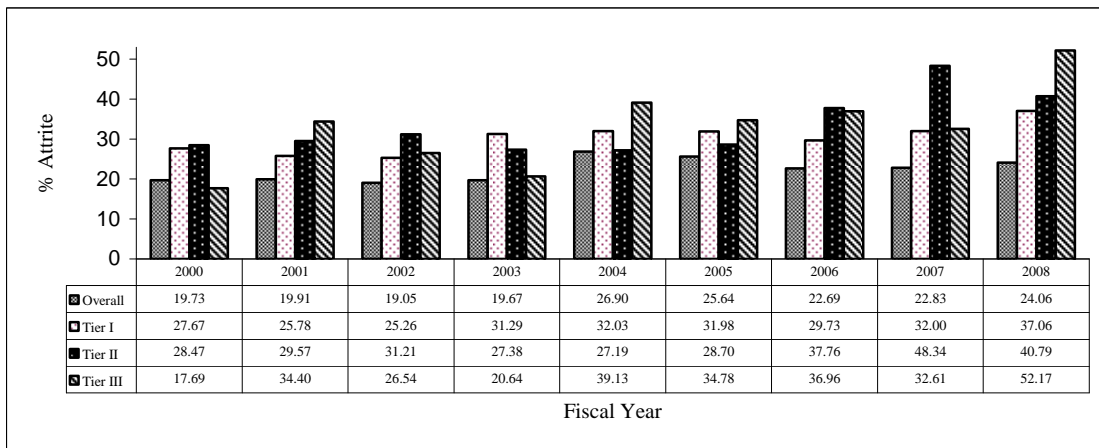
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 23.   Women and Overall Attrition Rates, Normalized, by Education Tier, FY2000 - FY2008

51

2.   Age Trends

The average age of women entering the DEP is shown in Figure 24. The data show a rise in the average age from 19.61 in FY2000 to 19.77 in FY2003. The average age then dropped to 19.64 in FY2004, and then steadily increased to 20.59 in FY2008. An upward trend in age is seen from FY2005 through FY2008.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
Avg. Age	19.61	19.69	19.70	19.77	19.64	19.70	19.90	20.29	20.59

Fiscal Year
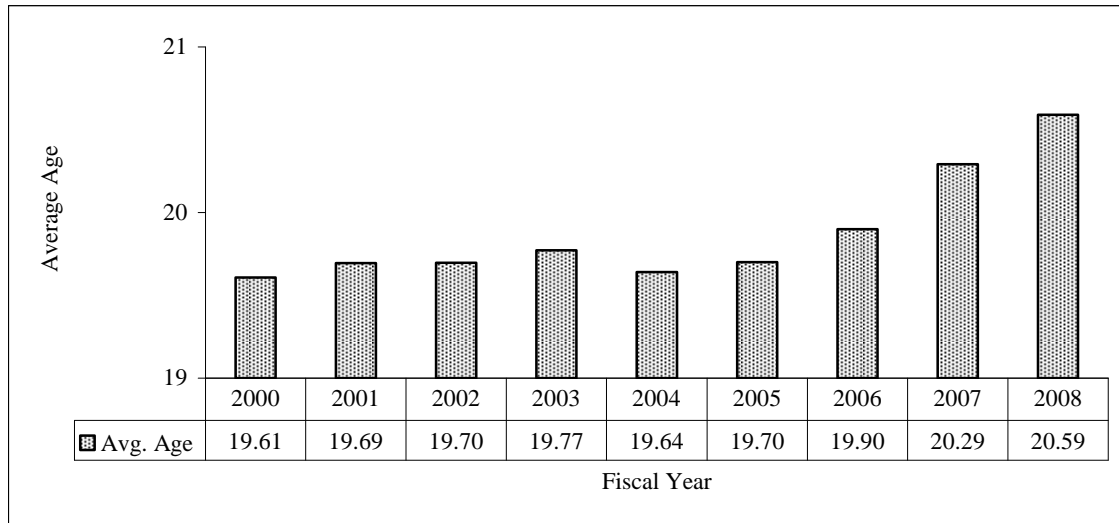
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 24.   Average Age of Women in Navy DEP, all Education Tiers, FY2000 - FY2008

Figure 25 displays the overall age distribution of women entering DEP. The data show that female accessions in the DEP, similar to men, are typically between 18 and 20 years of age. After age 18, the average age appears to drop off exponentially until age 35. In Figure 24 it was shown that the average age for all fiscal years was between 19.61 and 20.59; however, Figure 25 shows that the model age of women entering DEP is approximately 18.
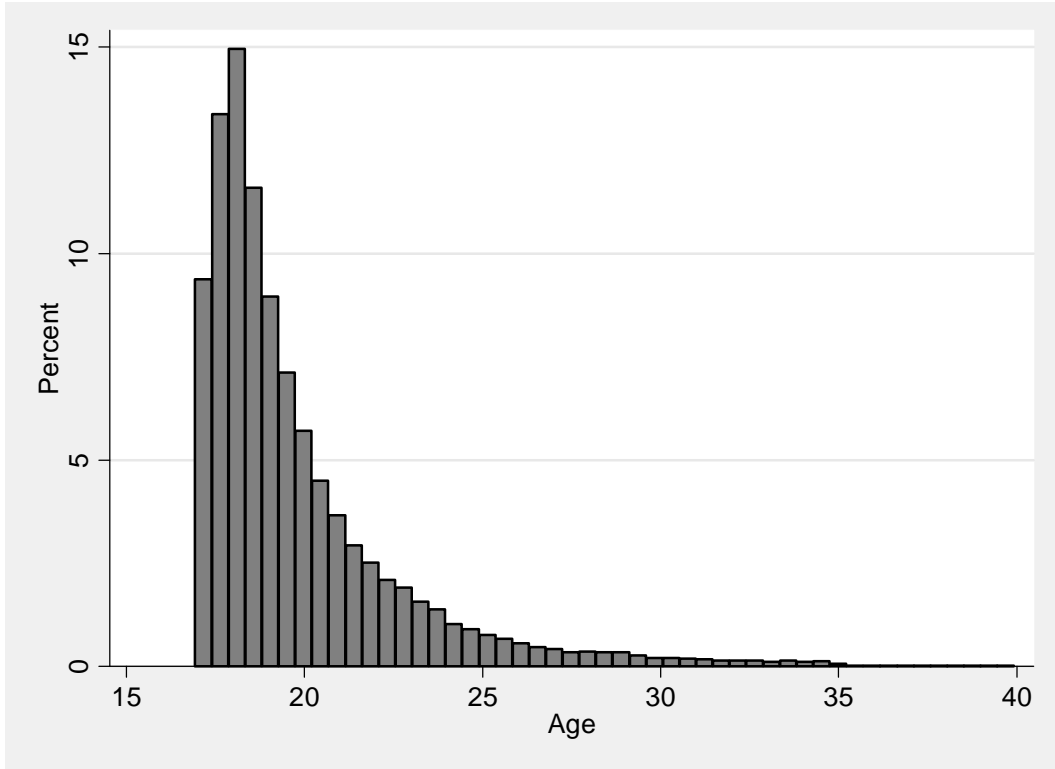
Figure 25.   Age Distribution of Women Entering the Navy DEP, FY2000 - FY2008

3.   AFQT Score Trends

The average AFQT score for women entering DEP, all Tiers, has risen since FY2000, as shown in Figure 26. From FY2000 through FY2002, the average AFQT score steadily increased from 56.28 to 57.96, and then spiked to 61.34 in FY2003. From FY2004 through FY2008, the average AFQT score remained at approximately 59.
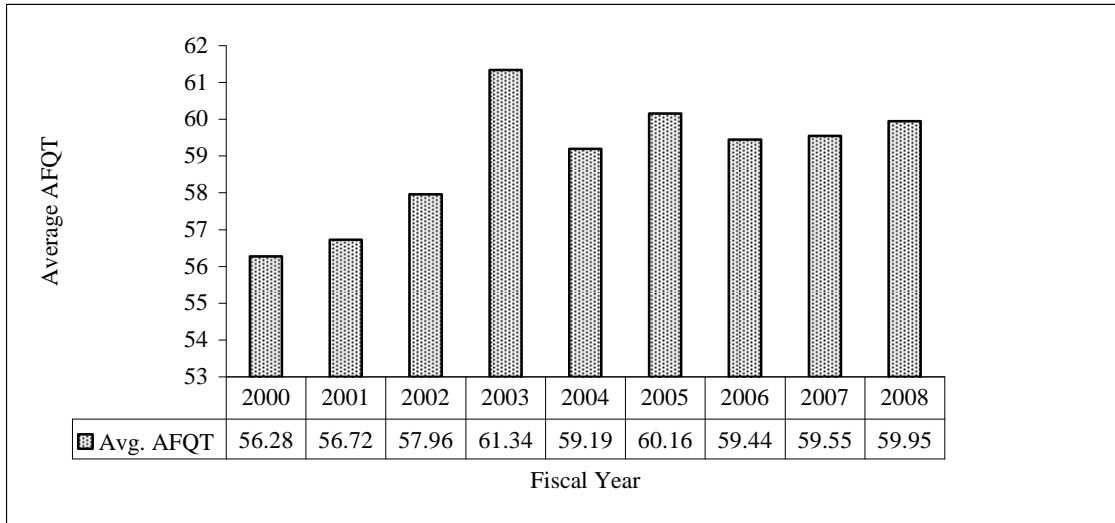
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 26.　　　Average AFQT Score for Women Entering the Navy DEP, FY2000 – FY2008

The average AFQT score for women in age groups 18 through 30 is shown in Figure 27. The data indicate that the average AFQT score for women increased with age from 56.22 at age 18 to a plateau of approximately 64 from ages 22 through 30 years.
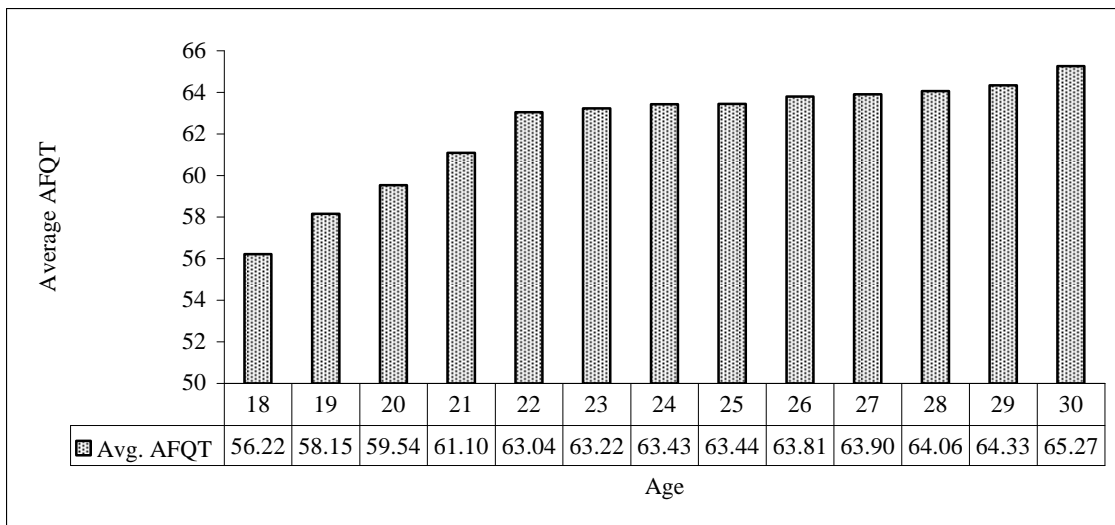
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 27.　　　Average AFQT Score by Age for Woman Entering the Navy DEP, Total FY2000 – FY2008

Figure 28 shows the distribution of AFQT scores from FY2000 through FY2008 for female DEP members. For FY2000 through FY2008, the data show that AFQT score frequency gradually declines from the mean as the scores approach 99. The overall data show that AFQT score frequency is greater for midrange scores than it is for the lower and higher ranges.
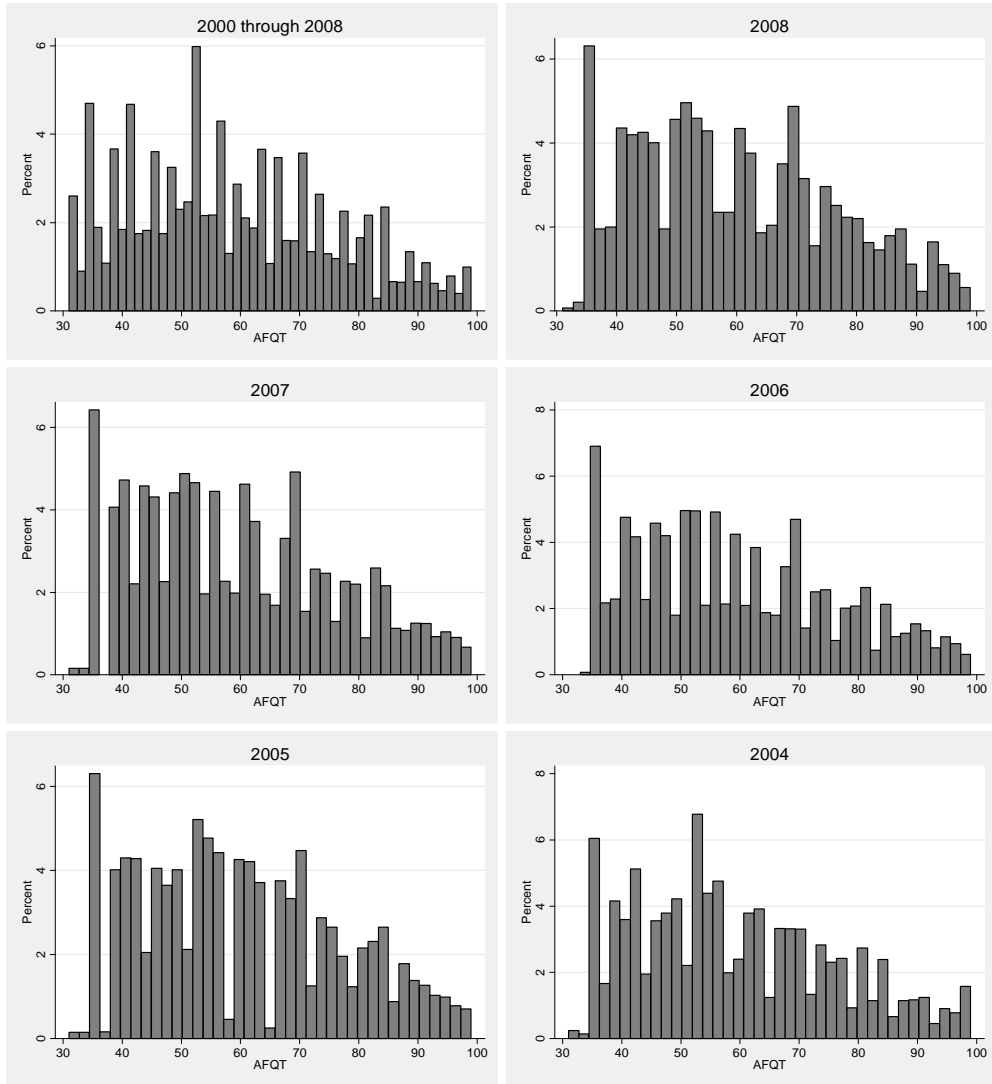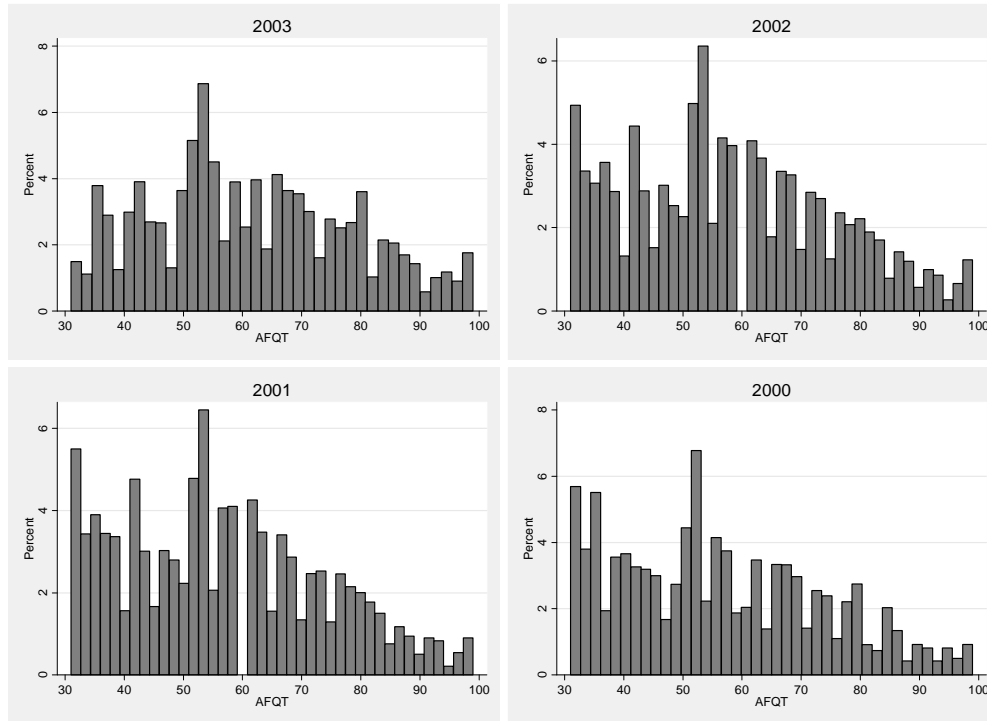
Figure 28.   AFQT Score Distribution for Women, FY2000 – FY2008

4.   Education Trends

Table 20 summarizes education credentials in Tier I for women. Women who possess a high school diploma make up the majority of the sample, followed by those classified as high school seniors and those classified as possessing a credential near completion. Individuals classified as Tier I on the basis of college credits make up a smaller but significant portion. Women holding a graduate education degree are reported but are not significant in number.

Table 20.   Number of Women Entering the Navy DEP, Tier I, by Education Credential, FY2000 – FY2008

FY		*Tier I*											
	HS. Senior	Cred. Near Comp.	HS. No Exit Exam	HS. Grad.	Adult Education Dipl.	One Sem. Coll.	Assc. Deg.	B.A. Deg.	M.A. Deg.	Prof. Nurse Dipl.	Post M.A. Deg.	First Prof. Deg.	Doctorate Deg.
2000	4,444	306	0	6,027	89	149	77	122	8	6	0	0	0
2001	4,843	297	5	6,559	100	190	57	165	6	2	1	0	0
2002	4,974	270	3	6,750	73	173	109	218	5	4	0	1	0
2003	2,846	106	4	4,297	29	101	67	229	5	1	1	0	0
2004	3,586	95	1	4,908	31	160	91	229	4	0	0	0	0
2005	3,292	50	5	4,464	30	114	74	209	10	1	0	0	0
2006	3,221	33	8	5,223	29	131	87	246	8	0	0	0	1
2007	3,299	57	10	6,454	23	190	149	322	5	0	0	1	0
2008	1,724	26	5	4,435	17	109	82	196	7	1	0	1	0
Total	32,229	1,240	41	49,117	421	1,317	793	1,936	58	15	2	3	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 21 summarizes Tier II and Tier III education credentials. Women possessing a GED make up a majority of the sample, followed by those classified as currently in high school and those who possess a home school diploma. The data show that the number of women possessing a GED has fluctuated from FY2000 through FY2008. Tier III women make up a significant portion of the total, but have seen a relatively large decrease in numbers from 121 in FY2000 to 26 in FY2008.

Table 21.   Number of Women Entering the Navy DEP, Tier II and Tier III, by
Education Credential, FY2000 – FY2008

	Tier II							Tier III
FY	Currently in HS.	GED	Occup. Prog. Cert.	Correspondence HS.	Cert. of Attendence	Home Study Dipl. (All AFQT)	Army Guard Challenge Prog.	No Credential
2000	38	295	0	0	13	33	11	121
2001	45	381	1	0	8	48	17	147
2002	46	309	3	3	11	25	18	103
2003	22	112	0	0	7	4	11	36
2004	41	106	0	4	3	11	17	24
2005	36	155	2	8	16	10	2	46
2006	33	265	2	8	7	12	1	41
2007	32	290	37	8	7	21	4	93
2008	8	130	20	5	0	20	3	26
Total	301	2,043	65	36	72	184	84	637

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 22 summarizes female DEP accessions by Tier for FY2000 through
FY2008. Tier I women accounted for 96.22 percent of total DEP accessions from
FY2000 through FY2008 with Tier II members accounting for 3.07 percent and Tier III
members accounting for 0.70 percent.

Table 22.   Number and Percentage Distribution of Men Entering Navy DEP by
Education Tier, FY2000 – FY2008

FY	Tier I	% Tier I	Tier II	% Tier II	Tier III	% Tier III	Total
2000	11,228	95.65	390	3.32	121	1.03	11,739
2001	12,225	94.97	500	3.88	147	1.14	12,872
2002	12,580	96.05	415	3.17	103	0.79	13,098
2003	7,686	97.56	156	1.98	36	0.46	7,878
2004	9,105	97.79	182	1.95	24	0.26	9,311
2005	8,249	96.77	229	2.69	46	0.54	8,524
2006	8,987	96.06	328	3.51	41	0.44	9,356
2007	10,510	95.53	399	3.63	93	0.85	11,002
2008	6,603	96.89	186	2.73	26	0.38	6,815
Total	87,173	96.22	2,785	3.07	637	0.70	90,595

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Tier I accession rates for women have fluctuated from FY2000 through FY2008, as shown in Figure 29. Tier I accession rates were the highest for FY2003 and FY2004 at approximately 97 percent. Accession rates then declined from FY2005 through FY2007, with a spike occurring in FY2008.

Tier II accession rates have also fluctuated as shown in Figure 30. The highest rates occurred from FY2000 through FY2002 and from, FY2006 through FY2008. These rates correspond to lower Tier I rates observed in Figure 29. The lowest Tier II accession rates occurred in FY2003 and FY2004, when the rates were approximately 2 percent.

