A comparison of retirement saving behavior between active duty military members and civilians

by

David M. Jayne

B.S., Kansas State University, 1998
M.S., University of Colorado, 2003
M.S., College for Financial Planning, 2008

AN ABSTRACT OF A DISSERTATION

submitted in partial fulfillment of the requirements for the degree

DOCTOR OF PHILOSOPHY

School of Family Studies and Human Services
College of Health and Human Services

KANSAS STATE UNIVERSITY
Manhattan, Kansas

2020

Abstract

Secondary data was used from the 2018 Financial Industry Regulatory Authority (FINRA) Investor Education Foundation's National Financial Capability Study (NFCS) to investigate predictors of retirement savings behavior of active duty military personnel. Using the framework of social learning theory, this study investigated personal, environmental, and behavioral factors related to making regular contributions to a retirement plan for active duty military personnel compared to civilian personnel.

Results of the study indicate that some similarities exist between the two populations regarding propensity to contribute to a retirement plan. Higher levels of subjective financial knowledge, objective financial knowledge, and financial confidence all showed a positive correlation for both groups. Similarly, having an established emergency fund and calculating retirement needs were positively correlated. Saving for a child's college fund and having student loans showed positive correlations, indicating neither is crowding out retirement savings.

Analyses also revealed several differences between the two populations. Workplace financial education showed a positive correlation for the civilian population, but not the military. Overspending had a negative association with retirement saving for the civilian populace, while positive credit card behaviors such as paying off the balance each month showed a positive association. Neither was a significant predictor for the military sample. These results indicate that the active duty and civilian populations differ in several aspects.

This dissertation adds to the literature by examining this financial outcome of a little researched population of interest, active duty military personnel, which have not been fully addressed in prior research. An increased emphasis on financial education that focuses on increasing the financial self-efficacy of its members and utilizes instructors to whom the military

audience admires and relates may be one effective approach to increasing retirement savings plan participation rates for the military. Implications of this research are important to active duty military members, Department of Defense policy makers, and the financial services industry who service the military community. They will become increasing more important due to recent changes in the military retirement system that is converting from a purely defined-benefit plan to a hybrid plan that includes some elements of a defined-contribution program.

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Chapter 1 -   Introduction

Military members have unique financial challenges, including deployments, frequent

moves, impacts to spouse careers, and a retirement plan that does not vest until 20 years of

service. While each branch of the military provides some form of financial education that has

shown some positive effects, such as increased participation in retirement savings plans and

reduced debt (Skimmyhorn, 2016a), military members have been shown to have more

problematic financial behaviors than their civilian counterparts, such as negative credit card

behaviors (Skimmyhorn, 2016b). Personal finance issues can negatively impact a service

member's career, including the loss of one's security clearance or non-competitiveness for

premier billets. Furthermore, money problems combined with the stress of a military career can

lead to disastrous consequences such as an increased risk of homelessness (Elbogen, Sullivan,

Wolfe, Wagner, & Beckham, 2013). The current research will focus on understanding the

personal, environmental, and behavioral factors that influence active duty military members to

regularly contribute to a retirement plan in comparison to their civilian counterparts. This insight

is critical due to the Department of Defense's recent transition from a defined benefit retirement

plan to a hybrid defined benefit/defined contribution plan that more closely resembles those

available in the civilian world. This analysis will provide the understanding necessary to

influence individual behavior and related policy decisions.

Population: Active Duty Military

The military of the United States is composed of four branches of service organized

under the Department of Defense (DoD): Air Force (USAF), Army (USA), Navy (USN), and the

Marine Corps (USMC). The Coast Guard (USCG), which is a component of the Department of

Homeland Security, is generally also included as a military service. However, this research will

focus on the four branches aligned under the DoD due to their similarities in policies and training

and to align with the preponderance of research on military members concentrated on the DoD

branches of service. Additionally, the research will focus on active duty members, which does

not include retirees, reservists, or national guard since these categories of personnel are too

dissimilar in work experience and financial circumstances compared to their active duty peers.

DoD Composition

The size and composition of the military is dictated by Congress based on approved

appropriations and authorizations bills of the DoD. The demographics of the force are captured

in an annual report, the "Profile of the Military Community," most recently updated in 2017

(U.S. Department of Defense, 2017a). The total active duty force was 1.25M in 2017, which was

12.0% smaller than 2010 (1.42M). The Army makes up the largest portion of the DoD at 36.5%,

while the Marine Corps is the smallest (14.2%). A summary of the active duty force size and

composition by service is show in Table 1.1.

Table 1.1 *Department of Defense Active Duty Composition by Service*

Service	Enlisted	Officers	Total	% of Total Force
Air Force	256,983	61,597	318,580	24.6%
Army	379,937	92,110	472,047	36.5%
Navy	265,024	54,468	319,492	24.7%
Marine Corps	163,290	21,111	184,401	14.2%
Total	1,065,234	229,286	1,294,520	100.0%

Note: Source is 2017 DoD Demographics Report

Force Structure

Personnel in each military branch are designated by rank, and they consist of enlisted

servicemembers, warrant officers, and commissioned officers. Commissioned officers require a

bachelor's degree, while warrant officers achieve their rank based on their technical acumen. A

detailed breakout of each paygrade by service is shown in Table 1.2.

Overall, about 6 in 7 (82.3%) of military members are enlisted, while the remainder are

warrant or commissioned officers (1.4% and 16.3%, respectively). Of note, the USMC has the

highest percentage of enlisted members (88.6%), which is significantly higher than the other

three services. Subsequently, the USMC also has the lowest percentage of commissioned officers

(10.3%), while the Air Force has nearly double that percentage (19.3%).

Table 1.2 *Department of Defense Active Duty Personnel by Branch and Pay Grade*

Paygrade	Service									
	Air Force		Army		Navy		USMC		Total DoD	
	N	%	N	%	N	%	N	%	N	%
Enlisted Servicemembers										
E1	10,595	3.3%	24,674	5.2%	11,006	3.4%	11,472	6.2%	57,747	4.5%
E2	8,141	2.6%	29,173	6.2%	12,981	4.1%	21,318	11.6%	71,613	5.5%
E3	51,275	16.1%	47,014	10.0%	46,704	14.6%	41,503	22.5%	186,496	14.4%
E4	53,103	16.7%	111,231	23.6%	52,430	16.4%	34,971	19.0%	251,735	19.4%
E5	61,922	19.4%	65,587	13.9%	64,430	20.2%	26,345	14.3%	218,284	16.9%
E6	39,574	12.4%	54,044	11.4%	47,242	14.8%	13,827	7.5%	154,687	11.9%
E7	24,776	7.8%	34,104	7.2%	21,102	6.6%	8,449	4.6%	88,431	6.8%
E8	5,011	1.6%	10,775	2.3%	6,531	2.0%	3,848	2.1%	26,165	2.0%
E9	2,586	0.8%	3,335	0.7%	2,598	0.8%	1,557	0.8%	10,076	0.8%
Tot E1-E9	**256,983**	**80.7%**	**379,937**	**80.5%**	**265,024**	**83.0%**	**163,290**	**88.6%**	**1,065,234**	**82.3%**
Warrant Officers										
W1	N/A	N/A	2,174	0.5%	0	0.0%	231	0.1%	2,405	0.2%
W2	N/A	N/A	5,459	1.2%	585	0.2%	832	0.5%	6,876	0.5%
W3	N/A	N/A	4,081	0.9%	648	0.2%	601	0.3%	5,330	0.4%
W4	N/A	N/A	2,087	0.4%	380	0.1%	291	0.2%	2,758	0.2%
W5	N/A	N/A	554	0.1%	79	0.0%	107	0.1%	740	0.1%
Tot W1-W5	**N/A**	**N/A**	**14,355**	**3.0%**	**1,692**	**0.5%**	**2,062**	**1.1%**	**18,109**	**1.4%**
Commissioned Officers										
O1	7,324	2.3%	9,135	1.9%	6,990	2.2%	3,158	1.7%	26,607	2.1%
O2	6,651	2.1%	11,040	2.3%	6,595	2.1%	3,386	1.8%	27,672	2.1%
O3	20,968	6.6%	29,382	6.2%	18,561	5.8%	6,028	3.3%	74,939	5.8%
O4	13,292	4.2%	14,911	3.2%	10,631	3.3%	3,857	2.1%	42,691	3.3%
O5	9,751	3.1%	8,811	1.9%	6,629	2.1%	1,892	1.0%	27,083	2.1%
O6	3,313	1.0%	4,158	0.9%	3,160	1.0%	642	0.3%	11,273	0.9%