Tier III accession rates for women have generally declined from FY2000 through FY2008, as shown in Figure 31. The highest rates occurred in FY2000 and FY2001, when Tier III accessions made up approximately 1.1 percent of total accessions. After FY2001, the data show a steep drop in Tier III accessions, with the lowest rate of 0.26 percent observed in FY2004. Higher Tier III rates also correspond with lower Tier I rates.

	2000	2001	2002	2003	2004	2005	2006	2007	2008
⊠ % Tier I	95.65	94.97	96.05	97.56	97.79	96.77	96.06	95.53	96.89

Fiscal Year
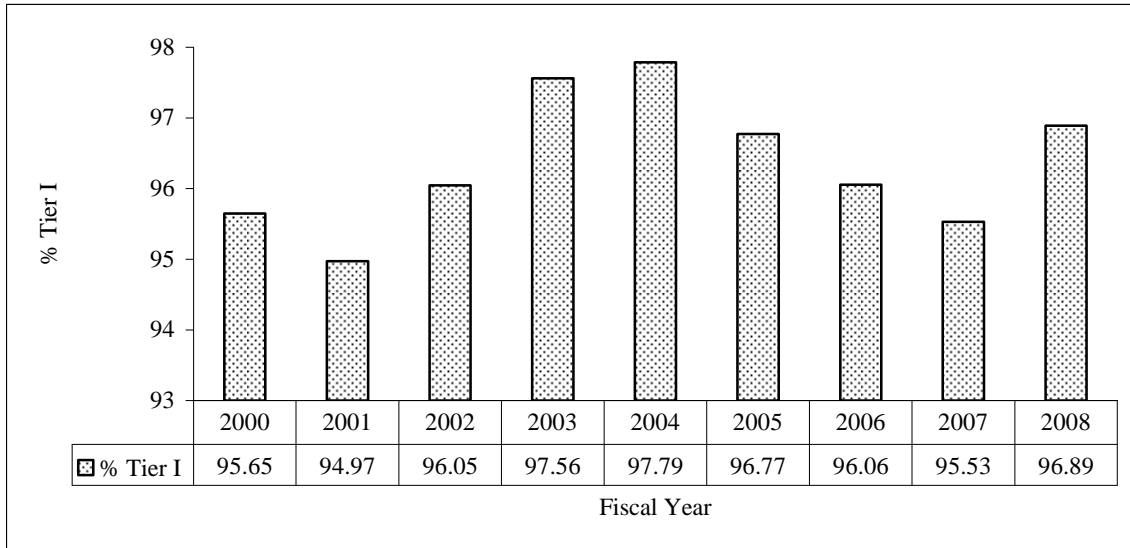
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 29. Percentage of Women Entering Navy DEP From Education Tier I, FY2000 – FY2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
⊠ % Tier II	3.32	3.88	3.17	1.98	1.95	2.69	3.51	3.63	2.73

Fiscal Year
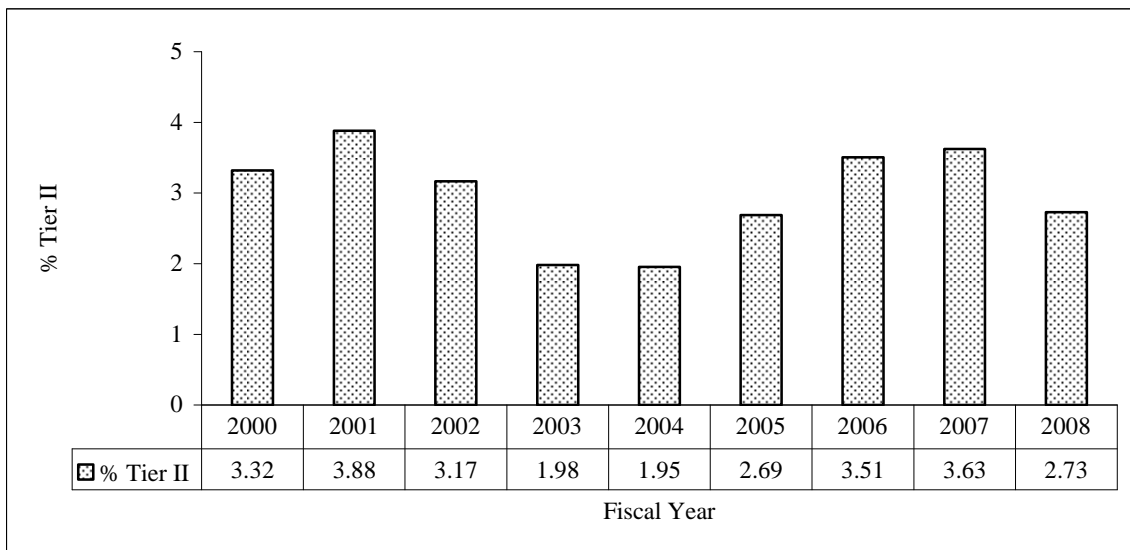
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 30. Percentage of Women Entering Navy DEP From Education Tier II, FY2000 – FY2008

	2000	2001	2002	2003	2004	2005	2006	2007	2008
⊠ % Tier III	1.03	1.14	0.79	0.46	0.26	0.54	0.44	0.85	0.38

Fiscal Year
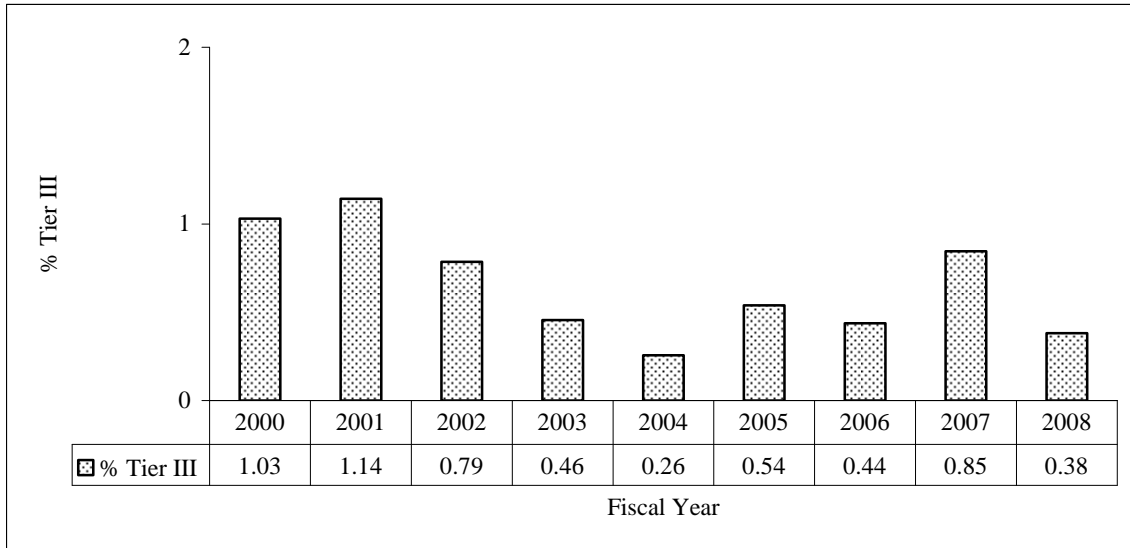
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 31.　　　Percentage of Women Entering Navy DEP From Education Tier III, FY2000 – FY2008

5.　　Tier I Attrition Regression Analysis

The probability of female DEP attrition was analyzed using a (MLE) probit model. Table 23 presents the variables and descriptive statistics of the Tier I model with d_att, the dependent variable, and the primary variables of interest afqt and age. The model includes an interaction term, afqt_age, to capture the effect of afqt dependent on age of individual. MLE were first generated using the probit model to gain an understanding of the magnitude and significance of the variables included in the model. Marginal effects for each of the variables, and probabilities for attrition, were then calculated for specific AFQT scores from 31 to 99 within age groups 18, 19, 20, 21, 25, and 30. Individuals younger than 18, or older than 30, were not examined because these age groups did not have enough observations to produce meaningful results.

Table 23.   Tier I Model and Descriptive Statistics for Women

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	= 1 if true, 0 false	91044	0.2875	0.4526	0	1
afqt	AFQT percentile	91044	58.48	17.11	31	99
age	Age in DEP	91044	19.79	2.93	16.93	39.92
afqt_age	Age afqt interaction term	91044	55.56	113.43	-69.13	1439.34
tid	Time in DEP	89648	177.31	125.61	1	551
tid2	Time in DEP Squared	89648	15777.44	18418.05	25	139876
I_hsd	= 1 if true, 0 false	91044	0.5548	0.4970	0	1
I_hsnx	= 1 if true, 0 false	91044	0.0005	0.0212	0	1
I_hss	= 1 if true, 0 false	91044	0.3783	0.4850	0	1
I_cnc	= 1 if true, 0 false	91044	0.0150	0.1217	0	1
I_aed	= 1 if true, 0 false	91044	0.0050	0.0702	0	1
I_semcol	= 1 if true, 0 false	91044	0.0148	0.1208	0	1
I_asc_deg	= 1 if true, 0 false	91044	0.0091	0.0948	0	1
I_ba	= 1 if true, 0 false	91044	0.0218	0.1460	0	1
I_pnd	= 1 if true, 0 false	91044	0.0002	0.0128	0	1
I_grded	= 1 if true, 0 false	91044	0.0007	0.0267	0	1
omxwt	(weight - max weight allowed)	90591	-17.19	18.13	-78	66
youth	= 1 if true, 0 false	91044	0.0297	0.1698	0	1
metro	= 1 if true, 0 false	91044	0.8059	0.3955	0	1
mar	= 1 if true, 0 false	91044	0.0612	0.2397	0	1
deps	Number of dependents	90947	0.1400	0.4971	0	4
asian_pi	= 1 if true, 0 false	91044	0.0396	0.1950	0	1
black	= 1 if true, 0 false	91044	0.2266	0.4186	0	1
hisp	= 1 if true, 0 false	91044	0.1595	0.3661	0	1
white	= 1 if true, 0 false	91044	0.5001	0.5000	0	1
race_oth	= 1 if true, 0 false	91044	0.0742	0.2621	0	1
hor_mep	Distance from HOR to MEPS	90593	82.02	197.97	0	8357
rtc_hor	Distance from HOR to RTC	90593	907.22	577.45	0	8092
fy1999	= 1 if true, 0 false	91044	0.0425	0.2018	0	1
fy2000	= 1 if true, 0 false	91044	0.1233	0.3288	0	1
fy2001	= 1 if true, 0 false	91044	0.1343	0.3410	0	1
fy2002	= 1 if true, 0 false	91044	0.1382	0.3451	0	1
fy2003	= 1 if true, 0 false	91044	0.0844	0.2780	0	1
fy2004	= 1 if true, 0 false	91044	0.1000	0.3000	0	1
fy2005	= 1 if true, 0 false	91044	0.0906	0.2870	0	1
fy2006	= 1 if true, 0 false	91044	0.0987	0.2983	0	1
fy2007	= 1 if true, 0 false	91044	0.1154	0.3196	0	1
fy2008	= 1 if true, 0 false	91044	0.0725	0.2594	0	1
mep1 - mep64	= 1 if true, 0 false	91044*	*	*	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
* Complete Table in Appendix B.

Probit regression results are presented in Table 24. The overall goodness of fit, pseudo R-squared, value is 0.1034. The primary variables of interest, afqt and age, are both statistically significant with p-values < 0.0200. The data show that AFQT has a negative effect on probability of attrition, while age has a positive effect on probability of attrition. The interaction term, afqt_age, is not statistically significant with a p-value of 0.5840, however age, afqt, and afqt_age are jointly significant (Prob $> chi2 = 0.0000$).

The variables included to control for the time an individual spent in DEP, tid and tid2, are both statistically significant at the 1 percent level and indicate that the length of time spent in DEP has a positive effect on DEP attrition. The education credential variables vary in magnitude and significance. The data show that variable high school senior has a negative effect on attrition while credential near completion has a positive effect on DEP attrition. Both variables are statistically significant at the 1 percent level. The only statistically significant college credential variable is Bachelorette degree, which the data show has a positive effect on attrition. All fiscal year dummy variables are statistically significant at the 1 percent level indicating that there are structural differences among the different fiscal years. The variables mep1 through mep64 vary individually in significance and magnitude, but are jointly significant at the 1 percent level.

Table 24.   Female Tier I Probit Regression Results

Variable	Coefficient	Std. Error	P-Value
afqt	-0.0016	0.0003	0.0000
age	0.0055	0.0023	0.0160
afqt_age	0.0001	0.0001	0.5840
tid	0.0034	0.0000	0.0000
tid2	0.0000	0.0000	0.0000
I_hss	-0.0564	0.0124	0.0000
I_cnc	0.3178	0.0372	0.0000
I_aed	0.0174	0.0718	0.8080
I_semcol	0.0207	0.0407	0.6110
I_asc_deg	-0.0084	0.0517	0.8710
I_pnd	0.0062	0.3955	0.9870
I_hsnx	-0.3731	0.2676	0.1630
I_ba	0.0681	0.0353	0.0540
I_grded	0.2198	0.1750	0.2090
omxwt	-0.0024	0.0003	0.0000
youth	-1.5770	0.0589	0.0000
metro	0.0014	0.0130	0.9160
mar	-0.0927	0.0316	0.0030
deps	-0.0083	0.0161	0.6090
asian_pi	-0.1939	0.0266	0.0000
black	-0.2038	0.0137	0.0000
hisp	-0.1405	0.0154	0.0000
race_oth	0.0098	0.0186	0.5980
hor_mep	-0.0001	0.0000	0.0200
rtc_hor	0.0000	0.0000	0.8480
fy2000	-0.1943	0.0259	0.0000
fy2001	-0.2095	0.0256	0.0000
fy2002	-0.1537	0.0249	0.0000
fy2003	-0.2260	0.0268	0.0000
fy2004	-0.1861	0.0261	0.0000
fy2005	-0.1263	0.0265	0.0000

Variable	Coefficient	Std. Error	P-Value
fy2006	-0.1414	0.0264	0.0000
fy2007	-0.1184	0.0259	0.0000
fy2008	-0.0819	0.0286	0.0040
mep1-mep64	*	*	*
Intercept	-0.9743	0.1424	0.0000

Pseudo R2	Number of obs.	LR chi2(98)	Prob > chi2
0.1034	88,681	10,826	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix B.
Note: Base individual is a white female with AFQT 58, Age 20, and entered DEP in FY1999 who possesses a high school diploma. Dependent variable is DEP attrite.

Marginal effects are presented in Table 25 and were calculated at the specified values of independent variables listed in the "x" column. Consistent with the results reported in Table 24, AFQT score has a negative effect on attrition and age has a positive effect on attrition, however the marginal effect coefficients can be interpreted. A one-point increase in AFQT score, for an individual who is 20 years old and scored 58 on the AFQT, will decrease probability of attrition by 0.0006; and an increase in age by one year, for the same individual, will increase probability of attrition by 0.0021, all else equal. This specific individual has a 0.3882 probability of attrition.

Table 25.   Female Tier I Probit Regression Results, Marginal Effects

Variable	dy/dx	x	Std. Error	p-Value
afqt	-0.0006	58	0.0001	0.0000
age	0.0021	20	0.0009	0.0160
afqt_age	0.0000	6.76	0.0000	0.5840
tid	0.0013	177	0.0000	0.0000
tid2	0.0000	15777	0.0000	0.0000
I_hss	-0.0214	0	0.0047	0.0000
I_cnc	0.1253	0	0.0149	0.0000
I_aed	0.0067	0	0.0277	0.8080
I_semcol	0.0079	0	0.0157	0.6110
I_asc_deg	-0.0032	0	0.0198	0.8710
I_pnd	0.0024	0	0.1518	0.9870
I_hsnx	-0.1326	0	0.0863	0.1630
I_ba	0.0263	0	0.0138	0.0540
I_grded	0.0862	0	0.0697	0.2090
omxwt	-0.0009	-20.30	0.0001	0.0000
youth	-0.3568	0	0.0347	0.0000
metro	0.0005	0	0.0050	0.9160
mar	-0.0350	0	0.0118	0.0030
deps	-0.0032	0	0.0062	0.6090
asian_pi	-0.0718	0	0.0099	0.0000
black	-0.0754	0	0.0059	0.0000
hisp	-0.0526	0	0.0060	0.0000
race_oth	0.0038	0	0.0071	0.5980

Variable	dy/dx	x	Std. Error	p-Value
hor_mep	0.0000	78.30	0.0000	0.0200
rtc_hor	0.0000	888.30	0.0000	0.8480
fy2000	-0.0720	0	0.0102	0.0000
fy2001	-0.0774	0	0.0101	0.0000
fy2002	-0.0574	0	0.0097	0.0000
fy2003	-0.0832	0	0.0105	0.0000
fy2004	-0.0691	0	0.0102	0.0000
fy2005	-0.0474	0	0.0102	0.0000
fy2006	-0.0529	0	0.0102	0.0000
fy2007	-0.0445	0	0.0099	0.0000
fy2008	-0.0310	0	0.0109	0.0040
mep1-mep64	*	*	*	*

Prob. at (X bar)				
0.2521				
Prob. at (X)				
0.3819*				
Pseudo R2	Number of obs.		LR chi2(98)	Prob > chi2
0.1034	88,681		10,825.5	0.0000

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
*Complete Table in Appendix B. Estimated with LPM including all Education Tiers.
Note: Base individual is a white female with AFQT 58, Age 20, and entered DEP in FY1999 who possesses a high school diploma. Dependent variable is DEP attrite.

Similar probit models, as presented in Table 25, were estimated for each level of AFQT, 31 through 99, and for different age groups to construct Figure 32. The change in probability of DEP attrition, with an increase in AFQT score, is not the same for women of different ages, as shown by Figure 32. For all women the probability of attrition decreases as AFQT score increases. The rate at which probability of attrition decreases is greater and steeper for younger woman than it is for older women. By age 30, the probability of attrition is decreasing at a much lower rate than with younger women. Ages 22 to 24 and 26 to 29 are omitted because of insufficient data, with the ages presented, to show the relationship between AFQT and age.
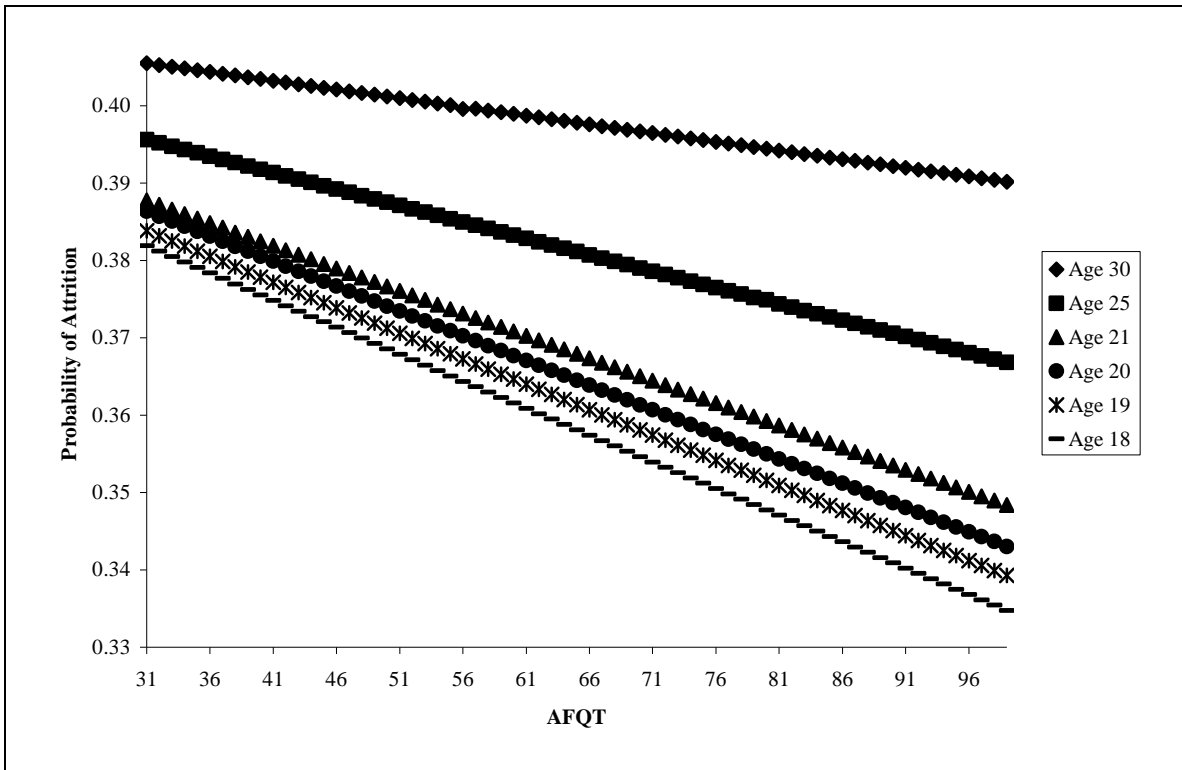
Figure 32.   Female Tier I Probability of Attrition by Age and AFQT

6.   Tier II Attrition Analysis

Table 26 presents the variables and descriptive statistics of the Tier II model with d_att, the dependent variable, and the primary variables of interest afqt and age. Further regression analysis was not conducted with the Tier II or Tier III model because the primary variables of interest were not significant or jointly significant.

Table 26.   Female Tier II Model and Descriptive Statistics

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	= 1 if true, 0 false	2960	0.3074	0.4615	0	1
afqt	AFQT percentile	2960	60.65	14.62	31	99
age	Age in DEP	2960	20.46	3.09	16.93	39.32
afqt_age	Age afqt interaction term	2960	76.20	109.73	-64.90	907.12
tid	Time in DEP	2915	150.89	118.42	1	551
tid2	Time in DEP Squared	2915	14019.64	22674.62	0	160000
II_ged	= 1 if true, 0 false	2960	0.7571	0.4289	0	1
II_inhs	= 1 if true, 0 false	2960	0.1118	0.3152	0	1
II_opc	= 1 if true, 0 false	2960	0.0220	0.1466	0	1
II_csd	= 1 if true, 0 false	2960	0.0122	0.1096	0	1
II_coa	= 1 if true, 0 false	2960	0.0260	0.1592	0	1
II_hsd	= 1 if true, 0 false	2960	0.0709	0.2568	0	1
omxwt	(weight - max weight allowed)	2948	-17.76	18.27	-66	42
youth	= 1 if true, 0 false	2960	0.0189	0.1363	0	1
metro	= 1 if true, 0 false	2960	0.8122	0.3906	0	1
mar	= 1 if true, 0 false	2960	0.1321	0.3387	0	1
deps	Number of dependents	2955	0.3445	0.7664	0	4
asian_pi	= 1 if true, 0 false	2960	0.0294	0.1689	0	1
black	= 1 if true, 0 false	2960	0.1483	0.3555	0	1
hisp	= 1 if true, 0 false	2960	0.1257	0.3315	0	1
white	= 1 if true, 0 false	2960	0.6149	0.4867	0	1
race_oth	= 1 if true, 0 false	2960	0.0818	0.2740	0	1
hor_mep	Distance from HOR to MEPS	2940	92.30	221.83	0	4965.35
rtc_hor	Distance from HOR to RTC	2940	869.82	539.02	0	4240.97
fy1999	= 1 if true, 0 false	2960	0.0591	0.2359	0	1
fy2000	= 1 if true, 0 false	2960	0.1318	0.3383	0	1
fy2001	= 1 if true, 0 false	2960	0.1689	0.3747	0	1
fy2002	= 1 if true, 0 false	2960	0.1402	0.3473	0	1
fy2003	= 1 if true, 0 false	2960	0.0527	0.2235	0	1
fy2004	= 1 if true, 0 false	2960	0.0615	0.2403	0	1
fy2005	= 1 if true, 0 false	2960	0.0774	0.2672	0	1
fy2006	= 1 if true, 0 false	2960	0.1108	0.3140	0	1
fy2007	= 1 if true, 0 false	2960	0.1348	0.3416	0	1
fy2008	= 1 if true, 0 false	2960	0.0628	0.2427	0	1
mep1 - mep64	= 1 if true, 0 false	349466*	*	*	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

* Complete Table in Appendix B.

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V.   LINEAR PROBABILITY MODEL (LPM) OF DEP ATTRITION USING BINARY VARIABLES

A.   DATA

The Defense Manpower Data Center (DMDC) provided the data used in this analysis. The data are similar to those described in Chapter III, but are comprised of both men and women.

B.   METHODOLOGY

In this section, LPM regression analysis was used to estimate the effect of AFQT score, age, and other variables on DEP attrition. Robust standard errors were estimated to control for heteroskedasticity in the sample. In Chapters III and IV, male and female DEP members were analyzed separately by gender and education Tier to estimate the effect of age and AFQT on DEP attrition within their respective Tiers. This chapter also analyzed male and female DEP members separately, but combined education Tiers in the regression analysis to estimate the effect of age and AFQT on attrition for the male or female group as a whole. Lastly, a LPM regression was estimated with both male and female DEP members combined to determine the difference in probability of attrition between male and female members.

C.   VARIABLES

The variables analyzed in this chapter are all binary and are presented in Table 27. The primary variables of interest are AFQT percentile score and age of individual while a member of DEP. AFQT score was separated into AFQT categories, and age was separated into groups spanning three years for each group. The interaction variable afqt_age was not included in this model, leaving the effect of age and AFQT score separate.

D. RESULTS

The following section summarizes the male LPM attrition analysis with respect to AFQT score, age, education, and other demographic factors.

1. Male LPM Regression Analysis

Presented in Table 27 are the variable descriptive statistics for the 380,073 male observations in the sample. The data show an overall attrition rate for men of 19.21 percent. Most men fall within AFQT category II at 36.14 percent, followed by category IIIB at 31.41 percent. The most populous age category is the 18-to 20-year-olds, which make up 54.12 percent of the sample, followed by those under 18 years of age at 20.6 percent.

Table 27.   Summary of LPM Variables for Men

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	DEP Attrite	= 1 if true, 0 false	380073	0.1921	0.3939	0	1
I	afqt>=93 & afqt <=99	= 1 if true, 0 false	380073	0.0598	0.2371	0	1
II	afqt>=65 & afqt<=92	= 1 if true, 0 false	380073	0.3614	0.4804	0	1
IIIA	afqt>=50 & afqt<=64	= 1 if true, 0 false	380073	0.2647	0.4412	0	1
IIIB	afqt>=31 & afqt <=49	= 1 if true, 0 false	380073	0.3141	0.4642	0	1
und_18	Under age 18	= 1 if true, 0 false	380073	0.2063	0.4046	0	1
age18_20	Age 18 through 20	= 1 if true, 0 false	380073	0.5412	0.4983	0	1
age21_23	Age 21 through 23	= 1 if true, 0 false	380073	0.1580	0.3647	0	1
age24_26	Age 24 through 26	= 1 if true, 0 false	380073	0.0550	0.2279	0	1
age27_29	Age 27 through 29	= 1 if true, 0 false	380073	0.0226	0.1488	0	1
ovr_30	Age 30 +	= 1 if true, 0 false	380073	0.0169	0.1290	0	1
ave_tid	Spent longer than average time in DEP	= 1 if true, 0 false	380073	0.4535	0.4978	0	1
tierI	Possesses Tier I credentials	= 1 if true, 0 false	380073	0.9195	0.2721	0	1
tierII	Possesses Tier II credentials	= 1 if true, 0 false	380073	0.0585	0.2347	0	1
tierIII	Possesses Tier III credentials	= 1 if true, 0 false	380073	0.0220	0.1468	0	1
I_hsd	Possesses High School Diploma	= 1 if true, 0 false	380073	0.5155	0.4998	0	1
I_hsnx	Did not pass state exit exam	= 1 if true, 0 false	380073	0.3344	0.4718	0	1
I_hss	High School Senior	= 1 if true, 0 false	380073	0.0245	0.1546	0	1
I_cnc	Credential Near Completion	= 1 if true, 0 false	380073	0.0056	0.0744	0	1
I_aed	Adult Education Diploma	= 1 if true, 0 false	380073	0.0141	0.1178	0	1
I_semcol	One semester of college	= 1 if true, 0 false	380073	0.0072	0.0843	0	1
I_asc_deg	Associate Degree	= 1 if true, 0 false	380073	0.0001	0.0090	0	1

70

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
I_ba	Bachelorette Degree	= 1 if true, 0 false	380073	0.0005	0.0217	0	1
I_pnd	Professional Nursing Diploma	= 1 if true, 0 false	380073	0.0172	0.1300	0	1
I_grded	Graduate Degree	= 1 if true, 0 false	380073	0.0005	0.0228	0	1
II_ged	Possesses GED	= 1 if true, 0 false	380073	0.0038	0.0612	0	1
II_inhs	In High School	= 1 if true, 0 false	380073	0.0495	0.2170	0	1
II_opc	Occupational Program Certificate	= 1 if true, 0 false	380073	0.0009	0.0306	0	1
II_csd	Correspondence School Diploma	= 1 if true, 0 false	380073	0.0004	0.0207	0	1
II_coa	Certificate of Attendance	= 1 if true, 0 false	380073	0.0009	0.0297	0	1
II_hsd	Home School Diploma	= 1 if true, 0 false	380073	0.0030	0.0543	0	1
III_lths	No credential	= 1 if true, 0 false	380073	0.0220	0.1468	0	1
ave_mxwt	Over average max weight	= 1 if true, 0 false	380073	0.4826	0.4997	0	1
youth	Participated in youth program	= 1 if true, 0 false	380073	0.0266	0.1610	0	1
metro	Lived in a metropolitan area	= 1 if true, 0 false	380073	0.8102	0.3922	0	1
mar	Married	= 1 if true, 0 false	380073	0.0529	0.2238	0	1
dep	Have one or more dependents	= 1 if true, 0 false	380073	0.0856	0.2797	0	1
asian_pi	Asian/Pacific Islander	= 1 if true, 0 false	380073	0.0410	0.1983	0	1
black	Black	= 1 if true, 0 false	380073	0.1694	0.3751	0	1
hisp	Hispanic	= 1 if true, 0 false	380073	0.1410	0.3480	0	1
white	White	= 1 if true, 0 false	380073	0.5826	0.4931	0	1
race_oth	Race Other	= 1 if true, 0 false	380073	0.0660	0.2483	0	1
ave_mep	Lived further than average distance to MEPS	= 1 if true, 0 false	380073	0.3254	0.4685	0	1
ave_rtc	Lived further than avg. distance to RTC	= 1 if true, 0 false	380073	0.3912	0.4880	0	1
fy1999	Entered DEP in FY1999	= 1 if true, 0 false	380073	0.0309	0.1730	0	1
fy2000	Entered DEP in FY2000	= 1 if true, 0 false	380073	0.1261	0.3320	0	1
fy2001	Entered DEP in FY2001	= 1 if true, 0 false	380073	0.1330	0.3396	0	1
fy2002	Entered DEP in FY2002	= 1 if true, 0 false	380073	0.1287	0.3349	0	1
fy2003	Entered DEP in FY2003	= 1 if true, 0 false	380073	0.1180	0.3226	0	1
fy2004	Entered DEP in FY2004	= 1 if true, 0 false	380073	0.1062	0.3080	0	1
fy2005	Entered DEP in FY2005	= 1 if true, 0 false	380073	0.0962	0.2949	0	1
fy2006	Entered DEP in FY2006	= 1 if true, 0 false	380073	0.0920	0.2890	0	1
fy2007	Entered DEP in FY2007	= 1 if true, 0 false	380073	0.1042	0.3055	0	1
fy2008	Entered DEP in FY2008	= 1 if true, 0 false	380073	0.0647	0.2460	0	1
male	Male DEP member	= 1 if true, 0 false	380073	1	0	0	1
mep1 - mep65	MEPS where entered DEP	= 1 if true, 0 false	380073	-	-	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 28 presents the male LPM regression results for all Tiers combined and individual education credentials grouped into respective Tiers. The R-squared value is 0.0471, and the probability of attrition for the base individual is 0.2520. The data show that the probability of attrition decreases by 0.0403 for category I men and decreases by 0.0235 for category II men. The probability of attrition for category IIIB men increases by 0.0037. Category I and II variables are both statistically significant at the 1 percent level, while category IIIB is significant at the 5 percent level. All age variables are significant at the 1 percent level. The under 18 variable decreases the probability of attrition by 0.0457, while all other age variables increase the probability of attrition as the age of the individual increases. The data show that the probability of attrition for Tier II individuals increases by 0.0160 and the probability of attrition for Tier III individuals increases by 0.0279. Both Tier II and Tier III variables are statistically significant at the 1 percent level.

Table 28.   Binary LPM, Tiers, Regression Results for Men

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0403	0.0028	0.0000
II	-0.0235	0.0016	0.0000
IIIB	0.0037	0.0017	0.0310
und_18	-0.0457	0.0019	0.0000
age21_23	0.0155	0.0018	0.0000
age24_26	0.0304	0.0028	0.0000
age27_29	0.0359	0.0043	0.0000
ovr_30	0.0447	0.0049	0.0000
ave_tid	0.1602	0.0016	0.0000
tierII	0.0160	0.0027	0.0000
tierIII	0.0279	0.0044	0.0000
ave_mxwt	-0.0190	0.0013	0.0000
youth	-0.1663	0.0023	0.0000
metro	0.0013	0.0018	0.4680
mar	-0.0693	0.0039	0.0000
dep	0.0174	0.0034	0.0000
asian_pi	-0.0388	0.0032	0.0000
black	-0.0141	0.0019	0.0000
hisp	-0.0130	0.0021	0.0000
race_oth	0.0087	0.0027	0.0010
ave_mep	-0.0028	0.0015	0.0620
ave_rtc	0.0035	0.0040	0.3760
fy2000	-0.0934	0.0045	0.0000

Variable	Coefficient	Robust Std. Error	p-Value
fy2001	-0.0809	0.0045	0.0000
fy2002	-0.0890	0.0045	0.0000
fy2003	-0.1009	0.0046	0.0000
fy2004	-0.0895	0.0047	0.0000
fy2005	-0.0865	0.0047	0.0000
fy2006	-0.0868	0.0047	0.0000
fy2007	-0.0898	0.0046	0.0000
fy2008	-0.0886	0.0048	0.0000
Intercept	0.2520	0.0135	0.0000

R-squared	Number of obs.	Prob > F	
0.0471	380,073	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is a Tier I white male with category IIIA AFQT who entered DEP in 1999.

Table 29 presents the male LPM regression results for all Tiers broken down by each education credential. The R-squared value is 0.0495 and the probability of attrition for the base individual is 0.2391. The data show that the probability of attrition decreases by 0.0380 for category I men and decreases by 0.0216 for category II men.   The probability attrition for category IIIB men increases by 0.0031.   Category I and II variables are both statistically significant at the 1 percent level, while category IIIB is significant at the 10 percent level. All age variables are significant at the 1 percent level. The under-18 variable decreases the probability of attrition by 0.0532, while all other age variables increase the probability of attrition as the age of the individual increases. The data show that the probability of attrition for individuals with a GED increases by 0.0292 and the probability at attrition for individuals with no education credential increases by 0.0375. All education variables are statistically significant at the 10 percent level, with the exception of I_aed, I_pnd, I_hsnx, II_opc, II_csd, and II_coa.

Table 29.   Binary LPM, Education Codes, Regression Results for Men

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0380	0.0028	0.0000
II	-0.0216	0.0016	0.0000
IIIB	0.0031	0.0017	0.0700
und_18	-0.0532	0.0021	0.0000
age21_23	0.0186	0.0018	0.0000
age24_26	0.0318	0.0029	0.0000
age27_29	0.0371	0.0043	0.0000
ovr_30	0.0451	0.0050	0.0000

Variable	Coefficient	Robust Std. Error	p-Value
ave_tid	0.1558	0.0016	0.0000
I_hss	0.0178	0.0019	0.0000
I_cnc	0.1208	0.0048	0.0000
I_aed	0.0040	0.0077	0.6090
I_semcol	0.0137	0.0052	0.0080
I_asc_deg	-0.0213	0.0068	0.0020
I_pnd	0.0440	0.0741	0.5530
I_hsnx	-0.0016	0.0283	0.9550
I_ba	0.0290	0.0051	0.0000
I_grded	0.0517	0.0275	0.0600
II_inhs	0.0251	0.0110	0.0230
II_ged	0.0292	0.0030	0.0000
II_opc	-0.0093	0.0181	0.6060
II_csd	-0.0131	0.0281	0.6410
II_coa	0.0304	0.0223	0.1730
II_hsd	-0.0280	0.0098	0.0040
III_lths	0.0375	0.0044	0.0000
ave_mxwt	-0.0182	0.0013	0.0000
youth	-0.1661	0.0023	0.0000
metro	0.0010	0.0018	0.5690
mar	-0.0688	0.0039	0.0000
dep	0.0168	0.0034	0.0000
asian_pi	-0.0376	0.0032	0.0000
black	-0.0135	0.0019	0.0000
hisp	-0.0130	0.0021	0.0000
race_oth	0.0085	0.0027	0.0010
ave_mep	-0.0033	0.0015	0.0300
ave_rtc	0.0033	0.0040	0.4150
fy2000	-0.0909	0.0045	0.0000
fy2001	-0.0782	0.0045	0.0000
fy2002	-0.0854	0.0045	0.0000
fy2003	-0.0949	0.0046	0.0000
fy2004	-0.0829	0.0047	0.0000
fy2005	-0.0790	0.0047	0.0000
fy2006	-0.0789	0.0047	0.0000
fy2007	-0.0816	0.0046	0.0000
fy2008	-0.0803	0.0048	0.0000
Intercept	0.2391	0.0135	0.0000

R-squared	Number of obs.	Prob > F	
0.0495	380,073	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is a high school diploma graduate white male with category IIIA AFQT who entered DEP in 1999.

In Chapters III and IV, the probability of attrition as a function of AFQT score and age was calculated for each 1 point increase in AFQT score and for specified ages. Figures 33 through 35 show similar calculations for the probabilities of attrition as in chapters III and IV, but for the LPM, and instead use AFQT categories and age groups. The data show that for men, the probability of attrition increases with age, with the

greatest increase between the less-than-18 group and 18-to-20 groups. After that, the difference in probability of attrition with age declines as the groups increase in age. The data also show that the probability of attrition decreases as AFQT category increases. The decrease in the probability of attrition with an increase in AFQT category is the smallest between category IIIB and category IIIA. From category IIIA to category II, the decrease in probability of attrition with increase in AFQT category is the greatest. Since the probability curves were calculated from the LPM, there is no variation in the slopes between the different age groups and Tier classifications, as shown in Figures 33 through 35. The same difference in probability caused by age is shown in all figures with the additional increase in probabilities caused by the Tier group of the individual.
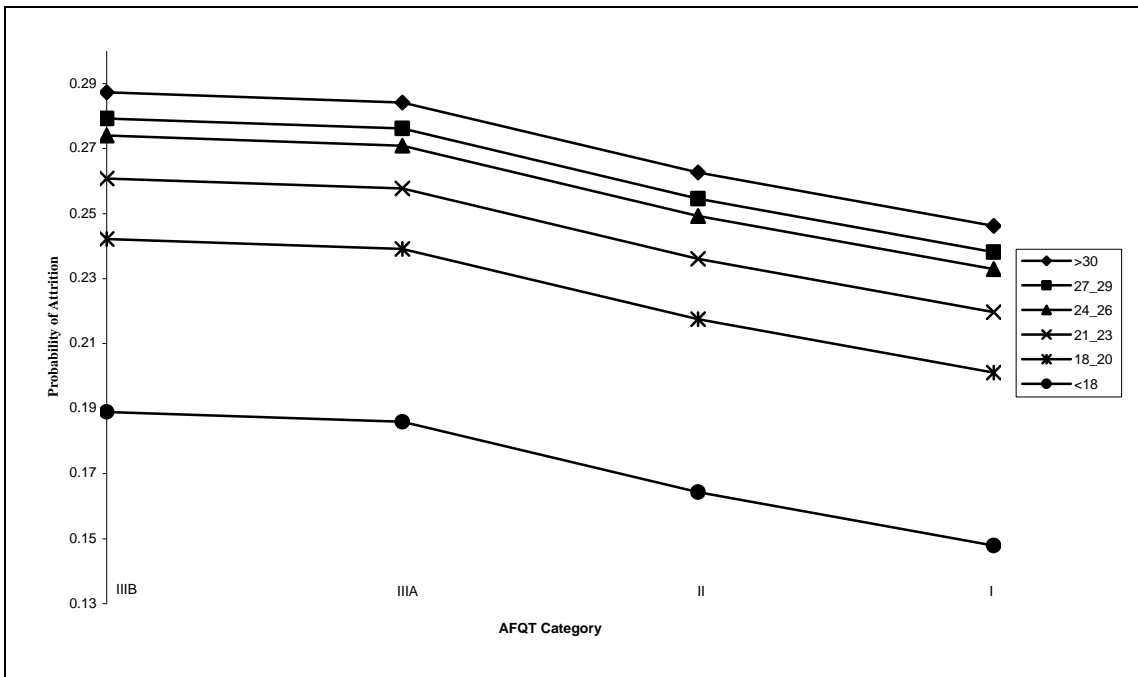
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 33.   LPM of Attrition for Tier I Men by Age and AFQT Category
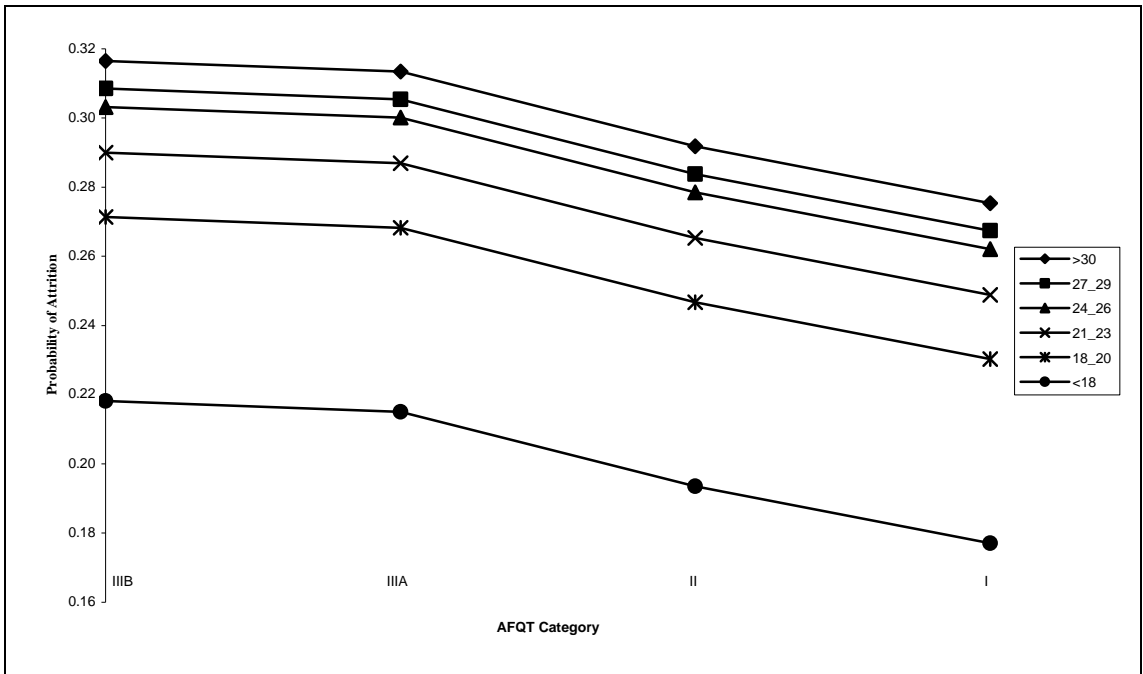
Figure 34.   LPM of Attrition for Tier II Men by Age and AFQT Category
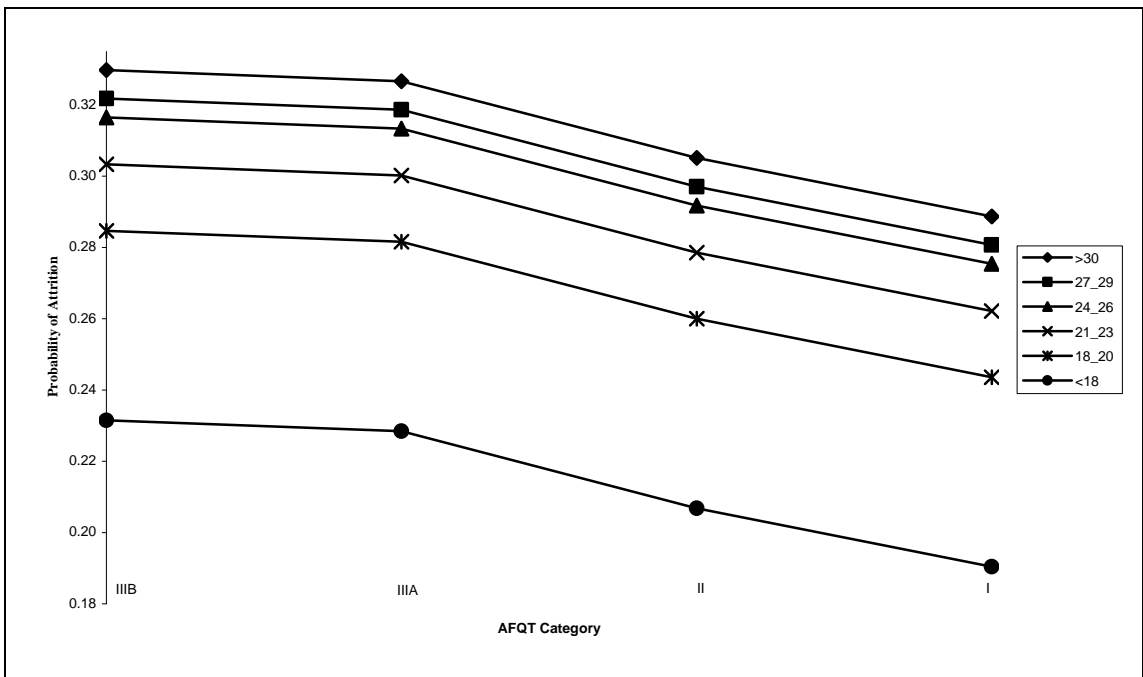
Figure 35.   LPM of Attrition for Tier III Men by Age and AFQT Category

2. Female LPM Regression Analysis

Presented in Table 30 are the variable descriptive statistics for the 94,679 female observations in the sample. The data show an overall attrition rate for women of 28.81 percent. Most women fall within the AFQT category IIIB at 33.55 percent, followed by category II at 31.98 percent. The most populous age category is the 18-20 year olds, which make up 51.07 percent of the sample, followed by those less-than-18 years of age at 27.05 percent.