O7	153	0.0%	135	0.0%	98	0.0%	36	0.0%	422	0.0%
O8	91	0.0%	125	0.0%	64	0.0%	26	0.0%	306	0.0%
O9	41	0.0%	47	0.0%	39	0.0%	20	0.0%	147	0.0%
O10	13	0.0%	11	0.0%	9	0.0%	4	0.0%	37	0.0%
Total O1-09	**77,755**	**19.3%**	**77,755**	**16.5%**	**52,776**	**16.5%**	**19,049**	**10.3%**	**211,177**	**16.3%**

Note: Source is 2017 DoD Demographics Report
[1]*The U.S. Air Force does not have warrant officers.*

Descriptive Statistics

Individual service member characteristics are also reported in the 2017 DoD

Demographics Report. A summary of the results is shown in Table 1.3. In general, active duty

military are predominately male (83.8%), white (68.7%), young (28.3 years old on average),

married (52.6%), and highly educated with 21.8% holding a bachelor's degree or higher.

Table 1.3 *Department of Defense Active Duty Descriptive Statistics*

Characteristic	Service				
	Air Force	Army	Navy	USMC	Total DoD
Gender					
Male	80.2%	85.1%	80.8%	91.6%	83.8%
Female	19.8%	14.9%	19.2%	8.4%	16.2%
Race					
American Indian/Alaskan Native	0.7%	0.7%	2.4%	1.1%	1.2%
Asian	3.8%	4.8%	5.6%	2.9%	4.5%
Black or African American	14.5%	21.8%	17.2%	10.7%	17.3%
Multi-racial	4.1%	N/A[1]	7.8%	1.0%	3.1%
Native Hawaiian or other Pacific Islander	1.1%	1.1%	1.1%	1.1%	1.1%
Other/Unknown	4.2%	4.5%	4.0%	3.6%	4.2%
White	71.7%	67.0%	61.8%	79.7%	68.7%
Age (mean in years)	29.0	28.8	28.8	25.1	28.3
Married	55.4%	55.5%	51.8%	41.7%	52.6%
Education					
Less than HS degree	0.0%	0.2%	0.3%	0.0%	0.2%
HS degree or some college	51.7%	69.3%	69.2%	84.7%	67.1%
Associate's degree	19.9%	5.6%	6.6%	2.2%	8.9%
Bachelor's degree	14.4%	16.0%	11.0%	9.9%	13.5%
Advanced degree	12.7%	8.6%	7.0%	2.3%	8.3%
Unknown	1.3%	0.2%	6.0%	0.9%	2.0%

Note: Source is 2017 DoD Demographics Report
[1]*The U.S. Army does not collect data on multi-racial personnel.*

Pay and Entitlements

Military pay is determined annually by Congress and has several components including pay and allowances [basic pay, basic allowance for housing (BAH), housing allowance, basic sustenance allowance (BAS)], subsidized benefits (health care, child care, tuition assistance), and deferred benefits (retirement plans, Post-9/11 G.I. Bill). In general, pay is taxable income while allowances are not. Basic pay is based on rank and years of service, while BAH is determined by rank, location, and whether the member has dependents. BAS is a set rate for officers and a slightly higher rate for enlisted members. A summary of this pay and allowances for various paygrades is depicted in Table 1.4. Overall, the DoD calculates the Regular Military Compensation (RMC) of its enlisted members to be in the 90th percentile compared to civilians with similar education and experience, and the 83rd percentile for officers (U.S. Department of Defense, 2012). However, this assessment does not include the impact of a service member's military career on spousal earnings, which can be significant. This impact is discussed in detail in the literature review section of the paper.

The military also offers special pay and incentives for various categories: hazardous, arduous duty, assignment (location), career incentive, accession, proficiency (foreign language), retention, responsibility, rehabilitation, and skill conversion (Pay and Allowances of the Uniformed Services, 37 U.S.C., 2019). These pays can vary from a small daily stipend (i.e. $8.33/day for Family Separation Allowance) to $35,000/year for the Navy's Nuclear Officers Continuation Bonus.

Table 1.4 *Monthly Compensation for Active Duty Personnel by Pay Grade and Time in Service*

Paygrade	Time in Service (Years)	Base Pay/ Month	BAH w/ Dependents[2]	BAH w/o Dependents[2]	BAS	Total w/ Dependents	Total w/o Dependents
			Enlisted Servicemembers				
E1	<4 mo	$1,554	$1,437	$1,212	$369	$3,360	$3,135
E2	<2	$1,884	$1,437	$1,212	$369	$3,690	$3,465
E3	2.0	$2,106	$1,437	$1,212	$369	$3,912	$3,687
E4	4.0	$2,555	$1,437	$1,212	$369	$4,361	$4,136
E5	8.0	$3,207	$1,596	$1,245	$369	$5,172	$4,821
E6	12.0	$3,875	$1,734	$1,296	$369	$5,978	$5,540
E7	16.0	$4,610	$1,770	$1,440	$369	$6,749	$6,419
E8	20.0	$5,374	$1,815	$1,626	$369	$7,558	$7,369
E9	24.0	$6,727	$1,905	$1,662	$369	$9,001	$8,758
			Warrant Officers				
W1	<2	$3,116	$1,743	$1,386	$254	$5,113	$4,756
W2	6.0	$4,291	$1,791	$1,623	$254	$6,336	$6,168
W3	12.0	$5,482	$1,848	$1,668	$254	$7,584	$7,404
W4	18.0	$6,859	$1,929	$1,740	$254	$9,042	$8,853
W5	24.0	$8,504	$2,028	$1,779	$254	$10,786	$10,537
			Commissioned Officers				
O1	<2	$3,188	$1,614	$1,272	$254	$5,056	$4,714
O2	2.0	$4,184	$1,731	$1,545	$254	$6,169	$5,983
O3	4.0	$5,672	$1,845	$1,680	$254	$7,771	$7,606
O4	10.0	$7,236	$2,058	$1,767	$254	$9,548	$9,257
O5	16.0	$8,751	$2,208	$1,791	$254	$11,213	$10,796
O6	22.0	$10,841	$2,226	$1,830	$254	$13,321	$12,925
O7	26.0	$12,986	$2,244	$1,869	$254	$15,484	$15,109
O8	30.0	$13,245	$2,244	$1,869	$254	$15,743	$15,368
O9	34.0	$16,025[1]	$2,244	$1,869	$254	$18,523	$18,148
O10	38.0	$16,025[1]	$2,244	$1,869	$254	$18,523	$18,148

Note: Source is 2017 DoD Demographics Report
[1]Limited to the top Level II pay of the Federal Government's Executive Schedule
[2]Location corresponds to Hampton, VA 23665

Original Military Retirement System

The military retirement system was established by the Army and Air Force Vitalization

and Retirement Equalization Act of 1948, which did not change until 2018. That compensation

package was a non-contributory defined benefit annuity equating to 2.5% of the service

member's basic pay multiplied by the number of years of service that vested after 20 years of service. This retirement benefit is indexed to inflation using the Consumer Price Index (CPI) and adjusted on an annual basis. However, 83% of servicemembers left the force without vesting for this benefit (Asch, Mattock, & Hosek, 2015).

In addition to the military's defined benefit (DB) plan, servicemembers have been able to contribute to a 401(k)-style defined contribution (DC) plan known as the Thrift Savings Plan (TSP) since 2001, with a Roth TSP option beginning in 2012 (Philpott, 2014). Even though the DoD did not match TSP contributions for servicemembers until 2019, it has proven to be a popular retirement investment choice, with participation growing from 22.6% to 56.1% from 2007 to 2018 as shown in Figure 1.1 ("TSP Investing Strategies: Building Wealth While Working for Uncle Sam, 2020).

Participation rates do not compare favorably with the civilian population, where two-thirds of adults put at least some money towards retirement (Mullen, Wilson, & Burgess, 2013). In comparison to the growth of TSP participation of the military members, participation of civil servants in the Federal Employee Retirement System (FERS) grew from roughly 40% in its first year of existence to around 80% ten years later. It remained near 80% for the next two decades but increased again after automatic enrollment was instituted in 2010. Participation for FERS employees ended 2018 at 90.3% ("TSP Investing Strategies: Building Wealth While Working for Uncle Sam, 2020).

Research has shown significant gaps in participation rates between military branches and rank of personnel. The Navy led all services in participation rate at 61.4%, significantly higher than the other services, with the Air Force at 40.1%, Marine Corps at 35.8%, and the Army at

31.8% (Philpott, 2014). In general, TSP participation by officers is greater than enlisted, and participation increases with rank and years of service (Henning, 2011).

Average balances of active duty TSP accounts has grown steadily since 2012, when the average traditional TSP account was $14,039 (Roth TSP was $553 in its first year of existence) as shown in Figure 1.2. These amounts stood at $24,988 (Traditional TSP) and $8,080 (Roth TSP) in 2018. By contrast, the average FERS TSP account was $139,560 at the end of 2018 ("TSP Investing Strategies: Building Wealth While Working for Uncle Sam, 2020).
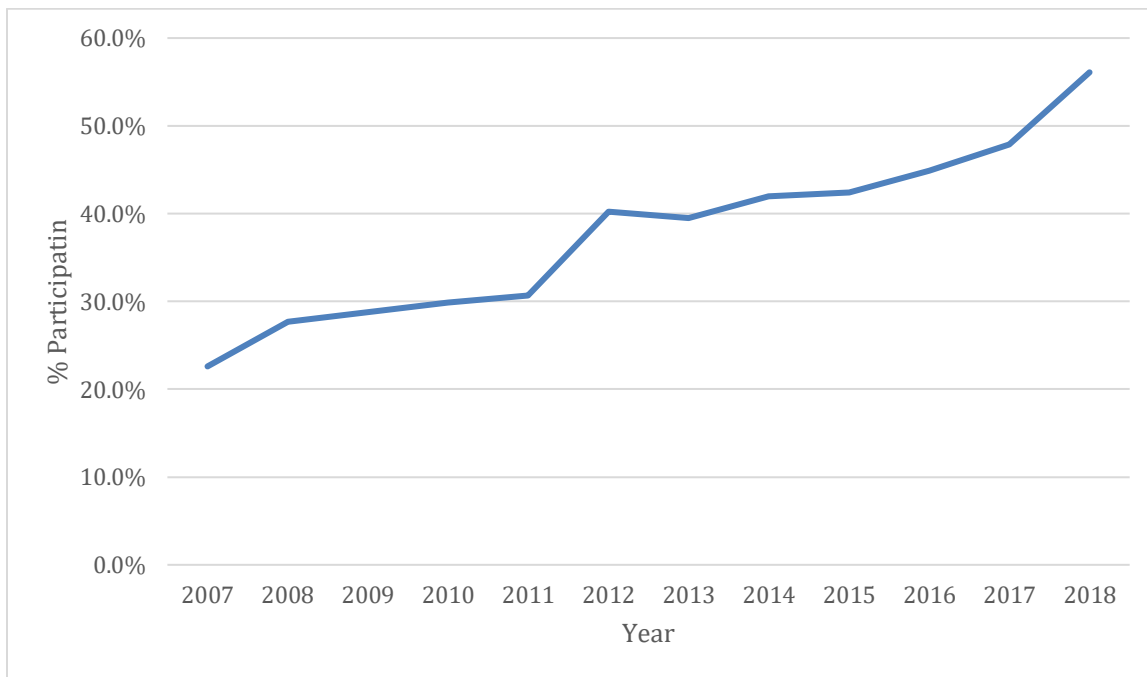
Figure 1.1 *Historical TSP Participation Rates for Active Duty Service Members, 2007-2018 (source: www.tspstrategies.com)*
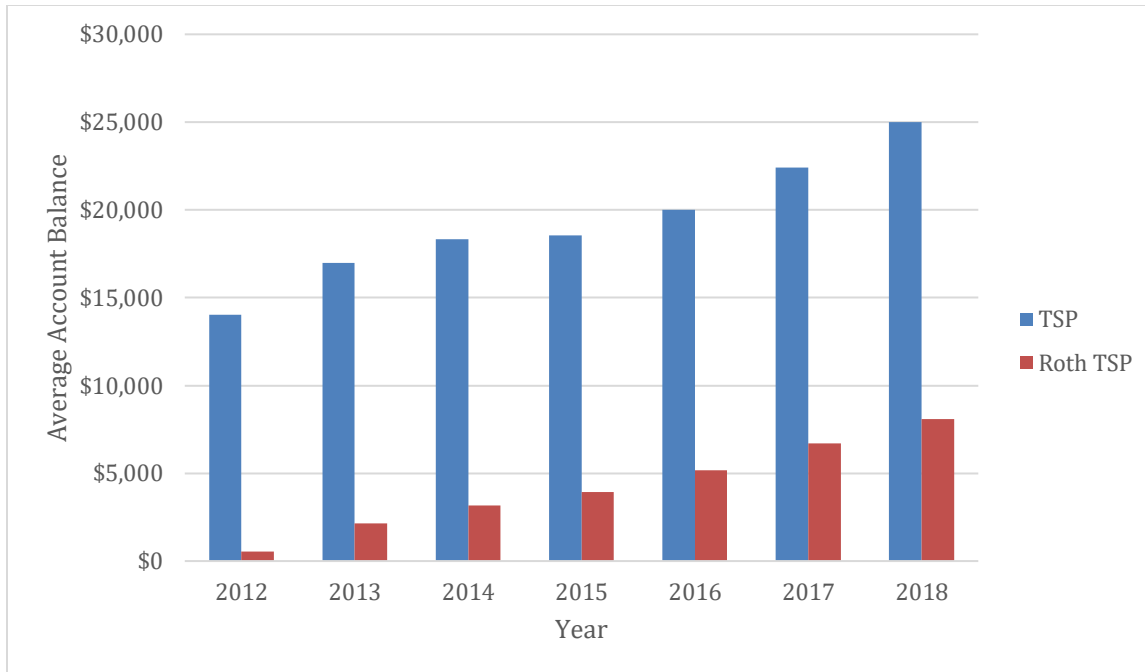
Figure 1.2 *Historical Average Monthly Balances of Military TSP Accounts, 2012-2018*
(source: www.tspstrategies.com)

Current Military Retirement Plan

The National Defense Authorization Act (NDAA) of FY13 established the Military Compensation and Retirement Modernization Commission in order to provide the President and Congress recommendations regarding military pay and benefits (National Defense Authorization Act, 2013). The commission delivered its report in January 2015, which recommended significant changes to the military retirement system from a strictly defined-benefit plan to a Blended Retirement System (BRS). These changes were enacted by the FY16 NDAA to begin in 2018 (National Defense Authorization Act, 2016).

The BRS has several components, which include:

● A defined retired pay benefit using a 2.0% per year multiplier in lieu of 2.5%.

● An automatic 1% of basic pay government contribution to a member's Thrift Savings Plan (TSP) beginning 60 days following entry.