Table 30.   Summary of LPM Variables for Women

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	DEP Attrite	= 1 if true, 0 false	94679	0.2881	0.4529	0	1
I	afqt>=93 & afqt <=99	= 1 if true, 0 false	94679	0.0327	0.1778	0	1
II	afqt>=65 & afqt<=92	= 1 if true, 0 false	94679	0.3198	0.4664	0	1
IIIA	afqt>=50 & afqt<=64	= 1 if true, 0 false	94679	0.3120	0.4633	0	1
IIIB	afqt>=31 & afqt <=49	= 1 if true, 0 false	94679	0.3355	0.4722	0	1
und_18	Under age 18	= 1 if true, 0 false	94679	0.2705	0.4442	0	1
age18_20	Age 18 through 20	= 1 if true, 0 false	94679	0.5107	0.4999	0	1
age21_23	Age 21 through 23	= 1 if true, 0 false	94679	0.1360	0.3428	0	1
age24_26	Age 24 through 26	= 1 if true, 0 false	94679	0.0455	0.2084	0	1
age27_29	Age 27 through 29	= 1 if true, 0 false	94679	0.0206	0.1420	0	1
ovr_30	Age 30 +	= 1 if true, 0 false	94679	0.0167	0.1283	0	1
ave_tid	Spent longer than average time in DEP	= 1 if true, 0 false	94679	0.4985	0.5000	0	1
tierI	Possesses Tier I credentials	= 1 if true, 0 false	94679	0.9616	0.1921	0	1
tierII	Possesses Tier II credentials	= 1 if true, 0 false	94679	0.0313	0.1740	0	1
tierIII	Possesses Tier III credentials	= 1 if true, 0 false	94679	0.0071	0.0841	0	1
I_hsd	Possesses High School Diploma	= 1 if true, 0 false	94679	0.5335	0.4989	0	1
I_hsnx	Did not pass state exit exam	= 1 if true, 0 false	94679	0.3637	0.4811	0	1
I_hss	High School Senior	= 1 if true, 0 false	94679	0.0144	0.1193	0	1
I_cnc	Credential Near Completion	= 1 if true, 0 false	94679	0.0048	0.0689	0	1
I_aed	Adult Education Diploma	= 1 if true, 0 false	94679	0.0142	0.1185	0	1
I_semcol	One semester of college	= 1 if true, 0 false	94679	0.0087	0.0929	0	1
I_asc_deg	Associate Degree	= 1 if true, 0 false	94679	0.0002	0.0126	0	1
I_ba	Bachelorette Degree	= 1 if true, 0 false	94679	0.0004	0.0208	0	1
I_pnd	Professional Nursing Diploma	= 1 if true, 0 false	94679	0.0210	0.1433	0	1
I_grded	Graduate Degree	= 1 if true, 0 false	94679	0.0007	0.0262	0	1
II_ged	Possesses GED	= 1 if true, 0 false	94679	0.0035	0.0590	0	1

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
II_inhs	In High School	= 1 if true, 0 false	94679	0.0237	0.1520	0	1
II_opc	Occupational Program Certificate	= 1 if true, 0 false	94679	0.0007	0.0262	0	1
II_csd	Correspondence School Diploma	= 1 if true, 0 false	94679	0.0004	0.0195	0	1
II_coa	Certificate of Attendance	= 1 if true, 0 false	94679	0.0008	0.0285	0	1
II_hsd	Home School Diploma	= 1 if true, 0 false	94679	0.0022	0.0470	0	1
III_lths	No credential	= 1 if true, 0 false	94679	0.0071	0.0841	0	1
ave_mxwt	Over average max weight	= 1 if true, 0 false	94679	0.5002	0.5000	0	1
youth	Participated in youth program	= 1 if true, 0 false	94679	0.0293	0.1686	0	1
metro	Lived in a metropolitan area	= 1 if true, 0 false	94679	0.8064	0.3951	0	1
mar	Married	= 1 if true, 0 false	94679	0.0640	0.2447	0	1
dep	Have one or more dependents	= 1 if true, 0 false	94679	0.0956	0.2941	0	1
asian_pi	Asian/Pacific Islander	= 1 if true, 0 false	94679	0.0394	0.1945	0	1
black	Black	= 1 if true, 0 false	94679	0.2236	0.4167	0	1
hisp	Hispanic	= 1 if true, 0 false	94679	0.1582	0.3650	0	1
white	White	= 1 if true, 0 false	94679	0.5044	0.5000	0	1
race_oth	Race Other	= 1 if true, 0 false	94679	0.0744	0.2624	0	1
ave_mep	Lived further than average distance to MEPS	= 1 if true, 0 false	94679	0.3332	0.4714	0	1
ave_rtc	Lived further than avg. distance to RTC	= 1 if true, 0 false	94679	0.4081	0.4915	0	1
fy1999	Entered DEP in FY1999	= 1 if true, 0 false	94679	0.0431	0.2032	0	1
fy2000	Entered DEP in FY2000	= 1 if true, 0 false	94679	0.1240	0.3296	0	1
fy2001	Entered DEP in FY2001	= 1 if true, 0 false	94679	0.1360	0.3427	0	1
fy2002	Entered DEP in FY2002	= 1 if true, 0 false	94679	0.1383	0.3453	0	1
fy2003	Entered DEP in FY2003	= 1 if true, 0 false	94679	0.0832	0.2762	0	1
fy2004	Entered DEP in FY2004	= 1 if true, 0 false	94679	0.0983	0.2978	0	1
fy2005	Entered DEP in FY2005	= 1 if true, 0 false	94679	0.0900	0.2862	0	1
fy2006	Entered DEP in FY2006	= 1 if true, 0 false	94679	0.0988	0.2984	0	1
fy2007	Entered DEP in FY2007	= 1 if true, 0 false	94679	0.1162	0.3205	0	1
fy2008	Entered DEP in FY2008	= 1 if true, 0 false	94679	0.0720	0.2585	0	1
female	Female DEP member	= 1 if true, 0 false	94679	1	0	1	1
mep1 - mep65	MEPS where entered DEP	= 1 if true, 0 false	94679	-	-	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 31 presents the female LPM regression results for all Tiers combined and individual education credentials grouped into respective Tiers. The R-squared value is 0.1013 and the probability of attrition for the base individual is 0.3236. The data show

that the probability of attrition decreases by 0.0328 for women in AFQT category I and decreases by 0.0148 for women in AFQT category II. The probability attrition for woman in AFQT category IIIB decreases by 0.0054. Category I and II variables are both statistically significant at the 1 percent level, while the category IIIB variable is significant at the 15 percent level. Only the less-than-18 age variable is significant at the 1 percent level. The over-30 age variable is significant at the 10 percent level. The other age variables are not significant. The under-18 variable decreases the probability of attrition by 0.0483, while the over-30 age variable decreases probability of attrition by 0.0174. The data show that the probability of attrition for Tier II woman increases by 0.0349 and the probability of attrition for Tier III woman increases by 0.0273. Both Tier II and Tier III variables are statistically significant at the 10 percent level.

Table 31.   Binary LPM, Tiers, Regression Results for Women

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0328	0.0082	0.0000
II	-0.0148	0.0036	0.0000
IIIB	-0.0054	0.0035	0.1260
und_18	-0.0483	0.0038	0.0000
age21_23	0.0043	0.0042	0.3050
age24_26	0.0004	0.0067	0.9540
age27_29	-0.0027	0.0096	0.7810
ovr_30	-0.0174	0.0104	0.0950
ave_tid	0.2633	0.0032	0.0000
tierII	0.0349	0.0082	0.0000
tierIII	0.0273	0.0161	0.0900
ave_mxwt	-0.0353	0.0028	0.0000
youth	-0.2587	0.0049	0.0000
metro	-0.0024	0.0040	0.5550
mar	-0.0173	0.0080	0.0310
dep	-0.0083	0.0068	0.2220
asian_pi	-0.0627	0.0074	0.0000
black	-0.0628	0.0039	0.0000
hisp	-0.0441	0.0046	0.0000
race_oth	0.0014	0.0057	0.8040
ave_mep	-0.0056	0.0034	0.1000
ave_rtc	0.0026	0.0085	0.7640
fy2000	-0.0960	0.0084	0.0000
fy2001	-0.0955	0.0084	0.0000
fy2002	-0.0906	0.0084	0.0000
fy2003	-0.0889	0.0090	0.0000

Variable	Coefficient	Robust Std. Error	p-Value
fy2004	-0.0864	0.0088	0.0000
fy2005	-0.0736	0.0089	0.0000
fy2006	-0.0730	0.0087	0.0000
fy2007	-0.0759	0.0086	0.0000
fy2008	-0.0707	0.0091	0.0000
Intercept	0.3236	0.0275	0.0000

R-squared	Number of obs.	Prob > F	
0.1013	94,679	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is a Tier I white female with category IIIA AFQT who entered DEP in 1999.

Table 32 presents the female LPM regression results for all Tiers broken down by each education credential. The R-squared value is 0.1024 and the probability of attrition for the base individual is 0.3169. The data show that the probability of attrition decreases by 0.0321 for women in AFQT category I and decreases by 0.0142 for those in AFQT category II. The probability attrition for women in category IIIB decreases by 0.0054. Category I and II variables are both statistically significant at the 1 percent level, while category IIIB is significant at the 15 percent level. Only the less-than-18 age variable is significant at the 1 percent level. The over-30 age variable is significant at the 10 percent level. The other age variables are not significant. The less-than-18 variable decreases probability of attrition by 0.0556 while the over-30 age variable decreases the probability of attrition by 0.0200. The data show that the probability of attrition for women with a GED increases by 0.0503 and the probability of attrition for those with no education credential increases by 0.0338. Education variables I_hss, I_cnc, I_ba, II_ged, and III_hsd are all statistically significant at the 10 percent level.

Table 32.   Binary LPM, Education Codes, Regression Results for Women

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0321	0.0082	0.0000
II	-0.0142	0.0036	0.0000
IIIB	-0.0054	0.0035	0.1230
und_18	-0.0556	0.0043	0.0000
age21_23	0.0059	0.0043	0.1690
age24_26	-0.0006	0.0069	0.9330
age27_29	-0.0042	0.0099	0.6710
ovr_30	-0.0200	0.0107	0.0610
ave_tid	0.2602	0.0034	0.0000
I_hss	0.0146	0.0042	0.0010

Variable	Coefficient	Robust Std. Error	p-Value
I_cnc	0.1216	0.0128	0.0000
I_aed	0.0047	0.0186	0.7990
I_semcol	0.0092	0.0112	0.4120
I_asc_deg	0.0007	0.0145	0.9610
I_pnd	0.0311	0.1004	0.7570
I_hsnx	-0.0418	0.0611	0.4940
I_ba	0.0221	0.0102	0.0310
I_grded	0.0687	0.0523	0.1890
II_inhs	0.0393	0.0258	0.1280
II_ged	0.0503	0.0094	0.0000
II_opc	-0.0024	0.0531	0.9640
II_csd	-0.0507	0.0656	0.4400
II_coa	0.0491	0.0522	0.3470
II_hsd	-0.0189	0.0270	0.4840
III_lths	0.0338	0.0161	0.0360
ave_mxwt	-0.0350	0.0028	0.0000
youth	-0.2589	0.0049	0.0000
metro	-0.0027	0.0040	0.4970
mar	-0.0184	0.0080	0.0210
dep	-0.0073	0.0069	0.2860
asian_pi	-0.0625	0.0074	0.0000
black	-0.0621	0.0039	0.0000
hisp	-0.0439	0.0046	0.0000
race_oth	0.0017	0.0057	0.7640
ave_mep	-0.0057	0.0034	0.0920
ave_rtc	0.0029	0.0085	0.7350
fy2000	-0.0956	0.0084	0.0000
fy2001	-0.0948	0.0084	0.0000
fy2002	-0.0887	0.0084	0.0000
fy2003	-0.0862	0.0090	0.0000
fy2004	-0.0835	0.0088	0.0000
fy2005	-0.0704	0.0089	0.0000
fy2006	-0.0696	0.0088	0.0000
fy2007	-0.0723	0.0086	0.0000
fy2008	-0.0670	0.0091	0.0000
Intercept	0.3169	0.0275	0.0000

R-squared	Number of obs.	Prob > F	
0.1024	94,679	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is a high school diploma graduate white female with category IIIA AFQT who entered DEP in 1999.

Figures 36 through 38 show similar calculations as done for men (seen in Figures 33 through 35). The data show that for woman the probability of attrition increases with age between the less-than-18 group and the over-30 group. With groups other than less-than-18 and over-30, the difference in probability of attrition increases as age decreases. This may be due to those age groups not being statistically significant in the regression. The data also show that the probability of attrition for woman increases as AFQT

category increases between IIIB and IIIA. The probability of attrition then decreases at a steady rate between AFQT categories IIIA and I. As with the men, the probability curves were calculated from the LPM, so there is no variation in the slopes between the different age groups and Tier classifications as shown in Figures 36 through 38. The same difference in probability caused by age is shown in all figures with the additional increase in probabilities caused by the Tier group of the individual.
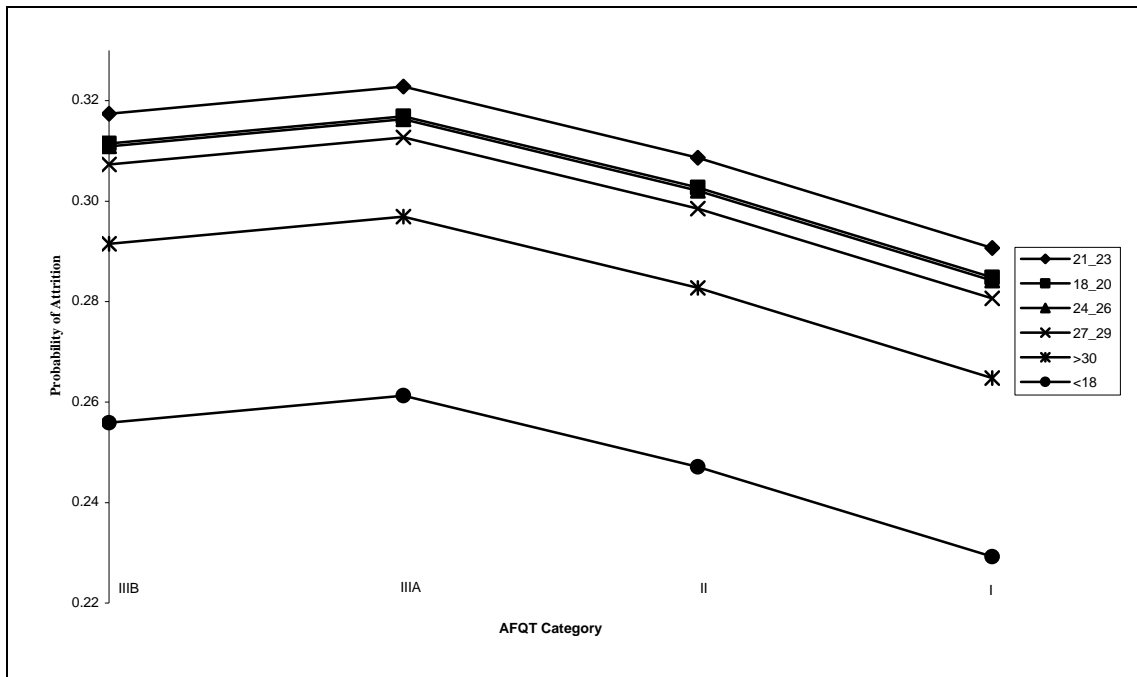
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 36.   Tier I LPM of Attrition by Age and AFQT Category for Women
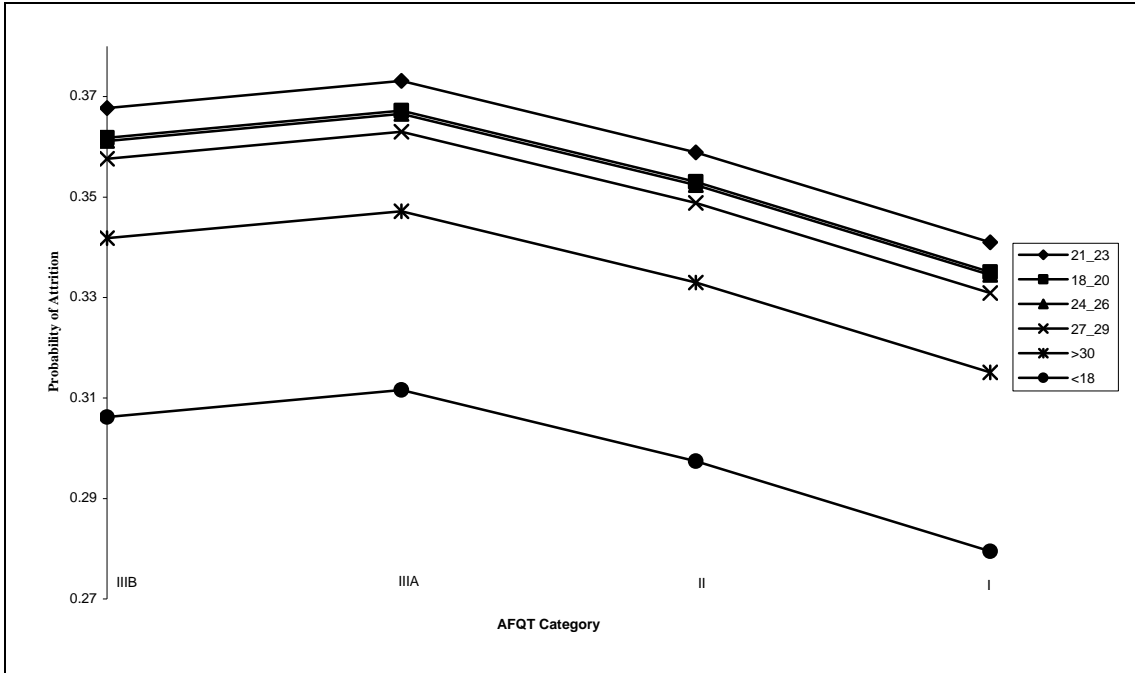
Figure 37.   Tier II LPM of Attrition by Age and AFQT Category for Women
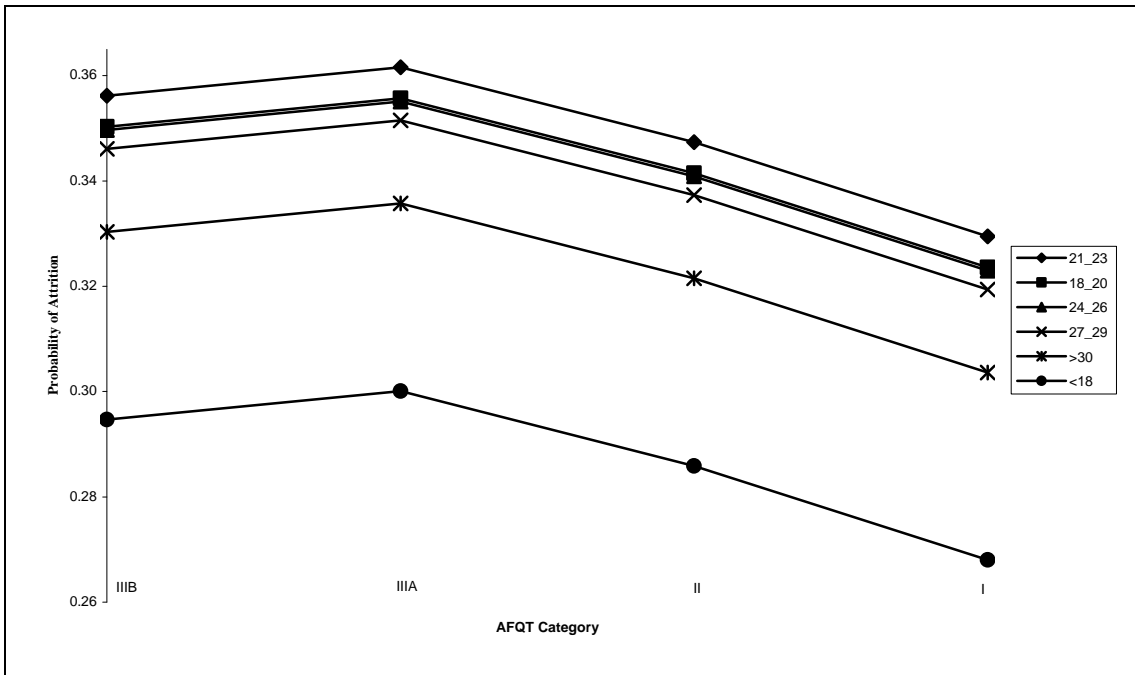
Figure 38.   Tier III LPM of Attrition by Age and AFQT Category for Women

3. Men and Women LPM Regression Analysis

Presented in Table 33 are variable descriptive statistics for men and women combined, including 474,752 observations in the sample. The data show an overall attrition rate of 21.12 percent. Most observations fall within the AFQT category II at 35.31 percent, followed by category IIIB at 31.84 percent. The most populous age category is the 18-to-20 year olds, which make up 53.51 percent of the sample, followed by those less than 18 years of age at 21.91 percent.