- Government matching contributions up to 4% to a member's TSP account using the same matching plan as is used for government civilians under the Federal Employee Retirement System (FERS) although a member only receives matching contributions from the 3rd through the 26th year of service.

- A choice to receive full monthly retired pay upon retirement or to elect to receive reduced retired pay plus a partial lump-sum payment. This lump-sum payment will be calculated as either 50% or 25% of the discounted retired pay that would be due a member from the date of retirement until the date the member would reach full Social Security retirement age. At full Social Security retirement age, all members will receive their full defined benefit retired pay, regardless of their lump-sum payment election.

In addition, the legislation that established the BRS includes a provision to provide a continuation bonus (Continuation Pay or CP) that is paid to the member at the 12th year of service for an additional 4 year obligation. Members who join on or after January 1, 2018, as well as those who have fewer than 12 years of service on December 31, 2017, and elect to opt-in, will be covered by the BRS. All currently serving members, including those who have fewer than 12 years of service on December 31, 2017, who choose not to opt-in, will remain grandfathered under the current retirement system.

These changes to the military retirement system will have dramatic impacts on military members. They will now be responsible for a greater portion of their retirement savings, while the Government will provide significant incentives to increase savings rates. Ambachtsheer (2016) estimated that a worker needs to contribute 7% of his or her salary and generate a 4% real return rate in order to maintain a comparable standard of living in retirement, assuming it lasts

for 20 years. That percentage climbs to 17% of salary if the rate of return merely keeps pace with inflation during accumulation and decumulation.

An additional important aspect of this shift is the effect on TSP balances. Overall, these accounts held by military members will show marked increases due to the Government's guaranteed automatic and matching contributions. With the DoD's annual personnel budget of $150B (National Defense Authorization Act, 2019), these accounts will easily show increases on the order of tens of billions of dollars every year. These retirement funds can be left in the TSP upon a member's retirement or separation from service, or they can be rolled into a privatized retirement plan, creating a potential windfall for investment management firms.

Military Personal Financial Management Programs

The Department of Defense recognized the importance of correcting negative financial behaviors that may impede personal readiness if not addressed by establishing a policy in the early 1990s (U.S. Department of Defense, 2004). This policy, Personal Financial Management for Service Members, required each service to establish personal financial management programs in order to maintain personal readiness, to support personal financial needs of military members throughout their military career, and to promote retention of members in the military (U.S. Department of Defense, 2004). The GAO estimated that the DoD spends $68 million annually on these programs (GAO, 2012). Required topics include pay and entitlements, banking and allotments, checkbook management, budgeting and saving [to include the Thrift Savings Plan (TSP)], insurance, credit management, car buying, permanent change of station moves and information on obtaining counseling or assistance on financial matters (U.S. Department of Defense, 2004).

Personal financial management training is required within three months after arriving at the first permanent station, on an annual basis, and upon separation or retirement (U.S. Department of Defense, 2004). Those in leadership roles such as supervisors, officers, and noncommissioned officers are also required to have a basic understanding of policies and practices designed to protect junior military servicemembers including commercial solicitation. This required training can be provided by organizations outside of the DoD. Additionally, each installation provides a Personal Financial Manager (PFM) to oversee the overall program, which hold a financial counselor certification and a bachelor's degree (DoD, 2017b). Commands assign an individual in the unit to attend financial counseling training and work with servicemembers within their command.

While all services are required to provide PFM training, each service develops and conducts its own training program. The Navy requires 16 hours of PFM during advanced individual training (after basic training), while the Army requires 2 hours during basic training, 2 hours during advanced individual training, and 8 hours after arrival at the member's first duty station. The Marine Corps and Air Force do not have a set number of hours, but require PFM after arrival at the first duty station (U.S. GAO, 2005). While these programs are considered mandatory, attendance is not strictly enforced. The Army estimated that 82% of junior enlisted soldiers completed PFM training in fiscal year 2003 (U.S. GAO, 2005). Furthermore, the efficacy of the training is questionable. Most required military training is done in large blocks of instruction, with dictated presentations that were developed at a headquarters element and pushed down to subordinate units. This process ensures consistency of instruction, but it does not allow for tailoring to specific audiences. This generic training is often combined with other presentations whose topics range from Operational Security (OPSEC) to Combating Trafficking

in Persons (CTIP) to suicide prevention, potentially diminishing the impact of the financial training.

Even though the military's PFM programs have been active for several years, there has been scant research on their effectiveness (Carlson, Nelson, & Skimmyhorn, 2016). One such study did correlate military financial education with increased TSP participation, but it showed no effect on the establishment of an emergency fund (Brand, Hogarth, Peranzi, & Vlietstra, 2011). In a separate study, Skimmyhorn (2016a) investigated the effect of education and enrollment assistance on several financial outcomes from soldiers who had taken the Army's personal financial management course from 2008-2009 during a staggered implementation period. He found attending the course was correlated with reduced probabilities for several negative financial behaviors (debt balances, account delinquencies, and adverse legal actions) in the first year after the course in addition to having positive effects on retirement savings contributions two years after attending.

The GAO (2005) concluded that the DoD does not have an effective means of evaluating the effectiveness of these programs. In general, services track completion of required training (did they "check the box"), not its effectiveness. Further, inconsistency in training leads to disparity between the servicemembers' education and outcomes. For example, TSP participation rates for enlisted members varies from 22% for the Army to 52% for the Navy (Henning, 2011). This lack of performance measures also reduces the accountability of senior officers in charge of the programs as well as the ability of the DoD or Congress to improve the effectiveness of the overall program.

Military Life

Tiemeyer, Wardynski, and Buddin (1999) performed a qualitative study at seven installations across the U.S. representing all four DoD military branches. The most commonly cited personnel issue was financial management problems. The authors noted this concern was recognized by military leaders due to their interest in their members' well-being and effectiveness in performing their assigned missions.

The unique aspects of military life can impact members' financial well-being, including their ability to contribute to a retirement plan. Frequent deployments, moves, separation from extended family support structure, and lack of opportunity for spousal employment can impact one's financial resiliency. These factors are amplified in the military populace due to the demographic makeup of its young members as compared to their civilian counterparts, and they have been shown to be correlated with an increase in financial difficulties (FINRA IEF, 2010). A cross-sectional study of National Guard members who returned from an Iraq deployment showed readjustment problems were widespread, with 45% of veterans exhibiting at least one financial or family problems three months after returning from their deployment (Kline, Ciccone, Falca-Dodson, Black, & Losonczy, 2011).

These challenges also affect the career prospects of military spouses, making it more difficult to obtain employment and to promote within an organization. Military spouses were more likely to fall in the lower percentiles of wage earners and less likely to be in the top percentiles than their civilian spouse counterparts (Lim, Golinelli, & Cho, 2007). Military spouses are more likely to relocate than spouses of civilians, while being more likely to be located in a metropolitan area, which should offer greater employment opportunities. However, military spouses are more likely to be unemployed (Lim et al., 2007). A survey of over 1,000

military spouses by Castaneda and Harrell (2008) indicated that military spouses perceived that the military lifestyle negatively affected their employment opportunities, specifically frequent moves, service member deployments, and employer bias.

Effect of Financial Issues on Military Servicemembers

Senior Department of Defense officials have repeatedly stated that financial issues directly affect service member readiness and have a negative impact on mission accomplishment (U.S. GAO, 2005). In 2002, the Navy alone identified an estimated $250 million loss in productivity and salary due to poor personal financial management decisions (U.S. GAO, 2005). An earlier personal finance study endorsed by the Navy highlighted the high cost of personal financial issues to U.S. taxpayers, estimating that they had a greater effect on organizational readiness than other high-profile issues such as housing, child care, or health care (Luther, Garman, Leech, Griffitt, & Gilroy, 1997).

Increased financial anxiety is associated with servicemembers' well-being (Bell et al., 2014). Soldiers with greater perceived financial knowledge and higher levels of emergency savings reported higher levels of subjective well-being, while those with lower perceived net worth and higher credit card debt reported lower levels. Adequate retirement savings, emergency savings also appear to be associated with subjective well-being within a Navy officer population. For Marines, income and standard of living impacts well-being *and* mission-readiness (Kerce, 1996).

Servicemembers have rated financial stress as greater than the stressors of deploying to a combat zone and personal relationships (Office of the Assistant Secretary of Defense, 2012). This financial stress has been linked to higher levels of suicide and domestic violence among

servicemembers by several researchers (Kline et al., 2011; Mahon, Tobin, Cusack, Kelleher, & Malone, 2005; Slep, Foran, Heyman, & Snarr, 2010).

Financial difficulties can have a dramatic impact on a member's military career. A study from 2002 showed that over one-third of servicemembers reported they struggled to make ends meet financially at least occasionally (U.S. GAO, 2005). This report linked these personal financial challenges to a decreased level of mission readiness. National Guard troops returning from an Iraq deployment were nine times more likely to present suicidal ideations if they exhibited three or more stressors including serious financial problems, problems paying their mortgage, or a foreclosure (Kline et al., 2011).

Financial difficulties can also directly impact the ability to obtain and maintain a security clearance (Office of the Assistant Secretary of Defense, 2012). A report from the Military Family Institute estimated that 60% of security clearances were revoked due to ineffective personal finance conduct (Luther et al., 1997). Significant and repeated financial issues can ultimately lead to a member being discharged from the service entirely, further compounding the individual's difficulties and creating a loss of taxpayer investment in the training and education of the service member and could later be associated with homelessness (Elbogen et al., 2013).

Effect of Military Service on Financial Outcomes

As discussed previously, military service involves several facets that could affect financial decision-making and outcomes. Frequent moves may affect family income, while deployments and the increased potential for serious injury or death can greatly increase stress. Congress and the DoD have attempted to address these concerns through increased benefits and legislation. The military offers increased income to deployed servicemembers, including hostile fire pay, hardship duty pay, family separation allowance, tax-free pay in a combat zone, and the

savings deposit program (SDP), which allows a military member serving in a designated combat zone the ability to earn a guaranteed rate of return of 10% on up to $10,000 for the duration of the deployment plus an additional three months after returning (Defense Finance and Accounting Service, 2019).

Whether the additional benefits outweigh the increased stress and financial impact of military life is still unclear. Varcoe, Lees, Wright, and Emper (2003) concluded that deployments, being stationed away from home, and financial inexperience were potential explanations for financial problems based on a qualitative study of U.S. Marines. Results from the 2010 FINRA IEF report supports this claim, documenting that increased likelihood of personal financial issues is correlated with frequent moves and deployments. Elbogen, Johnson, Wagner, Newton, and Beckham (2012) studied a group of veterans who had been deployed to either Iraq or Afghanistan. This population screened positive for a number of disorders, including post-traumatic stress disorder (20%), traumatic brain injury (17%), and major depressive disorder (24%). Those exhibiting signs of these disorders were more likely to experience a number of financial challenges such as having difficulty paying for basic necessities, having experienced a negative financial outcome such as losing a job in the previous year, or having an elevated level of unsecured debt (Elbogen et al., 2012).

Hosek, Kavanagh, and Miller (2006) found that the financial incentives of deployments motivated some servicemembers to volunteer for deployments and increased retention. Deployments appear to increase stress related to arranging financial affairs before deploying, such as setting up a bill payment system and worrying about family members who depend on the service member for support. Increased stress is well documented in other studies, which was shown to affect retention rates and the ability of a service member to perform his job (Bray,

Camlin, Fairbank, Dunteman, & Wheeless, 2001; Hosek & Martorell, 2009). Even military families who take the time to discuss finances before deployments can show an increase in stress (Rotter & Boveja, 1999).

Military life can also affect spouse employment and well-being. While military spouses (95% of which are women) are more likely to have attended some college, they are less likely to have completed a four-year degree (California Research Board, 2013). Additionally, military spouses have been shown to have a lower labor market participation rate (57% versus 61%) and higher unemployment (26% versus 6%) than their civilian counterparts. One major barrier to military spouse employment is certification requirements for various states, which is particularly important since their career fields are heavily concentrated in teaching, health care, and services. Savych (2008) examined the effects of deployments on spousal labor supply, household well-being, and retention. He found that the deployment of a service member decreases spousal labor force participation rate by 3% overall, including a 5% drop for those with children under the age of six. This decrease in employment was shown to start prior to the service member leaving and persist after his return for several months, further decreasing overall household income.

Legislative Protections for Servicemembers

Congress and state legislatures have passed a number of laws in an effort to protect military members from the potential negative financial effects of their career, which can be detrimental to military readiness. Carrell and Zinman (2014) showed negative performance ratings influenced by use of payday loans among enlisted Air Force members, while Carter and Skimmyhorn (2016) did not find a similar outcome with an Army population. The Military Lending Act of 2007 was passed to address predatory lenders who target military members due to their reliable paychecks (Harris, 2011). This law places a maximum cap on the interest rate a

lender can charge military personnel and family members at 36%, specifically aimed at payday, auto title, and tax refund anticipation loans. The effects of this legislation is mixed, with several studies showing minimal to no effect (Fox, 2012; Carter & Skimmyhorn, 2016), while others show the legislation was effective for predatory lending as defined in the law, but not for similar financial products that were not covered (Fox, 2012). Recent changes to the law have strengthened its protections for servicemembers, with nascent studies done on its effect (U.S. Department of Defense, 2014).

The Servicemembers Civil Relief Act (50 U.S.C. App. §§501-597, 2003) was enacted as an update to The Soldiers and Sailors Relief Act of 1940. This law provides protections to servicemembers to ensure their military service does not interfere with their ability to meet financial obligations. It suspends civil claims against military members, prohibits eviction of members or their families from a rental property, and imposes a limit of 6% interest on debts incurred prior to entering active duty. Additionally, it ensures the continuation of health insurance and life insurance policies, which could be financially detrimental to a service member if canceled.

The Military Spouses Residency Relief Act (Public Law 111-97, 2009) allows military spouses to maintain residency in a former state if they move to accompany a military spouse due to permanent change of station orders. The military spouse must meet residency requirements in order to enact these protections, which could substantially reduce state income tax liabilities. Separately, the federal government gives preference to military spouses for employment when the member changes duty station, which may mitigate the negative financial consequences of changing jobs due to a relocation.

Problem Statement

No known literature has addressed how personal factors, past behaviors, and environmental factors influence a military member's ability to regularly contribute to a retirement account. Understanding this outcome had little value in the past when the military only offered a defined benefit retirement plan, and only slightly more value when it opened up the Thrift Savings Plan in 2001 to military members without a matching contribution. However, it has become vital with the implementation of the Blended Retirement System in 2019 as the burden for a military retiree's retirement shifts from the DoD under a defined benefit plan to a hybrid plan that includes a defined contribution portion that is primarily the responsibility of the military member. Previous research has shown that factors such as financial education, locus of control, military deployments, and subjective financial knowledge are correlated with numerous financial outcomes of military members, including various saving behaviors. Investigating factors that influence military members to contribute to retirement saving plan is needed to positively influence this outcome.

Research Question

What factors are correlated with regularly contributing to a retirement account for military members? This study will provide insight into the factors associated with retirement contributions for military members as compared to their civilian counterparts. While some studies have studied differences in financial outcomes between veterans and non-veterans (Skimmyhorn, 2017) as well as how outcomes and behaviors differ by veterans based on military branch, retiree status, and date of separation from the military (Skimmyhorn, 2017), none have investigated the factors associated with the financial outcome in question.