Table 33. Summary of LPM Variables for Men and Women

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
d_att	DEP Attrite	= 1 if true, 0 false	474752	0.2112	0.4082	0	1
I	afqt>=93 & afqt <=99	= 1 if true, 0 false	474752	0.0544	0.2268	0	1
II	afqt>=65 & afqt<=92	= 1 if true, 0 false	474752	0.3531	0.4779	0	1
IIIA	afqt>=50 & afqt<=64	= 1 if true, 0 false	474752	0.2742	0.4461	0	1
IIIB	afqt>=31 & afqt <=49	= 1 if true, 0 false	474752	0.3184	0.4659	0	1
und_18	Under age 18	= 1 if true, 0 false	474752	0.2191	0.4136	0	1
age18_20	Age 18 through 20	= 1 if true, 0 false	474752	0.5351	0.4988	0	1
age21_23	Age 21 through 23	= 1 if true, 0 false	474752	0.1536	0.3606	0	1
age24_26	Age 24 through 26	= 1 if true, 0 false	474752	0.0531	0.2242	0	1
age27_29	Age 27 through 29	= 1 if true, 0 false	474752	0.0222	0.1474	0	1
ovr_30	Age 30 +	= 1 if true, 0 false	474752	0.0169	0.1289	0	1
ave_tid	Spent longer than average time in DEP	= 1 if true, 0 false	474752	0.4625	0.4986	0	1
tierI	Possesses Tier I credentials	= 1 if true, 0 false	474752	0.9279	0.2587	0	1
tierII	Possesses Tier II credentials	= 1 if true, 0 false	474752	0.0531	0.2242	0	1
tierIII	Possesses Tier III credentials	= 1 if true, 0 false	474752	0.0191	0.1368	0	1
I_hsd	Possesses High School Diploma	= 1 if true, 0 false	474752	0.5191	0.4996	0	1
I_hsnx	Did not pass state exit exam	= 1 if true, 0 false	474752	0.3402	0.4738	0	1
I_hss	High School Senior	= 1 if true, 0 false	474752	0.0225	0.1483	0	1
I_cnc	Credential Near Completion	= 1 if true, 0 false	474752	0.0054	0.0733	0	1
I_aed	Adult Education Diploma	= 1 if true, 0 false	474752	0.0141	0.1180	0	1
I_semcol	One semester of college	= 1 if true, 0 false	474752	0.0075	0.0861	0	1
I_asc_deg	Associate Degree	= 1 if true, 0 false	474752	0.0001	0.0098	0	1
I_ba	Bachelorette Degree	= 1 if true, 0 false	474752	0.0005	0.0215	0	1
I_pnd	Professional Nursing Diploma	= 1 if true, 0 false	474752	0.0180	0.1328	0	1
I_grded	Graduate Degree	= 1 if true, 0 false	474752	0.0006	0.0235	0	1
II_ged	Possesses GED	= 1 if true, 0 false	474752	0.0037	0.0607	0	1

Name	Variable	Description	Obs	Mean	Std. Dev.	Min	Max
II_inhs	In High School	= 1 if true, 0 false	474752	0.0444	0.2059	0	1
II_opc	Occupational Program Certificate	= 1 if true, 0 false	474752	0.0009	0.0298	0	1
II_csd	Correspondence School Diploma	= 1 if true, 0 false	474752	0.0004	0.0205	0	1
II_coa	Certificate of Attendance	= 1 if true, 0 false	474752	0.0009	0.0294	0	1
II_hsd	Home School Diploma	= 1 if true, 0 false	474752	0.0028	0.0530	0	1
III_lths	No credential	= 1 if true, 0 false	474752	0.0191	0.1368	0	1
ave_mxwt	Over average max weight	= 1 if true, 0 false	474752	0.4847	0.4998	0	1
youth	Participated in youth program	= 1 if true, 0 false	474752	0.0271	0.1625	0	1
metro	Lived in a metropolitan area	= 1 if true, 0 false	474752	0.8094	0.3928	0	1
mar	Married	= 1 if true, 0 false	474752	0.0551	0.2282	0	1
dep	Have one or more dependents	= 1 if true, 0 false	474752	0.0876	0.2827	0	1
asian_pi	Asian/Pacific Islander	= 1 if true, 0 false	474752	0.0407	0.1976	0	1
black	Black	= 1 if true, 0 false	474752	0.1802	0.3843	0	1
hisp	Hispanic	= 1 if true, 0 false	474752	0.1444	0.3515	0	1
white	White	= 1 if true, 0 false	474752	0.5670	0.4955	0	1
race_oth	Race Other	= 1 if true, 0 false	474752	0.0677	0.2512	0	1
ave_mep	Lived further than average distance to MEPS	= 1 if true, 0 false	474752	0.3269	0.4691	0	1
ave_rtc	Lived further than avg. distance to RTC	= 1 if true, 0 false	474752	0.3946	0.4888	0	1
fy1999	Entered DEP in FY1999	= 1 if true, 0 false	474752	0.0333	0.1795	0	1
fy2000	Entered DEP in FY2000	= 1 if true, 0 false	474752	0.1257	0.3315	0	1
fy2001	Entered DEP in FY2001	= 1 if true, 0 false	474752	0.1336	0.3402	0	1
fy2002	Entered DEP in FY2002	= 1 if true, 0 false	474752	0.1306	0.3370	0	1
fy2003	Entered DEP in FY2003	= 1 if true, 0 false	474752	0.1111	0.3142	0	1
fy2004	Entered DEP in FY2004	= 1 if true, 0 false	474752	0.1046	0.3060	0	1
fy2005	Entered DEP in FY2005	= 1 if true, 0 false	474752	0.0950	0.2932	0	1
fy2006	Entered DEP in FY2006	= 1 if true, 0 false	474752	0.0934	0.2909	0	1
fy2007	Entered DEP in FY2007	= 1 if true, 0 false	474752	0.1066	0.3086	0	1
fy2008	Entered DEP in FY2008	= 1 if true, 0 false	474752	0.0662	0.2486	0	1
male	Male DEP member	= 1 if true, 0 false	474752	0.8006	0.3996	0	1
female	Female DEP member	= 1 if true, 0 false	474752	0.1994	0.3996	0	1
mep1 - mep65	MEPS where entered DEP	= 1 if true, 0 false	474752	-	-	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 34 presents the male and female LPM regression results for all Tiers combined and individual education credentials grouped into respective Tiers. The R-squared value is 0.0527, and the probability of attrition for the base individual is 0.2476. The data show that the probability of attrition decreases by 0.0400 for AFQT category I individuals and decreases by 0.0224 for those in AFQT category II. The probability of attrition for persons in category IIIB increases by 0.0029. Category I and II variables are both statistically significant at the 1 percent level while category IIIB is significant at the 10 percent level. All age variables are significant at the 1 percent level. The less-than-18 variable decreases the probability of attrition by 0.0232, while all other age variables increase the probability of attrition as the age of the individual increases. The data show that the probability of attrition for Tier II individuals increases by 0.0082 and the probability of attrition for Tier III individuals increases by 0.0216. Both Tier II and Tier III variables are statistically significant at the 1 percent level. The data show that the probability of attrition increases for women by 0.0949 and is significant at the 1 percent level.

Table 34.   Binary LPM, Tiers, Regression Results for Men and Women

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0400	0.0027	0.0000
II	-0.0224	0.0015	0.0000
IIIB	0.0029	0.0016	0.0640
female	0.0949	0.0016	0.0000
und_18	-0.0232	0.0016	0.0000
age21_23	0.0129	0.0017	0.0000
age24_26	0.0242	0.0026	0.0000
age27_29	0.0283	0.0039	0.0000
ovr_30	0.0340	0.0045	0.0000
ave_tid	0.1499	0.0013	0.0000
tierII	0.0082	0.0026	0.0020
tierIII	0.0216	0.0043	0.0000
ave_mxwt	-0.0228	0.0012	0.0000
youth	-0.1874	0.0021	0.0000
metro	-0.0006	0.0016	0.7230
mar	-0.0595	0.0036	0.0000
dep	0.0132	0.0031	0.0000
asian_pi	-0.0427	0.0030	0.0000
black	-0.0264	0.0017	0.0000
hisp	-0.0186	0.0019	0.0000

Variable	Coefficient	Robust Std. Error	p-Value
race_oth	0.0080	0.0025	0.0010
ave_mep	-0.0031	0.0014	0.0250
ave_rtc	0.0041	0.0037	0.2670
fy2000	-0.1041	0.0040	0.0000
fy2001	-0.0954	0.0040	0.0000
fy2002	-0.1026	0.0040	0.0000
fy2003	-0.1040	0.0041	0.0000
fy2004	-0.0940	0.0041	0.0000
fy2005	-0.0901	0.0042	0.0000
fy2006	-0.1059	0.0042	0.0000
fy2007	-0.1131	0.0041	0.0000
fy2008	-0.1209	0.0043	0.0000
Intercept	0.2476	0.0122	0.0000

R-squared	Number of obs.	Prob > F	
0.0527	474,752	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is Tier I white male with category IIIA AFQT who entered DEP in 1999.

Table 35 presents the LPM regression results for men and women from all Tiers, divided by each education credential. The R-squared value is 0.0549 and the probability of attrition for the base individual is 0.2335. The data show that the probability of attrition decreases by 0.0369 for persons in AFQT category I and decreases by 0.0204 for those in AFQT category II. The probability of attrition for persons in AFQT category IIIB increases by 0.0021. AFQT category I and II variables are both statistically significant at the 1 percent level, while AFQT category IIIB is not significant. All age variables are significant at the 1 percent level. The less-han-18 variable decreases probability of attrition by 0.0366, while all other age variables increase the probability of attrition as the age of the individual increases. The data show that the probability of attrition for individuals with a GED increases by 0.0227 and the probability of attrition for individuals with no education credential increases by 0.0336. All education variables are statistically significant at the 10 percent level, with the exception of I_aed, I_pnd, I_hsnx, II_opc, and II_csd. The data show that the probability of attrition increases for women by 0.0971 and is significant at the 1 percent level.

Table 35.	Binary LPM, Education Codes, Regression Results for Men and Women

Variable	Coefficient	Robust Std. Error	p-Value
I	-0.0369	0.0027	0.0000
II	-0.0204	0.0015	0.0000
IIIB	0.0021	0.0016	0.1750
female	0.0971	0.0016	0.0000
und_18	-0.0366	0.0018	0.0000
age21_23	0.0185	0.0017	0.0000
age24_26	0.0282	0.0027	0.0000
age27_29	0.0319	0.0040	0.0000
ovr_30	0.0367	0.0046	0.0000
ave_tid	0.1428	0.0014	0.0000
I_hss	0.0286	0.0018	0.0000
I_cnc	0.1179	0.0046	0.0000
I_aed	0.0040	0.0073	0.5840
I_semcol	0.0119	0.0047	0.0120
I_asc_deg	-0.0186	0.0063	0.0030
I_pnd	0.0350	0.0610	0.5660
I_hsnx	-0.0136	0.0259	0.6000
I_ba	0.0246	0.0047	0.0000
I_grded	0.0440	0.0250	0.0780
II_inhs	0.0407	0.0102	0.0000
II_ged	0.0227	0.0029	0.0000
II_opc	-0.0217	0.0178	0.2230
II_csd	-0.0407	0.0265	0.1250
II_coa	0.0443	0.0208	0.0340
II_hsd	-0.0329	0.0094	0.0000
III_lths	0.0336	0.0043	0.0000
ave_mxwt	-0.0220	0.0012	0.0000
youth	-0.1883	0.0021	0.0000
metro	-0.0004	0.0016	0.8130
mar	-0.0590	0.0036	0.0000
dep	0.0131	0.0031	0.0000
asian_pi	-0.0416	0.0030	0.0000
black	-0.0259	0.0017	0.0000
hisp	-0.0187	0.0019	0.0000
race_oth	0.0080	0.0024	0.0010
ave_mep	-0.0035	0.0014	0.0120
ave_rtc	0.0040	0.0037	0.2720
fy2000	-0.1023	0.0040	0.0000
fy2001	-0.0934	0.0040	0.0000
fy2002	-0.0987	0.0040	0.0000
fy2003	-0.0978	0.0041	0.0000
fy2004	-0.0875	0.0041	0.0000
fy2005	-0.0828	0.0042	0.0000
fy2006	-0.0978	0.0042	0.0000
fy2007	-0.1045	0.0041	0.0000
fy2008	-0.1122	0.0043	0.0000
Intercept	0.2335	0.0122	0.0000

R-squared	Number of obs.	Prob > F	
0.0549	474,752	0.0000	

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Base individual is high school diploma graduate white male with category IIIA AFQT who entered DEP in 1999.

When analyzing men and women together, Figures 39 and 40 show that for men and women, the probability of attrition increases with age, with the greatest increase between the less-than-18 group and 18-to-20 groups. After that, the difference in the probability of attrition with age declines as the groups increase in age. The data also show that the probability of attrition decreases as AFQT category increases. The decrease in the probability of attrition with an increase in AFQT category is the smallest between category IIIB and category IIIA. From AFQT category IIIA to category II, the decrease in the probability of attrition with increase in AFQT category is the greatest. As with the other probability curves calculated from the LPM, there is no variation between men and women in the slopes of different age groups, as shown in Figure 40.
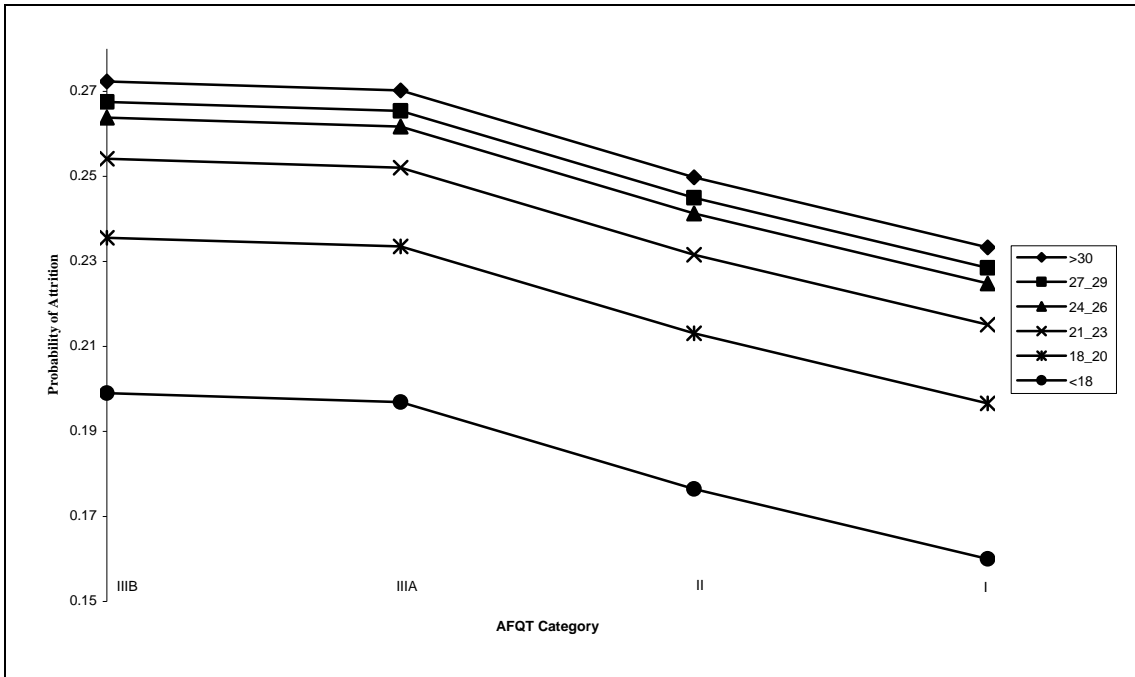
Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Figure 39.   Men, all Gender, Tier I LPM of Attrition by Age and AFQT Category
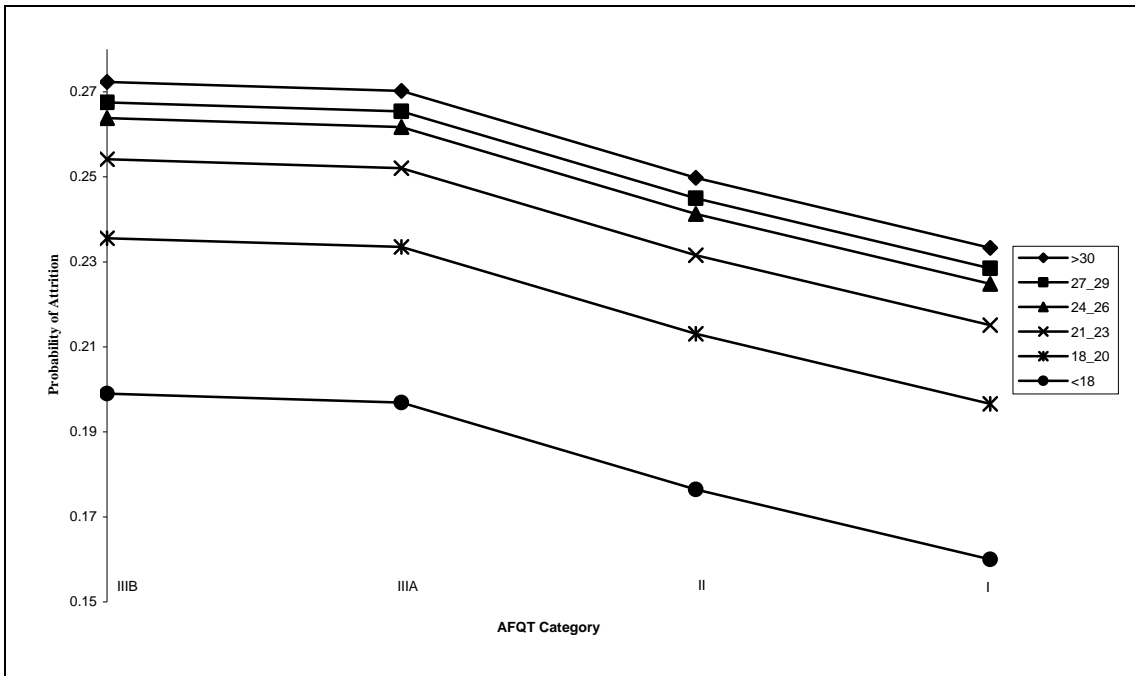
Figure 40. Women, all Gender, Tier I LPM of Attrition by Age and AFQT Category

VI. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

A. SUMMARY

The primary focus of this study is the effect of AFQT score and other variables on DEP attrition. The data used in the study were collected from fiscal years 1999 through 2008 and were provided by DMDC. The data exclude persons who had prior service, persons whose attrition was due to entering a different military service other than the Navy, and persons whose attrition or accession occurred in FY1999. Men and women were analyzed separately because of historic differences in attrition by gender and sample size. Attrition, age, AFQT, and education data were first analyzed to determine trends and to gain a general understanding of the characteristics of DEP members relating to attrition.

Regression analysis was conducted using three different models, each with age and AFQT score as the primary variables of interest. The first model separated the sample by educational Tier. Probit regression analysis was then performed with observations within each separate Tier. Education variables specific to the Tier being analyzed were included in the model as control variables. In this model, the effect of AFQT on DEP attrition was dependent upon the age of the individual. This was done with the use of an interaction variable between age and AFQT. The marginal effects and probability of attrition were calculated for each 1 point increase in AFQT and at different ages. The second model employed only binary variables, similar to those used by the Navy to classify individuals, to estimate a LPM. In this model, regression analysis was conducted on observations consisting of all Tiers. In this model, the age and AFQT interaction variable was not included, so the effect of AFQT did not depend on the age of the individual. The model also combined the individual education credentials into their respective Tier classification to create general education control variables. The third model is similar to the second model, but instead of using Tier classifications as control variables, the individual education credentials were used spanning all Tiers.

1.   Male Attrition, Age, AFQT, and Education Trends

In all fiscal years the attrition rates of men, calculated as a percentage of average DEP accessions, were lower than the overall attrition rates. The lowest rate was observed in FY2003 (16.95 percent) and the highest rate was observed in FY2004 (25.60 percent). Attrition rates from FY2000 through FY2003 are noticeably lower than those from FY2004 through FY2008. In FY2001, the number of DEP accessions was the highest at 50,918; the number was lowest in FY2008, at 24,632. Generally Tier II and Tier III attrition rates are higher than Tier I attrition rates; however, this is not always the case. For example, in FY2003, DEP attrition was contrary to expected, with Tier I at 19.67 percent, Tier II at 15.60 percent, and Tier III at 12.70 percent. In the following year, the trend was reversed, with Tier I attrition rates at 25.38 percent, Tier II at 26.5 percent, and Tier III at 40.64 percent. The highest attrition rates occurred in FY2004; however, the number of Tier II and Tier III men who entered DEP was lower than in previous years, when lower attrition rates occurred.

The average age of men entering DEP has increased by nearly one year, from 19.88 in FY2000 to 20.77 in FY2008, with 18 as the model age of men entering DEP. The average AFQT percentile score of men entering DEP has also risen from 58.30 in FY2000 to 63.64 in FY2008. This trend does not suggest that the average score of those who take the AFQT has increased, only that the average AFQT scores of persons entering DEP has increased. There is a positive correlation between age and average AFQT score. Average AFQT score is the lowest for 18-and 19-year-olds, at approximately 59. From age 20 to age 24, average AFQT score increased to approximately 65, where it remained steady through age 30.

High school diploma graduates account for most DEP accessions in Tier I, with 194,116 entering DEP between FY2000 and FY2008. Those classified as high school seniors make up the second-most populous education credential, with 120,751 entering the DEP over the same period. The most populous Tier II credential is those who possess a GED where, over the course of the study, 17,181 entered the DEP. Those classified as currently in high school make up the second-most populous education credential, where,

1,287 entered DEP. Persons classified as Tier III, no education credential, numbered 8,018 between FY2000 and FY2008. Tier I accession rates have increased from 87.81 percent in FY2000 to 95.04 percent in FY2008, while Tier II accession rates have decreased from 8.08 percent in FY2000 to 4.21 percent in FY2008. Tier III accession rates have also declined from 4.11 percent in FY2000 to 0.75 percent in FY2008.

2. Male Regression Analysis

In general, higher AFQT scores have a negative effect on the probability of DEP attrition. Higher age has a positive effect on the probability of DEP attrition. Regression analysis using an interaction term between age and AFQT revealed strong evidence that the effect of AFQT on DEP attrition depends on the age of the individual. The length of time spent in DEP also has a positive effect on DEP attrition, which makes sense because the longer a person spends in DEP the more likely competing opportunities (in the job market or in higher education, for example) might arise. The only education credential that predicts a lower probability of attrition than the high school diploma is an Associate's degree. All other Tier I credentials predict higher probabilities of attrition than does the traditional high school diploma. Individuals who are classified as Tier II are more likely to attrite than are their Tier I counterparts, while Tier III individuals have the highest probability of attrition.

The effect of higher AFQT scores on the probability of attrition for Tier I individuals decreases as age increases for individuals between 18 and 21 years old. At age 25, the effect of higher AFQT scores on the probability of attrition changes from negative to positive for Tier I individuals, suggesting that higher AFQT scores for men who are older increase the probability of attrition rather than decrease it. AFQT scores have a greater effect on the probability of attrition for men in Tier II than for those in Tier I. That is, as AFQT score increases, the probability of attrition decreases faster for Tier II men. The same trend was observed for 30-year-old Tier II men as was observed for Tier I 30-year-old men; however, for 25-year-old Tier II men, the effect of higher AFQT scores had a negative effect on the probability of attrition. Similar results were observed with the Tier III men, as observed with the Tier II men.

AFQT category variables also predict a decrease in probability of attrition as AFQT increases, with category I individuals having the lowest probability of attrition and category IIIB individuals having the highest probability of attrition. Models estimated without age and AFQT interaction variables show that the effect of AFQT on probability of attrition is the same for different age groups, which is not surprising. The greatest change in probability of attrition is observed between the AFQT category IIIA and AFQT category II variables.

3. Female Attrition, Age, AFQT, and Education Trends

In all fiscal years, the DEP attrition rates for women, calculated as a percentage of average DEP accessions, were higher than overall attrition rates. The lowest attrition rate is observed in FY2002 at 25.46 percent, and the highest rate occurred in FY2008 at 37.25 percent. The number of female DEP accessions was highest in FY2002 (13,098) and lowest in FY2008 (6,815). Tier II and Tier III female attrition rates are not always higher than Tier I attrition rates. The highest attrition rates occurred in FY2008; however, the number of Tier II and Tier III women who entered DEP that year was lower than in previous years, when lower attrition rates were observed.

The average age of women entering the DEP has also increased by nearly 1 year from 19.61 in FY2000 to 20.59 in FY2008, with 18 as the model age of women entering the DEP. The average AFQT score of women entering the DEP has also risen from 56.28 in FY2000 to 59.95 in FY2008. A positive correlation between age and average AFQT score was also observed with women. Average AFQT score is the lowest for 18-year-olds, at approximately 56.22. From age 19 to age 22, average AFQT score increased to approximately 63, where it remained steady through age 30.

The most populous Tier I education credential for women is a traditional high school diploma, with 49,117 such graduates entering the DEP between FY2000 and FY2008. Those classified as high school seniors make up the second-most populous education credential where, between FY2000 and FY2008, 32,229 entered DEP. The most populous Tier II credential is those who possess a GED, with 2,043 entering DEP during the same period. Those classified as currently in high school make up the second-

most populous Tier II education credential, with 301 entering DEP. Women classified as Tier III, no education credential, numbered 637 between FY2000 and FY2008. Female Tier I accession rates have increased from 95.65 percent in FY2000 to 96.89 percent in FY2008, while Tier II accession rates have decreased from 3.32 percent in FY2000 to 2.73 percent in FY2008. Tier III accession rates have also declined from 1.03 percent in FY2000 to 0.38 percent in FY2008.

4.   Female Regression Analysis

As with men, higher AFQT scores for woman have a negative effect on the probability of DEP attrition, while higher age has a positive effect on the probability of DEP attrition. Regression analysis using an interaction term between age and AFQT also revealed that the effect of AFQT score on DEP attrition depends on the age of the individual. The length of time spent in DEP also has a positive effect on DEP attrition for women. The only education credential that predicts a lower probability of attrition than the traditional high school diploma is for women classified as a high school senior. This observation is opposite from what was observed for men, where those classified as a high school senior had a higher probability of attrition. All other Tier I credentials predict a higher probability of attrition than does the high school diploma. Woman who are classified as Tier II are more likely to attrite than are their Tier I counterparts. Interestingly, Tier III women have a lower probability of attrition than do Tier II women, but are only significant at the 10 percent level.

The effect of higher AFQT scores on the probability of attrition for Tier I women decreases as age increases for all ages observed. Unlike men, at age 25 the effect of higher AFQT scores on the probability of attrition remains negative for older Tier I women. A noticeable difference is observed with women where the change in probability of attrition, with increased AFQT score, across the age groups is not as pronounced; the slopes of the probability curves are closer to being parallel than observed with men.

AFQT category variables also predict a decrease in the probability of attrition as AFQT category increases. AFQT category I women have the lowest probability of attrition, followed by category II women. The category IIIB variable predicts a lower

probability of attrition than does the category IIIA variable, but is not statistically significant. The greatest change in probability of attrition for women is observed between the AFQT category IIIA and AFQT category II variables. The only statistically significant age variables are found for women who are over 30 and for those who are less than 18, with older women having a higher probability of attrition than do their younger counterparts.

B. CONCLUSIONS

Significant differences in traits between male and female DEP members require separate analysis. The number of women who enter the DEP is significantly lower than the number of men who enter DEP. Women are also generally more likely to attrite than are their male counterparts. Female candidates are generally comprised of more Tier I members than is the male group. Tier II and Tier III members are more likely to attrite than are Tier I members. The number of Tier II and Tier III persons joining DEP has declined for both male and female candidates; however, this decline has not significantly reduced attrition rates. The fiscal year in which an individual joins DEP is significant and has an effect on the probability of attrition for that individual.

Several other control variables used in this study were valid predictors of attrition. For men, those classified as Race-other had the highest probability of attrition, followed by Whites, Hispanics, Blacks, and Asian/Pacific Islanders, which had the lowest probability of attrition. The same trend is observed for female DEP members. Most DEP members weigh under their maximum weight allowed by height. For both male and female DEP members, as they get closer to their maximum weight allowed by height, their probability of attrition decreases. For both male and female DEP members, those who participated in a youth program, such as JROTC, are less likely to attrite. Male and female members who are married are less likely to attrite, and, for men, those with dependents are more likely to attrite. The variable for women with dependents is not significant, most likely due to Navy policy prohibiting the enlistment of single parents

who have custody of their children.[41] Male DEP members who possess a home school diploma are less likely to attrite from DEP than are those who possess a high school diploma. There were not enough observations for women with a home school diploma to produce meaningful results.

AFQT score and age are both valid predictors of attrition; however, the effect of AFQT on the probability of attrition depends on the age of the individual and education credential. For example, 25-year-old Tier I men become <u>more</u> likely to attrite as AFQT score increases, while 21-year-old Tier I men become <u>less</u> likely to attrite as AFQT score increases. Generally, the probability of attrition decreases as AFQT increases, while the probability of attrition increases as age increases. Unlike for men, the probability of attrition does not increase as AFQT increases for older women. For men, AFQT score has a greater effect on the probability of attrition for those in Tier II and Tier III. The effect of AFQT and age on the probability of attrition for Tier II and Tier III women is not significant due to insufficient numbers of these observations within the sample.

The use of a score of 50 on the AFQT to determine program eligibility is a logical choice for men since the probability of attrition decreases the fastest from category IIIA to category IIIB. The AFQT categories are not as useful in predicting the probability of attrition for women. As AFQT increases from IIIB to IIIA the probability of attrition also increases for women; however, the AFQT IIIB variable is only significant at the 13 percent level.

It is difficult to accurately determine the effect AFQT scores, age, and education have on DEP attrition. The results presented in this study indicate that education is a better predictor over AFQT scores and age. Other models may provide a more reliable means to predict DEP attrition. For example, in all of the models, each of the fiscal year dummy variables was significant at the 5 percent level. There was a downward trend observed, over the course of the study, of the effect each fiscal year had on DEP attrition. Earlier years tended to reduce the probability of attrition more so than later years. This

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[41] Commander, Navy Recruiting Command (CNRC), *Navy Recruiting Manual-Enlisted COMNAVCRUITCOMINST 1130.8H Volume II,* (Millington, TN: CNRC, 2005), 2-5-1.

suggests that factors, unrelated to those studied in this analysis, effect DEP attrition over the course of time. These factors may include the health of the economy, availability of money for college, or wars in both Iraq and Afghanistan.

C. RECOMMENDATIONS

The Navy should consider updating its recruit quality matrix model to apply a weight based upon a combination of AFQT score, age, and education when selecting recruits for various programs. This would be similar to that of the HP3, model but would include a wider range of AFQT scores and ages. Earlier, it was shown that the effect of AFQT score on DEP attrition changes with age and is not the same for all ages and Tier groups. For example, an 18-year-old white man with a GED who scored 72 on the AFQT would have a predicted probability of attrition approximately the same as a 21-year-old man with a high school diploma who scored a 79 on the AFQT. The Navy should continue to use a score of 50 on the AFQT as a cutoff for certain programs. There is strong evidence that the probability of attrition significantly decreases as AFQT score increases beyond 50.

Further research should be conducted specific to female DEP members and attrition. This study revealed that attrition among male and female members can be attributed to different characteristics for each gender. Future research should include survey data to capture the effect of characteristics specific to women, not otherwise available through information in automated data files.

Attrition within the DEP is a combination of many factors that are not found in the data used for this study. For example, the data in this study suggest that the probability of attrition may be dependent on the location where a member entered DEP. Further research should also be conducted on programs designed to mitigate DEP attrition at the local as well as Navy wide levels. This study revealed that the effect of AFQT score and other variables on attrition is significant and measurable; however, other characteristics not examined in the present study may account for even more of a person's propensity to attrite.

APPENDIX A – ANALYSIS OF MEN

Table 36.　　　　Male Tier I Probability of Attrition Matrix, AFQT 31 – 99

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
31	0.2640	0.2640	0.2651	0.2666	0.2701	0.2754
32	0.2630	0.2630	0.2643	0.2661	0.2705	0.2768
33	0.2620	0.2620	0.2635	0.2655	0.2706	0.2782
34	0.2610	0.2610	0.2627	0.2650	0.2709	0.2796
35	0.2600	0.2600	0.2619	0.2645	0.2712	0.2810
36	0.2590	0.2590	0.2611	0.2639	0.2715	0.2824
37	0.2580	0.2580	0.2604	0.2633	0.2718	0.2838
38	0.2569	0.2569	0.2596	0.2628	0.2721	0.2851
39	0.2559	0.2559	0.2588	0.2622	0.2724	0.2866
40	0.2550	0.2550	0.2580	0.2616	0.2727	0.2880
41	0.2540	0.2540	0.2573	0.2611	0.2730	0.2894
42	0.2530	0.2530	0.2565	0.2605	0.2733	0.2908
43	0.2520	0.2520	0.2557	0.2600	0.2735	0.2922
44	0.2510	0.2510	0.2549	0.2594	0.2738	0.2937
45	0.2500	0.2500	0.2542	0.2588	0.2741	0.2951
46	0.2491	0.2491	0.2534	0.2583	0.2744	0.2965
47	0.2481	0.2481	0.2526	0.2577	0.2747	0.2980
48	0.2471	0.2471	0.2518	0.2572	0.2750	0.2994
49	0.2462	0.2462	0.2511	0.2566	0.2752	0.3008
50	0.2452	0.2452	0.2503	0.2560	0.2755	0.3023
51	0.2442	0.2442	0.2495	0.2555	0.2758	0.3037
52	0.2433	0.2433	0.2488	0.2549	0.2761	0.3052
53	0.2423	0.2423	0.2480	0.2544	0.2763	0.3066
54	0.2413	0.2413	0.2473	0.2538	0.2766	0.3081
55	0.2404	0.2404	0.2465	0.2533	0.2769	0.3096
56	0.2394	0.2394	0.2457	0.2527	0.2772	0.3110
57	0.2385	0.2385	0.2450	0.2522	0.2775	0.3124
58	0.2375	0.2375	0.2442	0.2516	0.2778	0.3138
59	0.2366	0.2366	0.2435	0.2510	0.2781	0.3153
60	0.2356	0.2356	0.2427	0.2505	0.2784	0.3168
61	0.2347	0.2347	0.2419	0.2499	0.2787	0.3182
62	0.2337	0.2337	0.2412	0.2494	0.2790	0.3197
63	0.2327	0.2327	0.2404	0.2488	0.2793	0.3212
64	0.2317	0.2317	0.2397	0.2483	0.2796	0.3227
65	0.2308	0.2308	0.2389	0.2477	0.2799	0.3242
66	0.2299	0.2299	0.2382	0.2472	0.2802	0.3256
67	0.2289	0.2289	0.2374	0.2466	0.2804	0.3271
68	0.2280	0.2280	0.2367	0.2461	0.2807	0.3286
69	0.2271	0.2271	0.2360	0.2456	0.2809	0.3301
70	0.2261	0.2261	0.2352	0.2450	0.2812	0.3316

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
71	0.2252	0.2252	0.2345	0.2445	0.2815	0.3331
72	0.2243	0.2243	0.2337	0.2439	0.2818	0.3346
73	0.2233	0.2233	0.2330	0.2434	0.2821	0.3361
74	0.2224	0.2224	0.2322	0.2428	0.2824	0.3376
75	0.2215	0.2215	0.2315	0.2423	0.2827	0.3391
76	0.2206	0.2206	0.2308	0.2417	0.2830	0.3406
77	0.2197	0.2197	0.2300	0.2412	0.2833	0.3422
78	0.2188	0.2188	0.2293	0.2407	0.2836	0.3436
79	0.2178	0.2178	0.2286	0.2401	0.2839	0.3451
80	0.2169	0.2169	0.2278	0.2396	0.2842	0.3466
81	0.2160	0.2160	0.2271	0.2390	0.2845	0.3481
82	0.2151	0.2151	0.2264	0.2385	0.2848	0.3496
83	0.2142	0.2142	0.2256	0.2380	0.2850	0.3512
84	0.2133	0.2133	0.2249	0.2374	0.2853	0.3527
85	0.2124	0.2124	0.2242	0.2369	0.2856	0.3542
86	0.2115	0.2115	0.2235	0.2363	0.2859	0.3557
87	0.2106	0.2106	0.2227	0.2358	0.2862	0.3573
88	0.2096	0.2096	0.2220	0.2353	0.2864	0.3588
89	0.2087	0.2087	0.2213	0.2347	0.2867	0.3604
90	0.2078	0.2078	0.2206	0.2342	0.2870	0.3619
91	0.2070	0.2070	0.2199	0.2337	0.2873	0.3634
92	0.2061	0.2061	0.2191	0.2330	0.2876	0.3650
93	0.2052	0.2052	0.2184	0.2325	0.2879	0.3665
94	0.2043	0.2043	0.2177	0.2320	0.2882	0.3681
95	0.2034	0.2034	0.2170	0.2314	0.2885	0.3695
96	0.2025	0.2025	0.2163	0.2309	0.2888	0.3711
97	0.2017	0.2017	0.2156	0.2304	0.2891	0.3726
98	0.2008	0.2008	0.2149	0.2298	0.2894	0.3742
99	0.1999	0.1999	0.2141	0.2293	0.2897	0.3757

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: Base individual is a white male who possesses a high school diploma. Dependent variable is DEP attrite.

Table 37.　　　Male Tier II Probability of Attrition Matrix, AFQT 31 – 99

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
31	0.2890	0.2892	0.2893	0.2897	0.2911	0.2930
32	0.2877	0.2880	0.2882	0.2887	0.2907	0.2932
33	0.2864	0.2868	0.2872	0.2878	0.2903	0.2934
34	0.2851	0.2856	0.2861	0.2868	0.2898	0.2936
35	0.2838	0.2844	0.2851	0.2859	0.2894	0.2938
36	0.2825	0.2833	0.2840	0.2850	0.2889	0.2940
37	0.2812	0.2821	0.2829	0.2840	0.2885	0.2942
38	0.2799	0.2810	0.2819	0.2831	0.2881	0.2944
39	0.2787	0.2798	0.2809	0.2822	0.2876	0.2946
40	0.2774	0.2786	0.2798	0.2813	0.2872	0.2948
41	0.2761	0.2775	0.2788	0.2804	0.2868	0.2950

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
42	0.2749	0.2763	0.2778	0.2795	0.2863	0.2952
43	0.2736	0.2752	0.2768	0.2786	0.2859	0.2954
44	0.2724	0.2741	0.2757	0.2777	0.2855	0.2956
45	0.2712	0.2729	0.2747	0.2768	0.2850	0.2958
46	0.2699	0.2719	0.2737	0.2759	0.2846	0.2960
47	0.2688	0.2707	0.2727	0.2750	0.2842	0.2962
48	0.2675	0.2697	0.2717	0.2741	0.2837	0.2964
49	0.2664	0.2685	0.2707	0.2732	0.2833	0.2966
50	0.2651	0.2674	0.2697	0.2723	0.2829	0.2968
51	0.2639	0.2664	0.2688	0.2714	0.2824	0.2970
52	0.2628	0.2653	0.2678	0.2706	0.2820	0.2972
53	0.2616	0.2642	0.2668	0.2697	0.2816	0.2974
54	0.2604	0.2631	0.2658	0.2688	0.2812	0.2976
55	0.2593	0.2620	0.2649	0.2680	0.2807	0.2978
56	0.2581	0.2610	0.2639	0.2671	0.2803	0.2979
57	0.2570	0.2599	0.2630	0.2662	0.2799	0.2981
58	0.2558	0.2589	0.2620	0.2654	0.2795	0.2983
59	0.2547	0.2579	0.2611	0.2645	0.2791	0.2986
60	0.2536	0.2568	0.2601	0.2637	0.2786	0.2988
61	0.2524	0.2558	0.2592	0.2628	0.2782	0.2990
62	0.2513	0.2548	0.2582	0.2620	0.2778	0.2992
63	0.2502	0.2537	0.2573	0.2612	0.2774	0.2994
64	0.2491	0.2527	0.2564	0.2603	0.2770	0.3002
65	0.2481	0.2517	0.2555	0.2595	0.2765	0.2998
66	0.2470	0.2507	0.2545	0.2587	0.2761	0.3000
67	0.2459	0.2497	0.2536	0.2579	0.2757	0.3002
68	0.2448	0.2487	0.2527	0.2570	0.2753	0.3004
69	0.2437	0.2477	0.2518	0.2562	0.2749	0.3006
70	0.2427	0.2467	0.2509	0.2554	0.2745	0.3008
71	0.2416	0.2458	0.2500	0.2546	0.2741	0.3010
72	0.2406	0.2448	0.2491	0.2538	0.2736	0.3012
73	0.2395	0.2438	0.2483	0.2530	0.2732	0.3014
74	0.2385	0.2429	0.2474	0.2522	0.2728	0.3016
75	0.2375	0.2419	0.2465	0.2514	0.2724	0.3018
76	0.2365	0.2409	0.2456	0.2506	0.2720	0.3020
77	0.2354	0.2400	0.2448	0.2498	0.2716	0.3022
78	0.2344	0.2391	0.2439	0.2490	0.2712	0.3024
79	0.2334	0.2382	0.2430	0.2483	0.2708	0.3026
80	0.2325	0.2372	0.2422	0.2475	0.2704	0.3028
81	0.2315	0.2363	0.2413	0.2467	0.2700	0.3030
82	0.2305	0.2354	0.2405	0.2459	0.2696	0.3032
83	0.2295	0.2345	0.2396	0.2452	0.2692	0.3034
84	0.2285	0.2336	0.2388	0.2444	0.2688	0.3036
85	0.2276	0.2327	0.2380	0.2437	0.2684	0.3038
86	0.2266	0.2318	0.2371	0.2429	0.2680	0.3040
87	0.2257	0.2309	0.2363	0.2421	0.2676	0.3042

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
88	0.2247	0.2300	0.2355	0.2414	0.2672	0.3044
89	0.2238	0.2291	0.2347	0.2406	0.2670	0.3046
90	0.2229	0.2283	0.2339	0.2399	0.2664	0.3048
91	0.2220	0.2274	0.2331	0.2392	0.2660	0.3050
92	0.2210	0.2265	0.2323	0.2384	0.2656	0.3053
93	0.2201	0.2257	0.2315	0.2377	0.2652	0.3055
94	0.2192	0.2248	0.2307	0.2370	0.2648	0.3057
95	0.2183	0.2240	0.2299	0.2362	0.2644	0.3059
96	0.2174	0.2231	0.2291	0.2355	0.2640	0.3061
97	0.2165	0.2223	0.2283	0.2348	0.2636	0.3063
98	0.2156	0.2215	0.2275	0.2341	0.2632	0.3065
99	0.2148	0.2206	0.2268	0.2334	0.2628	0.3067

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: Base individual is a white male who possesses a GED. Dependent variable is DEP attrite.