The military subjects for the current study were from the 2018 National Financial Capability Survey (NFCS) by the Financial Industry Regulatory Authority (FINRA). The FINRA Investor Education Foundation initiated the first national study in 2009, focused on the financial capability of American adults. The objectives of this study were to determine indicators of financial capability and evaluate how those indicators varied according to characteristics such as demographics, perceptions, attitudes, experiences, and behaviors. The initial study included national, state-by-state, and military components. A second wave was conducted in 2012, the third wave was completed in 2015, while the most recent survey was in 2018.

This research question is explored through the lens of social learning theory, which states that individual behaviors are influenced by a combination of factors from three constructs: cognitive/personal factors (knowledge, expectations, attitudes), environmental factors (social norms, community, influence on others), and behavioral factors (skills, practice, self-efficacy; Bandura, 1968). Social learning theory proposes that individuals learn from their own experiences as well as the experiences of others. Observational learning occurs when a behavior is modeled, rehearsed, and then enacted. These modeled behaviors are more likely to be adopted if it results in a valued outcome. They are also more likely to be adopted if the observed subject is similar to the observer, the behavior is admired, and the behavior has functional value (Bandura, 1968).

The current study will provide an analysis of financial outcomes of an important but underserved population—active duty servicemembers. The results will inform policy makers and financial planning professionals to better serve this important constituency by providing insights into the factors associated with making retirement plan contributions. Increased contributions will provide long-term benefit to the servicemembers and validate the recent changes in the

military retirement system, which shifts more of the burden of retirement savings on the service member. This shift is also important to the financial services industry, which will be positioned to assist servicemembers in managing and investing their retirement savings.

Chapter 2 -   Literature Review

Overall, the literature regarding financial decisions and outcomes of military members versus their civilian counterparts is mixed. Given the demographic makeup of the military, which is more likely to be male, white, young, married, and highly educated than the overall population, one would expect significant differences in national level surveys between the two. Additionally, military members are more likely to be married, more likely to be divorced, and have fewer dependents on average (Skimmyhorn, 2017). Even when demographic characteristics are controlled for in research, the groups may still differ in other unobservable aspects that is not captured in the data. For instance, the military has physical standards that must be met in order to enter and maintain qualification to serve, which are not enforced on the general civilian population. Increased levels of physical health could reduce health care expenses, which would positively impact an individual's overall financial health.

Financial Outcomes Comparison

Military members have been shown to have lower savings rates and higher credit card debt (FINRA, 2010) and more problematic credit card behaviors (Skimmyhorn, 2016b). They are also more likely to spend more than their income, have student loans, have made a late home payment in the past year, and be underwater on their home mortgage than their civilian counterparts (Skimmyhorn, 2017).

Tiemeyer et al. (1999) concluded that young enlisted personnel experience more financial management problems than their comparable civilian counterparts, likely due to immaturity and lack of self-control in addition to the unique aspects of military life. A more recent DoD report (2014) supported this conclusion, showing that 46% of E1-E4 enlisted members surveyed indicated they had taken out a small dollar loan such as a payday loan, credit card cash advance,

relief society loan, or a loan from family or friends. Some research has shown that military members report some positive financial outcomes compared with civilians such as being more likely to be satisfied with their current financial condition, less likely to report having difficulty paying their bills, and more likely to have an emergency fund than non-veterans of similar age (Skimmyhorn, 2017). Lastly, combat stress has been linked to reduced participation in savings programs (Skimmyhorn, 2012).

Financial decision-making has been shown to differ between military members and their civilian counterparts, though few studies account for demographic characteristics of the two populations. The previous FINRA IEF (2013b) military report indicated that military respondents did better than their civilian counterparts on three of the four components of financial capability (making ends meet, financial planning, and financial knowledge). Military servicemembers were more likely to report having an emergency fund (54%) than the general populace (40%; FINRA IEF, 2013a, 2013b).

On the other hand, military servicemembers were more at risk managing finances, particularly debt. This report highlighted a particular concern regarding military members with mortgages, with 38% of respondents indicating they owed more on their house than it was worth at the time (FINRA IEF, 2013b). While the response relied on the member's assessed value of his home, which can be inaccurate, it highlights one of the challenges of military service, as members in the military can be forced to move upon receipt of permanent change of station orders, limiting their options regarding a home mortgage that is underwater.

Similar findings were supported by Skimmyhorn (2014) using a multivariate analysis, which accounted for demographic differences in the two populations. Enlisted servicemembers were less likely to have difficulty paying their bills, more likely to have an emergency fund, and

more likely to have non-retirement accounts. However, military members were also more likely to have poor credit card behaviors and more credit cards.

Junior enlisted servicemembers have the most personal financial problems of any class of military (Tiemeyer et al., 1999). This is in large part due to a lack of financial literacy training prior to joining the military and their lower overall education level. Soldiers who received financial education were more likely to exhibit positive personal financial behaviors including saving on a regular basis and participating in the Thrift Savings Plan, as well as exhibit fewer negative behaviors such as paying bills late (Bell, Gorin, & Hogarth, 2009). Servicemembers who completed a two-day financial education course increased TSP participation from 13.4% to 35.9% one year after (Bell et al., 2009). Similar gains have been seen in the savings behavior of high school students after attending a financial planning program (Boyce, Danes, Huddleston-Casas, Nakamoto, & Fisher, 1998).

This research investigated regular retirement plan contributions of military members based on contributing factors that are theorized to influence the variable according to social learning theory. Understanding the factors associated with this outcome will assist military members and policy makers in increasing positive outcomes.

Social Learning Theory

Many theories have been introduced in an attempt to explain why people behave the way they do. Early attempts focused primarily on inner forces, such as needs and impulses, as the principal causes of behavior were believed to be entirely within the individual (Bandura, 1971). These theories did not consistently demonstrate predictive power or accurately identify causal factors when tested.

Bandura (1971) believed that actions were not entirely determined within an individual alone, but significantly influenced by external factors and that psychological response is based on a continuous interaction between behavior and controlling factors. One's behavior influences the environment, which in turn influences behavior. Thus, a person has some level of self-direction, while most choices are also influenced by external factors, which can either reinforce a positive behavior or deter a negative one.

Social learning theory emphasizes the important role that various processes (vicarious, symbolic, and self-regulatory) play in explaining an individual's actions (Bandura, 1971). People have the cognitive capacity to evaluate a problem, determine how they will be affected, and generate the most appropriate response based on their own experiences or those they have observed of others. Learning can obviously take place through direct observation or experience, but nearly all learning can also take place by observing the actions and consequences of someone else, without the adverse consequences to the individual. A person can symbolically enact various courses of action, determine probable consequences of various responses, and adjust behavior accordingly (Bandura, 1971). The component processes that make up this type of observational learning include: attention (awareness affected by the behavior and observer characteristics), retention (ability to accurately remember the behavior), reproduction (rehearsing the behavior), and motivation (internal and external reinforcement of the behavior; Bandura, 1977).

People are capable of creating self-regulative influences in order to at least partially control their behavior by managing stimulus of particular activities as well as potential consequences (Bandura, 1971). For instance, if a person is trying to lose weight but has a

particular vulnerability for a certain type of fattening foods, that person could choose to avoid that area of town or require a long workout session immediately before or after indulging.

Social learning theory (Bandura, 1968) suggests that individual behaviors are influenced by three components: cognitive/personal factors, environmental factors, and past behavioral factors (Figure 2.1). In addition to biological factors, personal/cognitive factors include items such as knowledge, expectations, and attitudes, while environmental factors would include social norms, community, and influence on others (Bandura, 1986). Behavioral factors consist of skills, practice, and self-efficacy in addition to previous experiences. In addition to influencing a particular outcome, each factor also impacts the other factors based on interactions between them (Bandura, 1997). Past behaviors can influence one's environment, which can then affect several personal factors. These interactions ultimately influence the final outcome.