Table 38.   Male Tier III Probability of Attrition Matrix, AFQT 31 – 99

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
31	0.3051	0.3008	0.2966	0.2925	0.2771	0.2601
32	0.3034	0.2993	0.2953	0.2914	0.2767	0.2604
33	0.3017	0.2979	0.2941	0.2903	0.2763	0.2606
34	0.3001	0.2964	0.2928	0.2893	0.2759	0.2609
35	0.2985	0.2950	0.2916	0.2882	0.2755	0.2612
36	0.2968	0.2935	0.2903	0.2869	0.2751	0.2615
37	0.2952	0.2921	0.2891	0.2859	0.2747	0.2617
38	0.2936	0.2907	0.2879	0.2850	0.2743	0.2620
39	0.2921	0.2893	0.2866	0.2840	0.2739	0.2623
40	0.2905	0.2880	0.2854	0.2830	0.2735	0.2626
41	0.2890	0.2866	0.2843	0.2819	0.2731	0.2628
42	0.2874	0.2852	0.2831	0.2809	0.2727	0.2631
43	0.2859	0.2839	0.2819	0.2799	0.2723	0.2634
44	0.2844	0.2826	0.2807	0.2789	0.2719	0.2637
45	0.2829	0.2812	0.2796	0.2779	0.2715	0.2640
46	0.2815	0.2799	0.2784	0.2769	0.2711	0.2642
47	0.2800	0.2786	0.2773	0.2760	0.2707	0.2645
48	0.2786	0.2774	0.2762	0.2750	0.2704	0.2648
49	0.2771	0.2761	0.2751	0.2740	0.2700	0.2651
50	0.2757	0.2748	0.2739	0.2731	0.2696	0.2654
51	0.2743	0.2736	0.2728	0.2721	0.2692	0.2657
52	0.2730	0.2724	0.2718	0.2712	0.2688	0.2659
53	0.2716	0.2711	0.2707	0.2702	0.2684	0.2662
54	0.2702	0.2699	0.2696	0.2693	0.2680	0.2665
55	0.2689	0.2687	0.2685	0.2684	0.2677	0.2668
56	0.2676	0.2675	0.2675	0.2674	0.2673	0.2671
57	0.2663	0.2664	0.2664	0.2665	0.2669	0.2674
58	0.2650	0.2652	0.2654	0.2656	0.2665	0.2677

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
59	0.2637	0.2640	0.2644	0.2647	0.2662	0.2680
60	0.2624	0.2629	0.2634	0.2638	0.2658	0.2682
61	0.2612	0.2618	0.2624	0.2630	0.2654	0.2685
62	0.2599	0.2606	0.2614	0.2621	0.2650	0.2688
63	0.2587	0.2595	0.2604	0.2612	0.2647	0.2691
64	0.2575	0.2584	0.2594	0.2604	0.2643	0.2694
65	0.2563	0.2573	0.2584	0.2595	0.2639	0.2697
66	0.2551	0.2563	0.2575	0.2586	0.2636	0.2700
67	0.2539	0.2552	0.2565	0.2578	0.2632	0.2703
68	0.2528	0.2542	0.2555	0.2570	0.2628	0.2706
69	0.2516	0.2531	0.2546	0.2561	0.2625	0.2709
70	0.2505	0.2521	0.2537	0.2553	0.2621	0.2712
71	0.2494	0.2511	0.2528	0.2545	0.2617	0.2715
72	0.2483	0.2500	0.2519	0.2537	0.2614	0.2718
73	0.2472	0.2490	0.2509	0.2529	0.2610	0.2721
74	0.2461	0.2481	0.2501	0.2521	0.2607	0.2724
75	0.2450	0.2471	0.2492	0.2513	0.2603	0.2727
76	0.2440	0.2461	0.2483	0.2505	0.2599	0.2730
77	0.2429	0.2452	0.2474	0.2497	0.2596	0.2733
78	0.2419	0.2442	0.2465	0.2490	0.2592	0.2736
79	0.2409	0.2433	0.2457	0.2482	0.2589	0.2739
80	0.2399	0.2423	0.2448	0.2474	0.2585	0.2742
81	0.2389	0.2414	0.2440	0.2467	0.2582	0.2745
82	0.2379	0.2405	0.2432	0.2459	0.2578	0.2748
83	0.2370	0.2396	0.2424	0.2452	0.2575	0.2751
84	0.2360	0.2387	0.2415	0.2445	0.2571	0.2754
85	0.2351	0.2379	0.2407	0.2437	0.2568	0.2757
86	0.2341	0.2370	0.2399	0.2430	0.2564	0.2761
87	0.2332	0.2361	0.2392	0.2423	0.2561	0.2764
88	0.2323	0.2353	0.2384	0.2416	0.2558	0.2767
89	0.2314	0.2344	0.2376	0.2410	0.2554	0.2770
90	0.2305	0.2336	0.2368	0.2402	0.2551	0.2773
91	0.2297	0.2328	0.2361	0.2395	0.2547	0.2776
92	0.2288	0.2320	0.2353	0.2388	0.2544	0.2779
93	0.2280	0.2312	0.2346	0.2381	0.2541	0.2782
94	0.2271	0.2304	0.2338	0.2374	0.2537	0.2786
95	0.2263	0.2296	0.2331	0.2368	0.2534	0.2789
96	0.2255	0.2288	0.2324	0.2361	0.2531	0.2792
97	0.2247	0.2281	0.2317	0.2355	0.2527	0.2795
98	0.2239	0.2273	0.2310	0.2348	0.2524	0.2798
99	0.2231	0.2266	0.2303	0.2342	0.2521	0.2801

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: Base individual is a white male who possesses no Education Credential. Dependent variable is DEP attrite.

Table 39.   MEPS Variable Identification

Variable	MEP Station
mep1	Albany, New York Military Entrance Processing Station
mep2	Baltimore, Maryland Military Entrance Processing Station
mep3	Boston, Massachusetts Military Entrance Processing Station
mep4	Buffalo, New York Military Entrance Processing Station
mep5	New York, New York Military Entrance Processing Station
mep6	Harrisburg, Pennsylvania Military Entrance Processing Station
mep7	Philadelphia, Pennsylvania Military Entrance Processing Station
mep8	Pittsburgh, Pennsylvania Military Entrance Processing Station
mep9	Portland, Maine Military Entrance Processing Station
mep10	Springfield, Massachusetts Military Entrance Processing Station
mep11	Syracuse, New York Military Entrance Processing Station
mep12	Tampa, Florida Military Entrance Processing Station
mep13	Atlanta, Georgia Military Entrance Processing Station
mep14	Beckley, West Virginia Military Entrance Processing Station
mep15	Charlotte, North Carolina Military Entrance Processing Station
mep16	Miami, Florida Military Entrance Processing Station
mep17	Fort Jackson, South Carolina Military Entrance Processing Station
mep18	Jacksonville, Florida Military Entrance Processing Station
mep19	Knoxville, Tennessee Military Entrance Processing Station
mep20	Louisville, Kentucky Military Entrance Processing Station
mep21	Montgomery, Alabama Military Entrance Processing Station
mep22	Nashville, Tennessee Military Entrance Processing Station
mep23	San Juan, Puerto Rico Military Entrance Processing Station
mep24	Raleigh, North Carolina Military Entrance Processing Station
mep25	Richmond, Virginia Military Entrance Processing Station
mep26	Albuquerque, New Mexico Military Entrance Processing Station
mep27	Amarillo, Texas Military Entrance Processing Station
mep28	Dallas, Texas Military Entrance Processing Station
mep29	Denver, Colorado Military Entrance Processing Station
mep30	El Paso, Texas Military Entrance Processing Station
mep31	Houston, Texas Military Entrance Processing Station
mep32	Jackson, Mississippi Military Entrance Processing Station
mep33	Kansas City, Missouri Military Entrance Processing Station
mep34	Little Rock, Arkansas Military Entrance Processing Station
mep35	Memphis, Tennessee Military Entrance Processing Station
mep36	New Orleans, Louisiana Military Entrance Processing Station
mep37	Oklahoma City, Oklahoma Military Entrance Processing Station
mep38	San Antonio, Texas Military Entrance Processing Station
mep39	Shreveport, Louisiana Military Entrance Processing Station
mep40	Lansing, Michigan Military Entrance Processing Station
mep41	Chicago, Illinois Military Entrance Processing Station
mep42	Cleveland, Ohio Military Entrance Processing Station
mep43	Columbus, Ohio Military Entrance Processing Station
mep44	Des Moines, Iowa Military Entrance Processing Station

Variable	MEP Station
mep45	Detroit, Michigan Military Entrance Processing Station
mep46	Fargo, North Dakota Military Entrance Processing Station
mep47	Indianapolis, Indiana Military Entrance Processing Station
mep48	Milwaukee, Wisconsin Military Entrance Processing Station
mep49	Minneapolis, Minnesota Military Entrance Processing Station
mep50	Omaha, Nebraska Military Entrance Processing Station
mep51	Sioux Falls, South Dakota Military Entrance Processing Station
mep52	St Louis, Missouri Military Entrance Processing Station
mep53	San Diego, California Military Entrance Processing Station
mep54	Boise, Idaho Military Entrance Processing Station
mep55	Butte, Montana Military Entrance Processing Station
mep56	Sacramento, California Military Entrance Processing Station
mep57	Honolulu, Hawaii Military Entrance Processing Station
mep58	Los Angeles, California Military Entrance Processing Station
mep59	Oakland, California Military Entrance Processing Station
mep60	Phoenix, Arizona Military Entrance Processing Station
mep61	Portland, Oregon Military Entrance Processing Station
mep62	Salt Lake City, Utah Military Entrance Processing Station
mep63	Seattle, Washington Military Entrance Processing Station
mep64	Spokane, Washington Military Entrance Processing Station
mep65	Anchorage, Alaska Military Entrance Processing Station

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 40.   Male, Tier I, MEPS Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
mep1	349466	0.0083	0.0909	0	1
mep2	349466	0.0299	0.1704	0	1
mep3	349466	0.0104	0.1013	0	1
mep4	349466	0.0083	0.0907	0	1
mep5	349466	0.0455	0.2083	0	1
mep6	349466	0.0147	0.1205	0	1
mep7	349466	0.0144	0.1193	0	1
mep8	349466	0.0120	0.1090	0	1
mep9	349466	0.0072	0.0843	0	1
mep10	349466	0.0102	0.1006	0	1
mep11	349466	0.0054	0.0730	0	1
mep12	349466	0.0188	0.1358	0	1
mep13	349466	0.0218	0.1460	0	1
mep14	349466	0.0048	0.0691	0	1
mep15	349466	0.0138	0.1165	0	1
mep16	349466	0.0210	0.1434	0	1
mep17	349466	0.0153	0.1227	0	1
mep18	349466	0.0306	0.1722	0	1
mep19	349466	0.0085	0.0919	0	1
mep20	349466	0.0094	0.0966	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
mep21	349466	0.0192	0.1373	0	1
mep22	349466	0.0116	0.1073	0	1
mep23	349466	0.0061	0.0779	0	1
mep24	349466	0.0165	0.1275	0	1
mep25	349466	0.0211	0.1436	0	1
mep26	349466	0.0055	0.0739	0	1
mep27	349466	0.0066	0.0808	0	1
mep28	349466	0.0297	0.1697	0	1
mep29	349466	0.0192	0.1373	0	1
mep30	349466	0.0063	0.0793	0	1
mep31	349466	0.0363	0.1871	0	1
mep32	349466	0.0066	0.0808	0	1
mep33	349466	0.0181	0.1334	0	1
mep34	349466	0.0076	0.0871	0	1
mep35	349466	0.0078	0.0882	0	1
mep36	349466	0.0145	0.1195	0	1
mep37	349466	0.0162	0.1263	0	1
mep38	349466	0.0280	0.1651	0	1
mep39	349466	0.0114	0.1062	0	1
mep40	349466	0.0132	0.1141	0	1
mep41	349466	0.0289	0.1674	0	1
mep42	349466	0.0155	0.1236	0	1
mep43	349466	0.0152	0.1223	0	1
mep44	349466	0.0088	0.0933	0	1
mep45	349466	0.0167	0.1281	0	1
mep46	349466	0.0028	0.0527	0	1
mep47	349466	0.0215	0.1449	0	1
mep48	349466	0.0146	0.1201	0	1
mep49	349466	0.0113	0.1058	0	1
mep50	349466	0.0056	0.0746	0	1
mep51	349466	0.0041	0.0635	0	1
mep52	349466	0.0232	0.1507	0	1
mep53	349466	0.0465	0.2106	0	1
mep54	349466	0.0048	0.0690	0	1
mep55	349466	0.0050	0.0707	0	1
mep56	349466	0.0227	0.1489	0	1
mep57	349466	0.0042	0.0649	0	1
mep58	349466	0.0432	0.2033	0	1
mep59	349466	0.0244	0.1542	0	1
mep60	349466	0.0197	0.1389	0	1
mep61	349466	0.0166	0.1277	0	1
mep62	349466	0.0082	0.0903	0	1
mep63	349466	0.0152	0.1225	0	1
mep64	349466	0.0066	0.0808	0	1
mep65	349466	0.0027	0.0520	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 41.   Male, Tier II, MEPS Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
mep1	22230	0.0098	0.0983	0	1
mep2	22230	0.0252	0.1567	0	1
mep3	22230	0.0098	0.0985	0	1
mep4	22230	0.0108	0.1036	0	1
mep5	22230	0.0448	0.2068	0	1
mep6	22230	0.0166	0.1278	0	1
mep7	22230	0.0132	0.1142	0	1
mep8	22230	0.0112	0.1050	0	1
mep9	22230	0.0070	0.0832	0	1
mep10	22230	0.0085	0.0921	0	1
mep11	22230	0.0056	0.0745	0	1
mep12	22230	0.0217	0.1456	0	1
mep13	22230	0.0231	0.1503	0	1
mep14	22230	0.0042	0.0645	0	1
mep15	22230	0.0139	0.1173	0	1
mep16	22230	0.0183	0.1341	0	1
mep17	22230	0.0181	0.1333	0	1
mep18	22230	0.0394	0.1946	0	1
mep19	22230	0.0105	0.1018	0	1
mep20	22230	0.0125	0.1111	0	1
mep21	22230	0.0235	0.1516	0	1
mep22	22230	0.0139	0.1169	0	1
mep23	22230	0.0009	0.0307	0	1
mep24	22230	0.0147	0.1204	0	1
mep25	22230	0.0247	0.1553	0	1
mep26	22230	0.0060	0.0771	0	1
mep27	22230	0.0060	0.0774	0	1
mep28	22230	0.0278	0.1643	0	1
mep29	22230	0.0238	0.1526	0	1
mep30	22230	0.0056	0.0748	0	1
mep31	22230	0.0345	0.1824	0	1
mep32	22230	0.0112	0.1052	0	1
mep33	22230	0.0204	0.1413	0	1
mep34	22230	0.0135	0.1152	0	1
mep35	22230	0.0097	0.0981	0	1
mep36	22230	0.0251	0.1563	0	1
mep37	22230	0.0165	0.1273	0	1
mep38	22230	0.0331	0.1788	0	1
mep39	22230	0.0149	0.1213	0	1
mep40	22230	0.0096	0.0974	0	1
mep41	22230	0.0332	0.1790	0	1
mep42	22230	0.0131	0.1137	0	1
mep43	22230	0.0133	0.1146	0	1
mep44	22230	0.0087	0.0930	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
mep45	22230	0.0165	0.1274	0	1
mep46	22230	0.0022	0.0469	0	1
mep47	22230	0.0267	0.1613	0	1
mep48	22230	0.0126	0.1115	0	1
mep49	22230	0.0093	0.0960	0	1
mep50	22230	0.0055	0.0739	0	1
mep51	22230	0.0031	0.0556	0	1
mep52	22230	0.0247	0.1551	0	1
mep53	22230	0.0344	0.1823	0	1
mep54	22230	0.0049	0.0702	0	1
mep55	22230	0.0055	0.0739	0	1
mep56	22230	0.0138	0.1165	0	1
mep57	22230	0.0027	0.0515	0	1
mep58	22230	0.0173	0.1303	0	1
mep59	22230	0.0120	0.1087	0	1
mep60	22230	0.0208	0.1428	0	1
mep61	22230	0.0236	0.1519	0	1
mep62	22230	0.0072	0.0848	0	1
mep63	22230	0.0171	0.1298	0	1
mep64	22230	0.0067	0.0816	0	1
mep65	22230	0.0056	0.0748	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 42.   Male, Tier III, MEPS Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
mep1	8377	0.0085	0.0917	0	1
mep2	8377	0.0310	0.1734	0	1
mep3	8377	0.0125	0.1113	0	1
mep4	8377	0.0168	0.1286	0	1
mep5	8377	0.0333	0.1794	0	1
mep6	8377	0.0238	0.1523	0	1
mep7	8377	0.0184	0.1343	0	1
mep8	8377	0.0159	0.1250	0	1
mep9	8377	0.0055	0.0739	0	1
mep10	8377	0.0117	0.1075	0	1
mep11	8377	0.0057	0.0755	0	1
mep12	8377	0.0140	0.1174	0	1
mep13	8377	0.0161	0.1259	0	1
mep14	8377	0.0058	0.0763	0	1
mep15	8377	0.0184	0.1343	0	1
mep16	8377	0.0096	0.0973	0	1
mep17	8377	0.0214	0.1446	0	1
mep18	8377	0.0265	0.1606	0	1
mep19	8377	0.0066	0.0808	0	1
mep20	8377	0.0070	0.0836	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
mep21	8377	0.0183	0.1339	0	1
mep22	8377	0.0096	0.0973	0	1
mep23	8377	0.0008	0.0289	0	1
mep24	8377	0.0106	0.1025	0	1
mep25	8377	0.0144	0.1193	0	1
mep26	8377	0.0062	0.0785	0	1
mep27	8377	0.0051	0.0715	0	1
mep28	8377	0.0205	0.1418	0	1
mep29	8377	0.0197	0.1390	0	1
mep30	8377	0.0043	0.0654	0	1
mep31	8377	0.0253	0.1571	0	1
mep32	8377	0.0050	0.0706	0	1
mep33	8377	0.0207	0.1422	0	1
mep34	8377	0.0044	0.0663	0	1
mep35	8377	0.0068	0.0822	0	1
mep36	8377	0.0072	0.0843	0	1
mep37	8377	0.0150	0.1217	0	1
mep38	8377	0.0230	0.1500	0	1
mep39	8377	0.0056	0.0747	0	1
mep40	8377	0.0158	0.1245	0	1
mep41	8377	0.0370	0.1888	0	1
mep42	8377	0.0226	0.1485	0	1
mep43	8377	0.0184	0.1343	0	1
mep44	8377	0.0072	0.0843	0	1
mep45	8377	0.0240	0.1530	0	1
mep46	8377	0.0019	0.0437	0	1
mep47	8377	0.0248	0.1556	0	1
mep48	8377	0.0166	0.1277	0	1
mep49	8377	0.0140	0.1174	0	1
mep50	8377	0.0070	0.0836	0	1
mep51	8377	0.0051	0.0715	0	1
mep52	8377	0.0210	0.1434	0	1
mep53	8377	0.0606	0.2387	0	1
mep54	8377	0.0049	0.0698	0	1
mep55	8377	0.0056	0.0747	0	1
mep56	8377	0.0212	0.1442	0	1
mep57	8377	0.0010	0.0309	0	1
mep58	8377	0.0523	0.2226	0	1
mep59	8377	0.0191	0.1369	0	1
mep60	8377	0.0300	0.1705	0	1
mep61	8377	0.0236	0.1519	0	1
mep62	8377	0.0068	0.0822	0	1
mep63	8377	0.0233	0.1508	0	1
mep64	8377	0.0036	0.0597	0	1
mep65	8377	0.0016	0.0394	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 43. Male Probit Regression Results, MEPS

Variable	Coef.	Std. Err.	p-Value
mep1	-0.1621	0.0738	0.0280
mep2	-0.1775	0.0710	0.0120
mep3	-0.1635	0.0709	0.0210
mep4	-0.0578	0.0767	0.4520
mep5	-0.0103	0.0689	0.8810
mep6	-0.1509	0.0730	0.0390
mep7	-0.1153	0.0718	0.1080
mep8	-0.0920	0.0760	0.2260
mep9	-0.1193	0.0720	0.0970
mep10	-0.0453	0.0715	0.5260
mep11	-0.2507	0.0788	0.0010
mep12	-0.0708	0.0661	0.2840
mep13	-0.0250	0.0713	0.7260
mep14	0.0151	0.0806	0.8510
mep15	-0.0904	0.0735	0.2190
mep16	-0.1324	0.0639	0.0380
mep17	-0.0515	0.0717	0.4730
mep18	-0.0008	0.0668	0.9900
mep19	-0.0174	0.0768	0.8210
mep20	-0.0431	0.0786	0.5840
mep21	-0.0513	0.0707	0.4680
mep22	-0.0960	0.0759	0.2060
mep23	-0.5715	0.0673	0.0000
mep24	-0.1960	0.0716	0.0060
mep25	-0.1626	0.0713	0.0230
mep26	-0.0380	0.0713	0.5940
mep27	0.0126	0.0716	0.8610
mep28	-0.1174	0.0680	0.0840
mep29	-0.1324	0.0675	0.0500
mep30	-0.1792	0.0698	0.0100
mep31	-0.1060	0.0659	0.1080
mep32	-0.0660	0.0754	0.3810
mep33	-0.1248	0.0743	0.0930
mep34	-0.0355	0.0757	0.6390
mep35	-0.0944	0.0772	0.2210
mep36	0.0024	0.0693	0.9730
mep37	-0.0800	0.0713	0.2620
mep38	0.0253	0.0647	0.6960
mep39	-0.0447	0.0711	0.5300
mep40	-0.1280	0.0804	0.1110
mep41	-0.0445	0.0804	0.5800
mep42	-0.1067	0.0772	0.1670
mep43	-0.1600	0.0777	0.0400
mep44	-0.1280	0.0804	0.1110

Variable	Coef.	Std. Err.	p-Value
mep45	-0.0843	0.0784	0.2820
mep46	-0.2742	0.0871	0.0020
mep47	-0.1106	0.0782	0.1570
mep48	-0.2015	0.0811	0.0130
mep49	-0.3228	0.0788	0.0000
mep50	-0.1710	0.0803	0.0330
mep51	-0.1633	0.0817	0.0460
mep52	-0.1308	0.0766	0.0880
mep53	-0.1242	0.0569	0.0290
mep54	-0.1665	0.0693	0.0160
mep55	-0.2331	0.0720	0.0010
mep56	-0.2596	0.0575	0.0000
mep57	-0.1897	0.0753	0.0120
mep58	-0.0150	0.0563	0.7900
mep59	-0.1426	0.0569	0.0120
mep60	-0.1983	0.0611	0.0010
mep61	-0.1420	0.0583	0.0150
mep62	-0.0250	0.0662	0.7060
mep63	-0.0925	0.0590	0.1170
mep64	-0.2301	0.0661	0.0010

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 44.   Male Probit, Marginal Effects, Regression Results, MEPS

Variable	Coef.	Std. Err.	p-Value
mep1	-0.0366	0.0153	0.0280
mep2	-0.0399	0.0146	0.0120
mep3	-0.0369	0.0146	0.0210
mep4	-0.0138	0.0177	0.4520
mep5	-0.0025	0.0167	0.8810
mep6	-0.0343	0.0153	0.0390
mep7	-0.0267	0.0157	0.1080
mep8	-0.0215	0.0170	0.2260
mep9	-0.0275	0.0156	0.0970
mep10	-0.0109	0.0167	0.5260
mep11	-0.0539	0.0146	0.0010
mep12	-0.0168	0.0151	0.2840
mep13	-0.0061	0.0171	0.7260
mep14	0.0037	0.0200	0.8510
mep15	-0.0212	0.0164	0.2190
mep16	-0.0304	0.0137	0.0380
mep17	-0.0123	0.0167	0.4730
mep18	-0.0002	0.0164	0.9900
mep19	-0.0042	0.0185	0.8210
mep20	-0.0103	0.0185	0.5840
mep21	-0.0123	0.0165	0.4680

Variable	Coef.	Std. Err.	p-Value
mep22	-0.0224	0.0169	0.2060
mep23	-0.1026	0.0081	0.0000
mep24	-0.0435	0.0143	0.0060
mep25	-0.0368	0.0148	0.0230
mep26	-0.0091	0.0168	0.5940
mep27	0.0031	0.0178	0.8610
mep28	-0.0272	0.0148	0.0840
mep29	-0.0304	0.0145	0.0500
mep30	-0.0401	0.0141	0.0100
mep31	-0.0247	0.0146	0.1080
mep32	-0.0157	0.0173	0.3810
mep33	-0.0288	0.0161	0.0930
mep34	-0.0085	0.0179	0.6390
mep35	-0.0221	0.0172	0.2210
mep36	0.0006	0.0170	0.9730
mep37	-0.0188	0.0161	0.2620
mep38	0.0063	0.0162	0.6960
mep39	-0.0107	0.0167	0.5300
mep40	-0.0294	0.0173	0.1110
mep41	-0.0107	0.0189	0.5800
mep42	-0.0248	0.0170	0.1670
mep43	-0.0362	0.0161	0.0400
mep44	-0.0294	0.0173	0.1110
mep45	-0.0198	0.0177	0.2820
mep46	-0.0582	0.0157	0.0020
mep47	-0.0257	0.0171	0.1570
mep48	-0.0446	0.0161	0.0130
mep49	-0.0669	0.0135	0.0000
mep50	-0.0384	0.0164	0.0330
mep51	-0.0368	0.0168	0.0460
mep52	-0.0301	0.0165	0.0880
mep53	-0.0287	0.0124	0.0290
mep54	-0.0375	0.0142	0.0160
mep55	-0.0506	0.0137	0.0010
mep56	-0.0559	0.0107	0.0000
mep57	-0.0422	0.0150	0.0120
mep58	-0.0036	0.0136	0.7900
mep59	-0.0326	0.0121	0.0120
mep60	-0.0440	0.0122	0.0010
mep61	-0.0324	0.0124	0.0150
mep62	-0.0060	0.0158	0.7060
mep63	-0.0217	0.0132	0.1170
mep64	-0.0501	0.0126	0.0010

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

APPENDIX B – ANALYSIS OF WOMEN

Table 45.   Female Tier I Probability of Attrition Matrix, AFQT 31 – 99

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
31	0.3819	0.3839	0.3864	0.3878	0.3956	0.4055
32	0.3812	0.3832	0.3857	0.3872	0.3952	0.4053
33	0.3805	0.3825	0.3851	0.3866	0.3948	0.4050
34	0.3798	0.3819	0.3844	0.3860	0.3943	0.4048
35	0.3791	0.3812	0.3838	0.3854	0.3939	0.4046
36	0.3784	0.3805	0.3831	0.3848	0.3935	0.4044
37	0.3777	0.3799	0.3825	0.3843	0.3931	0.4041
38	0.3770	0.3792	0.3818	0.3836	0.3926	0.4039
39	0.3763	0.3785	0.3812	0.3831	0.3922	0.4037
40	0.3756	0.3779	0.3806	0.3825	0.3918	0.4035
41	0.3749	0.3772	0.3799	0.3819	0.3914	0.4032
42	0.3742	0.3765	0.3793	0.3813	0.3909	0.4030
43	0.3735	0.3759	0.3786	0.3807	0.3905	0.4028
44	0.3728	0.3752	0.3780	0.3802	0.3901	0.4026
45	0.3721	0.3746	0.3773	0.3796	0.3897	0.4023
46	0.3714	0.3739	0.3767	0.3790	0.3892	0.4021
47	0.3706	0.3732	0.3760	0.3784	0.3888	0.4019
48	0.3699	0.3726	0.3754	0.3778	0.3884	0.4017
49	0.3692	0.3719	0.3748	0.3772	0.3879	0.4014
50	0.3686	0.3712	0.3741	0.3767	0.3875	0.4012
51	0.3679	0.3706	0.3735	0.3761	0.3871	0.4010
52	0.3672	0.3699	0.3728	0.3755	0.3867	0.4008
53	0.3665	0.3693	0.3722	0.3749	0.3862	0.4005
54	0.3658	0.3686	0.3715	0.3743	0.3858	0.4003
55	0.3651	0.3679	0.3709	0.3737	0.3854	0.4001
56	0.3644	0.3673	0.3703	0.3732	0.3850	0.3996
57	0.3637	0.3666	0.3696	0.3726	0.3845	0.3996
58	0.3630	0.3660	0.3690	0.3720	0.3841	0.3994
59	0.3623	0.3653	0.3683	0.3714	0.3837	0.3992
60	0.3616	0.3647	0.3677	0.3708	0.3833	0.3990
61	0.3609	0.3640	0.3671	0.3703	0.3828	0.3987
62	0.3602	0.3633	0.3664	0.3697	0.3824	0.3985
63	0.3595	0.3627	0.3658	0.3691	0.3820	0.3983
64	0.3588	0.3620	0.3652	0.3685	0.3816	0.3981
65	0.3581	0.3614	0.3645	0.3679	0.3811	0.3978
66	0.3574	0.3607	0.3639	0.3674	0.3807	0.3976
67	0.3567	0.3601	0.3632	0.3668	0.3803	0.3974
68	0.3560	0.3594	0.3626	0.3662	0.3799	0.3972
69	0.3553	0.3588	0.3620	0.3656	0.3795	0.3969
70	0.3546	0.3581	0.3613	0.3650	0.3790	0.3967

AFQT	Age 18	Age 19	Age 20	Age 21	Age 25	Age 30
71	0.3539	0.3574	0.3607	0.3645	0.3786	0.3965
72	0.3533	0.3568	0.3601	0.3639	0.3782	0.3963
73	0.3526	0.3561	0.3594	0.3633	0.3778	0.3960
74	0.3519	0.3555	0.3588	0.3627	0.3773	0.3958
75	0.3512	0.3548	0.3582	0.3621	0.3769	0.3956
76	0.3505	0.3542	0.3575	0.3616	0.3765	0.3954
77	0.3498	0.3535	0.3569	0.3610	0.3761	0.3951
78	0.3491	0.3529	0.3563	0.3604	0.3756	0.3949
79	0.3484	0.3522	0.3556	0.3598	0.3752	0.3947
80	0.3477	0.3516	0.3550	0.3593	0.3749	0.3945
81	0.3471	0.3509	0.3544	0.3587	0.3744	0.3942
82	0.3464	0.3503	0.3537	0.3581	0.3740	0.3940
83	0.3457	0.3496	0.3531	0.3575	0.3735	0.3938
84	0.3450	0.3490	0.3525	0.3570	0.3731	0.3936
85	0.3443	0.3483	0.3518	0.3564	0.3727	0.3933
86	0.3436	0.3477	0.3512	0.3558	0.3723	0.3931
87	0.3429	0.3470	0.3506	0.3552	0.3718	0.3929
88	0.3423	0.3464	0.3499	0.3547	0.3714	0.3927
89	0.3416	0.3457	0.3493	0.3541	0.3710	0.3924
90	0.3409	0.3451	0.3487	0.3535	0.3706	0.3922
91	0.3402	0.3444	0.3481	0.3530	0.3702	0.3920
92	0.3395	0.3438	0.3474	0.3524	0.3697	0.3918
93	0.3388	0.3431	0.3468	0.3518	0.3693	0.3915
94	0.3382	0.3425	0.3462	0.3512	0.3689	0.3913
95	0.3375	0.3419	0.3455	0.3507	0.3685	0.3911
96	0.3368	0.3412	0.3449	0.3501	0.3681	0.3909
97	0.3361	0.3406	0.3443	0.3495	0.3676	0.3906
98	0.3354	0.3399	0.3437	0.3490	0.3672	0.3904
99	0.3348	0.3393	0.3430	0.3484	0.3668	0.3902

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: This individual is a white female who possesses a high school diploma. Dependent variable is DEP attrite.

Table 46. Female, Tier I, MEPS Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
mep1	91044	0.0077	0.0873	0	1
mep2	91044	0.0284	0.1662	0	1
mep3	91044	0.0089	0.0938	0	1
mep4	91044	0.0081	0.0898	0	1
mep5	91044	0.0455	0.2083	0	1
mep6	91044	0.0152	0.1223	0	1
mep7	91044	0.0131	0.1136	0	1
mep8	91044	0.0104	0.1015	0	1
mep9	91044	0.0068	0.0821	0	1
mep10	91044	0.0085	0.0916	0	1
mep11	91044	0.0052	0.0721	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
mep12	91044	0.0207	0.1425	0	1
mep13	91044	0.0254	0.1575	0	1
mep14	91044	0.0040	0.0632	0	1
mep15	91044	0.0118	0.1078	0	1
mep16	91044	0.0218	0.1460	0	1
mep17	91044	0.0159	0.1251	0	1
mep18	91044	0.0351	0.1842	0	1
mep19	91044	0.0080	0.0893	0	1
mep20	91044	0.0089	0.0940	0	1
mep21	91044	0.0206	0.1420	0	1
mep22	91044	0.0112	0.1053	0	1
mep23	91044	0.0048	0.0688	0	1
mep24	91044	0.0195	0.1383	0	1
mep25	91044	0.0251	0.1564	0	1
mep26	91044	0.0065	0.0801	0	1
mep27	91044	0.0073	0.0854	0	1
mep28	91044	0.0251	0.1565	0	1
mep29	91044	0.0208	0.1428	0	1
mep30	91044	0.0072	0.0843	0	1
mep31	91044	0.0326	0.1775	0	1
mep32	91044	0.0075	0.0865	0	1
mep33	91044	0.0150	0.1216	0	1
mep34	91044	0.0075	0.0865	0	1
mep35	91044	0.0074	0.0857	0	1
mep36	91044	0.0150	0.1217	0	1
mep37	91044	0.0144	0.1192	0	1
mep38	91044	0.0300	0.1706	0	1
mep39	91044	0.0116	0.1069	0	1
mep40	91044	0.0131	0.1138	0	1
mep41	91044	0.0279	0.1647	0	1
mep42	91044	0.0165	0.1275	0	1
mep43	91044	0.0139	0.1171	0	1
mep44	91044	0.0078	0.0882	0	1
mep45	91044	0.0160	0.1254	0	1
mep46	91044	0.0030	0.0544	0	1
mep47	91044	0.0185	0.1347	0	1
mep48	91044	0.0149	0.1213	0	1
mep49	91044	0.0096	0.0975	0	1
mep50	91044	0.0053	0.0723	0	1
mep51	91044	0.0044	0.0659	0	1
mep52	91044	0.0200	0.1402	0	1
mep53	91044	0.0507	0.2194	0	1
mep54	91044	0.0052	0.0721	0	1
mep55	91044	0.0067	0.0814	0	1
mep56	91044	0.0237	0.1522	0	1
mep57	91044	0.0044	0.0665	0	1

Variable	Obs	Mean	Std. Dev.	Min	Max
mep58	91044	0.0461	0.2097	0	1
mep59	91044	0.0243	0.1539	0	1
mep60	91044	0.0222	0.1474	0	1
mep61	91044	0.0164	0.1271	0	1
mep62	91044	0.0064	0.0799	0	1
mep63	91044	0.0145	0.1196	0	1
mep64	91044	0.0064	0.0800	0	1
mep65	91044	0.0033	0.0572	0	1

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.

Table 47.   Female Probit Regression Results, MEPS

Variable	Coef.	Std. Err.	p-Value
mep1	-0.1156	0.1243	0.3530
mep2	-0.1840	0.1181	0.1190
mep3	-0.1596	0.1197	0.1820
mep4	-0.0611	0.1284	0.6340
mep5	-0.0771	0.1142	0.5000
mep6	-0.1622	0.1213	0.1810
mep7	-0.1266	0.1203	0.2930
mep8	-0.0628	0.1278	0.6230
mep9	-0.1920	0.1217	0.1150
mep10	-0.1367	0.1217	0.2610
mep11	-0.3601	0.1339	0.0070
mep12	-0.0512	0.1094	0.6390
mep13	0.0276	0.1179	0.8150
mep14	0.2579	0.1378	0.0610
mep15	-0.0061	0.1234	0.9600
mep16	-0.1319	0.1060	0.2130
mep17	0.0527	0.1192	0.6590
mep18	0.0212	0.1108	0.8480
mep19	0.1078	0.1287	0.4020
mep20	0.0593	0.1319	0.6530
mep21	0.0350	0.1168	0.7650
mep22	-0.0023	0.1263	0.9850
mep23	-0.4248	0.1151	0.0000
mep24	-0.1336	0.1180	0.2580
mep25	-0.0425	0.1177	0.7180
mep26	-0.1377	0.1187	0.2460
mep27	0.1178	0.1189	0.3220
mep28	-0.0301	0.1132	0.7900
mep29	-0.1250	0.1120	0.2640
mep30	-0.0293	0.1151	0.7990
mep31	-0.0280	0.1095	0.7980
mep32	0.1107	0.1251	0.3760
mep33	-0.0245	0.1244	0.8440

Variable	Coef.	Std. Err.	p-Value
mep34	0.1577	0.1265	0.2130
mep35	-0.1215	0.1307	0.3530
mep36	0.0717	0.1155	0.5350
mep37	-0.0115	0.1194	0.9230
mep38	0.0481	0.1072	0.6540
mep39	-0.0246	0.1189	0.8360
mep40	-0.1224	0.1339	0.3610
mep41	-0.0802	0.1336	0.5480
mep42	-0.0265	0.1279	0.8360
mep43	-0.0671	0.1296	0.6050
mep44	-0.1859	0.1369	0.1750
mep45	-0.0519	0.1307	0.6910
mep46	-0.2597	0.1465	0.0760
mep47	-0.0351	0.1305	0.7880
mep48	-0.2007	0.1348	0.1370
mep49	-0.2581	0.1325	0.0510
mep50	-0.0341	0.1360	0.8020
mep51	-0.1205	0.1373	0.3800
mep52	-0.0557	0.1280	0.6630
mep53	-0.1794	0.0941	0.0570
mep54	0.0186	0.1142	0.8700
mep55	-0.1304	0.1158	0.2600
mep56	-0.2641	0.0951	0.0050
mep57	-0.2606	0.1290	0.0430
mep58	-0.0537	0.0930	0.5630
mep59	-0.1571	0.0945	0.0960
mep60	-0.2687	0.1010	0.0080
mep61	-0.1366	0.0972	0.1600
mep62	-0.0311	0.1142	0.7860
mep63	-0.0497	0.0987	0.6140
mep64	-0.1060	0.1109	0.3390

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: Base individual is a white female with AFQT 58, Age 20, and entered DEP in FY1999 who possesses a high school diploma. Dependent variable is DEP attrite.

Table 48.   Female Probit, Marginal Effects, Regression Results, MEPS

Variable	Coef.	Std. Err.	p-Value
mep1	-0.0435	0.0472	0.3530
mep2	-0.0683	0.0449	0.1190
mep3	-0.0596	0.0454	0.1820
mep4	-0.0232	0.0490	0.6340
mep5	-0.0292	0.0437	0.5000
mep6	-0.0605	0.0461	0.1810
mep7	-0.0475	0.0458	0.2930
mep8	-0.0238	0.0488	0.6230

Variable	Coef.	Std. Err.	p-Value
mep9	-0.0712	0.0460	0.1150
mep10	-0.0512	0.0462	0.2610
mep11	-0.1285	0.0490	0.0070
mep12	-0.0195	0.0419	0.6390
mep13	0.0106	0.0452	0.8150
mep14	0.1014	0.0535	0.0610
mep15	-0.0023	0.0473	0.9600
mep16	-0.0494	0.0405	0.2130
mep17	0.0203	0.0458	0.6590
mep18	0.0081	0.0425	0.8480
mep19	0.0418	0.0496	0.4020
mep20	0.0229	0.0507	0.6530
mep21	0.0135	0.0448	0.7650
mep22	-0.0009	0.0484	0.9850
mep23	-0.1490	0.0415	0.0000
mep24	-0.0501	0.0450	0.2580
mep25	-0.0162	0.0450	0.7180
mep26	-0.0516	0.0450	0.2460
mep27	0.0458	0.0458	0.3220
mep28	-0.0115	0.0433	0.7900
mep29	-0.0469	0.0428	0.2640
mep30	-0.0112	0.0440	0.7990
mep31	-0.0107	0.0420	0.7980
mep32	0.0430	0.0482	0.3760
mep33	-0.0093	0.0476	0.8440
mep34	0.0615	0.0488	0.2130
mep35	-0.0456	0.0495	0.3530
mep36	0.0277	0.0444	0.5350
mep37	-0.0044	0.0457	0.9230
mep38	0.0185	0.0411	0.6540
mep39	-0.0094	0.0455	0.8360
mep40	-0.0460	0.0508	0.3610
mep41	-0.0304	0.0509	0.5480
mep42	-0.0101	0.0489	0.8360
mep43	-0.0254	0.0494	0.6050
mep44	-0.0690	0.0515	0.1750
mep45	-0.0197	0.0499	0.6910
mep46	-0.0949	0.0538	0.0760
mep47	-0.0134	0.0499	0.7880
mep48	-0.0743	0.0507	0.1370
mep49	-0.0943	0.0495	0.0510
mep50	-0.0130	0.0519	0.8020
mep51	-0.0453	0.0519	0.3800
mep52	-0.0212	0.0489	0.6630
mep53	-0.0667	0.0363	0.0570
mep54	0.0072	0.0438	0.8700

Variable	Coef.	Std. Err.	p-Value
mep55	-0.0489	0.0440	0.2600
mep56	-0.0964	0.0366	0.0050
mep57	-0.0952	0.0455	0.0430
mep58	-0.0204	0.0357	0.5630
mep59	-0.0586	0.0363	0.0960
mep60	-0.0980	0.0387	0.0080
mep61	-0.0512	0.0372	0.1600
mep62	-0.0118	0.0437	0.7860
mep63	-0.0189	0.0378	0.6140
mep64	-0.0399	0.0422	0.3390

Source: Derived from data provided by Defense Manpower Data Center (DMDC), 2009.
Note: Base individual is a white female with AFQT 58, Age 20, and entered DEP in FY1999 who possesses a high school diploma. Dependent variable is DEP attrite.

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