Social learning theory proposes that people learn from their own experiences as well as the experiences of others (Bandura, 1997). Observational learning occurs when a behavior is modeled, rehearsed, and then enacted to achieve a desired outcome. These modeled behaviors are more likely to be adopted if they result in a valued outcome. Behaviors are more likely to be adopted if the model is similar to the observer, the behavior is admired, and the behavior has functional value (Bandura, 1968). Also, a person must believe they can successfully change their behavior based on a combination of all three factors in order for the change to occur (Bandura, 1997).
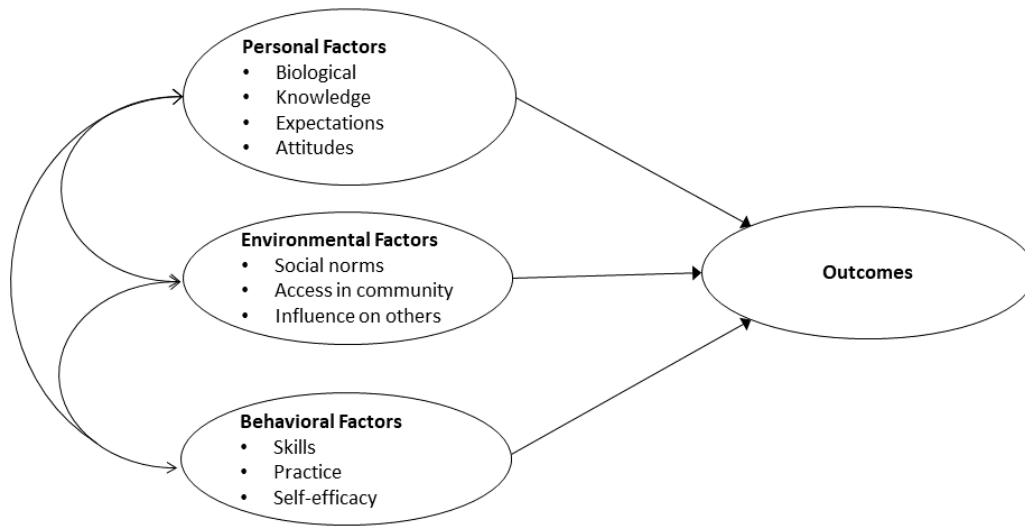
Figure 2.1 *Social Learning Theory Constructs and Relationships (Bandura, 1968)*

Personal Factors

Some research has shown positive results from personal factors such as military financial education. For example, Skimmyhorn (2016a) showed the U.S. Army financial education course given to new enlistees was correlated with reduced credit card issues in the first year after taking it, as well as substantially increased retirement savings rates and monthly contributions. Prior research has shown a positive correlation between financial literacy and retirement savings. Collins and Urban (2016) indicated that employees tend to calibrate their retirement expectations using the information they receive through financial education to decide when to save for retirement and how much they should save. They found that employees increased employer-sponsored retirement account contributions by $26 per month after completing a financial

education program. However, another study indicated that those with low incomes and less education were less likely to have a retirement account (Lusardi, 2011).

Objective financial knowledge was associated with maintaining a positive monthly cash flow, although subjective financial knowledge was not (Nelson, 2015). Rothwell and Wu (2017) studied multiple waves of the Canadian Financial Capability Survey and found gender and age were shown to be highly correlated with financial knowledge, regardless of financial education levels, with men and middle-aged individuals scoring the highest.

Personal factors such as higher subjective financial knowledge, more internal locus of control (i.e., self-efficacy), and lower financial anxiety were all associated with positive financial behaviors (Bell, 2013). In a subsequent study, Bell et al. (2014) found that soldiers' financial well-being was positively correlated with higher subjective financial knowledge. The correlation between locus of control and reduced anxiety was also found in a subsequent study by Nelson (2015), who showed that positive financial behaviors such as budgeting, paying credit card balances in full, and not spending more than one earned were associated with lower anxiety levels. The same study also found that perceived behavioral control was correlated with maintaining a positive monthly cash flow.

Presence of an adequate emergency fund was shown to be more likely among males who were older, white, married, better education, and had less children (Babiarz & Robb, 2014), while women and those with higher incomes were found to be more likely to maintain a positive cash flow (Nelson, 2015). Those who were young, African American or Hispanic, and lower educated were more likely to be correlated with low financial capability (Lusardi, 2011). Another study of young American adults showed demographics such as being male, white, higher education, and higher income associated with better financial outcomes such as less likely

to use high-cost borrowing methods, more likely to plan for retirement, and more likely to have an emergency fund (de Bassa, 2013). Wang and Hanna (2019) found that white households were more likely to have high return investments such as stocks than black, Asian, or Hispanic households, even after controlling for financial literacy, adequate financial assets for investment, and household characteristics. This may indicate less risk aversion for whites compared to other races.

Environmental Factors

Other research has shown that some financial outcomes of military members can be influenced by environmental factors such as peer effects or military deployments. Veith (2017) examined the effect of peer choices when deciding between retirement options, showing a negative correlation between retirement option choice and peer choice. Lieber and Skimmyhorn (2017) examined peer influence of Army soldiers related to contributions to military charities, Thrift Savings Plan participation, and the purchase of life insurance. They found no correlation for TSP participation or life insurance purchasing, but a meaningful correlation between unit participation rates in military charities and individual soldier participation rates. Observability of peer decisions likely plays a key role in these outcomes, while the study showed larger peer effects for soldiers who spent more time with each other.

Bell (2013) studied financial behaviors of military servicemembers both before and after deployment. Financial behaviors after deployment were significantly better than financial behaviors before deployment, and rank of the service member was positively associated with subjective financial knowledge. Soldiers' financial anxiety was greater before deployment than after.

Behavioral Factors

Prior literature has shown future behavior is influenced by past behavior, as postulated by the theory of reasoned action (Fishbein & Ajzen, 2010). Positive pro-social behavior can be influenced by "in-groups," while conflict can result from competition with "out-groups" (Goette et al., 2012). Bell (2013) applied social learning theory to a study on deploying Army soldiers and found that past behaviors and personal factors played the most significant role in the servicemembers' financial behavior outcomes, including following a budget, paying credit card bills in full, and spending more money than one earned. Past behaviors such as having credit card debt or not having an emergency fund were associated with worse financial behaviors when compared with those without credit card debt or those with an emergency fund, respectively. Bell et al. (2014) found that soldiers' financial well-being was negatively correlated with lower perceived net worth and higher credit card debt, while being positively correlated with having an emergency savings account.

Lieber and Skimmyhorn (2017) showed an Army soldier's current financial behaviors were correlated with past behaviors. Soldier participation in military charity programs and the TSP at one unit were highly correlated with their behavior at their previous unit. The purchase of life insurance was not shown to be influenced by purchase or non-purchase at their previous command.

Model

The model for this project (Figure 2.2) will include variables related to personal, environmental, and behavioral factors. These factors were used to explain and predict the financial outcome of interest: regularly contributing to a retirement account.

Retirement Plan Participation (DV)

Research has shown various ways of increasing participation in the TSP. U.S. Army automatic enrollment of new civilian employees into the thrift savings plan at a default rate of 3% of income led to an increase in total contributions four years later by 5.2%, on average (Beshears, Choi, Laibson, Madrian, & Skimmyhorn, 2017). Positive results were also shown by Federal Reserve employees who were more financially literate, as they were shown to be the most likely to participate in and contribute the most to their retirement plan (Clark, Lusardi, & Mitchell, 2017).

Similar positive results were found from the Army's Personal Financial Management Course. TSP participation rates doubles and some debt was reduced by those who attended the course (Skimmyhorn, 2012). Yet, military members' have been shown to make different decisions about retirement based on their personal discount rate. Military members who were given a choice of a $30,000 bonus at the 15-year mark of their career in exchange for a reduction in their pensions showed personal discount rates varied between enlisted and officers (7.0% and 2.0% to 4.3%, respectively; Simon, Warner, & Pleeter, 2015).
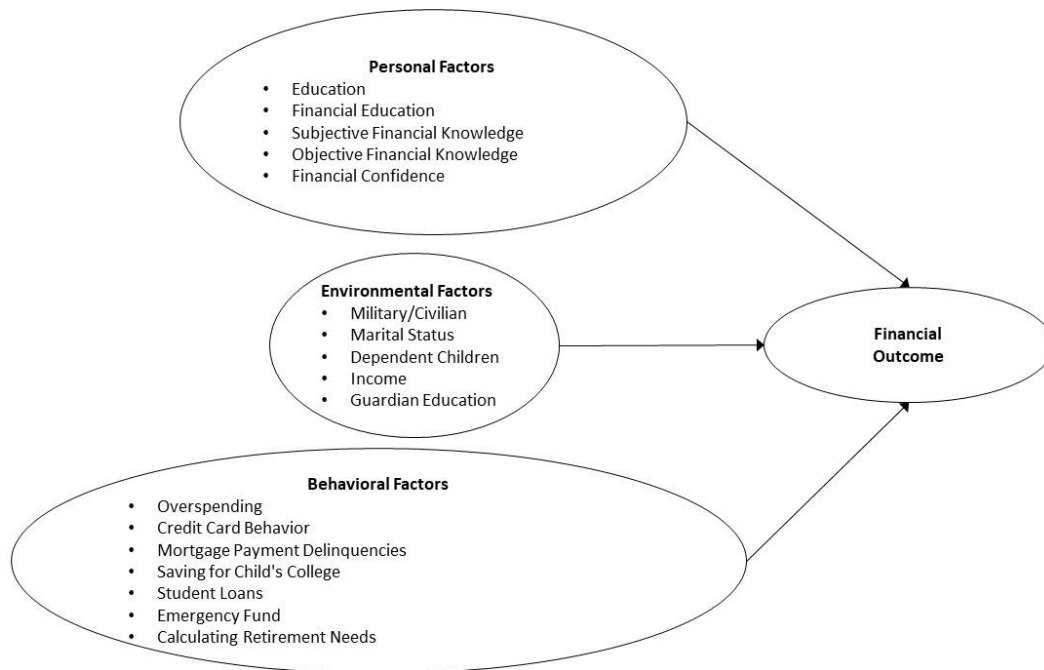
Figure 2.2 *Research Model Using Social Learning Theory Constructs and Relationships*

Summary

Though the study of personal finance of military servicemembers is starting to mature, there are still many aspects that have received little attention. While several studies have analyzed the differences in financial decision-making and outcomes between veterans and civilians (Skimmyhorn, 2016; 2017), little is known about the factors influencing these differences. Social learning theory provides the framework for this analysis, which will address personal factors, past behavior, and environmental factors that affect financial outcomes of servicemembers. Specifically, regularly contributing to a retirement plan will be studied while controlling for demographic variables.

Hypotheses

The overarching research question for this project is: What factors are correlated with regularly contributing to a retirement account for military members? Hypotheses were developed

for each construct of social learning theory, supported by the concepts included in the theory as well as prior research in financial outcomes related to each factor.

Several factors are related to an individual's self-efficacy, or the belief that one's actions determine the final outcome. This concept includes attainment (education, objective financial knowledge, paying bills on time, saving), modeling, social persuasion (encouragement or discouragement), and physiological factors (response to stress; Bandura, 1977). Social Learning Theory proposes that the more these factors increase one's self-efficacy, the more likely an individual is to exhibit a positive behavior such as saving for retirement.

Additionally, several of the behavioral factors are related to an individual's budget. Negative financial behaviors such as overspending, mortgage payment delinquencies, having student loans, etc., can reduce funding available to save for retirement. Similarly, positive financial behaviors including saving for a child's college fund may also crowd out other positive behaviors. On the other hand, positive behaviors such as paying off credit cards every month and having an emergency fund would reduce the stress on one's budget, increasing the funds available for savings programs. The proposed hypotheses are shown below:

(1) Personal Factors

H_1: Respondents with greater levels of education will be more likely to make regular contributions to a retirement plan than those with lower levels of education.

H_2: Respondents who received workplace financial education will be more likely to make regular contributions to a retirement plan than those who did not receive financial education.

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H$_3$: Respondents with higher levels of subjective financial knowledge will be more likely to make regular contributions to a retirement plan than those with lower subjective financial knowledge.

H$_4$: Respondents with higher levels of objective financial knowledge will be more likely to make regular contributions to a retirement plan than those with lower objective financial knowledge.

H$_5$: Respondents with higher levels of financial confidence will be more likely to make regular contributions to a retirement plan than those with lower levels of financial confidence.

(2) Environmental Factors

H$_6$: Factors related to making regular retirement plan contributions will differ between civilian and military respondents.

H$_7$: Married respondents will be less likely to make regular contributions to a retirement plan than single respondents.

H$_8$: Having dependent children will be negatively associated with contributing to a retirement plan.

H$_9$: Higher levels of income will be positively associated with contributing to a retirement plan.

H$_{10}$: Higher education levels of the respondent's parent or guardian will be associated with greater likelihood to make regular contributions to a retirement plan.

(3)Behavioral Factors

H$_{11}$: Overspending will be negatively associated with making regular contributions to a retirement plan.

H_{12}: Positive credit card behaviors will be negatively associated with making regular contributions to a retirement plan.

H_{13}: Mortgage payment delinquency will be negatively associated with making regular contributions to a retirement plan.

H_{14}: Saving for a child's college fund will be negatively associated with making regular contributions to a retirement plan.

H_{15}: Having student loans will be negatively associated with making regular contributions to a retirement plan.

H_{16}: Having an emergency fund will be positively associated with making regular contributions to a retirement plan.

H_{17}: Calculating retirement needs will be positively associated with making regular contributions to a retirement plan.

Chapter 3 -   Methods

The financial outcomes of military servicemembers was examined through the lens of social learning theory using data from the 2018 NFCS state-by-state survey (FINRA IEF, 2019). This online survey was conducted from June through October 2018 among 27,091 American adults, and it was designed to measure financial capability across the U.S. The survey includes approximately 500 respondents from each state, with oversampling in Oregon and Washington at approximately 1,250 respondents each. The survey measured a number aspects of financial capability including perceptions, attitudes, experiences, and behaviors (FINRA, 2018).

Sample

The sample for this study was drawn from the 2018 NFCS state-by-state survey. The sample was restricted to the population of interest, active duty servicemembers, which included 709 respondents. The civilian population sample included 21,457 respondents.

Measures

Social learning theory was used as a framework to explore what factors influence financial outcomes of the population of interest, active duty military servicemembers, compared to the civilian populace. Demographic variables of interest included marital status, number of children, and income as known contributors to the outcome variables based on prior research.

Dependent Variable

The financial outcomes of interest (regularly contributing to a retirement plan) was measured by the response to the following question in the NFCS survey: "Do you or your spouse regularly contribute to a retirement account like a Thrift Savings Plan (TSP), 401(k) or IRA?" Respondents answering "yes" were coded as a "1," while those answering "no" were coded "0."

Personal Factors

Education was a categorical variable, including: those who did not complete high school, high school graduates (either via a high school diploma, GED, or other alternative credential), those with some college education (with either an Associate's degree or no degree), those with a bachelor's degree, and those with a postgraduate degree.

The impact of *workplace financial education* was determined using the response to the following question in the survey: "Was financial education offered by a school or college you attended, or a workplace where you were employed?" Respondents had the option of answering:

1. Yes, but I did not participate in the financial education

2. Yes, and I did participate in the financial education

3. No

4. Don't know

5. Prefer not to say

Respondents answering they had participated (Option 2) answered a follow-on question regarding when they received the financial education. Those who answered either at "from an employer" or "from the military" was coded as a "1," others were coded as a "0."

Subjective financial knowledge was measured on a scale of 1-7 based on the respondent's answer to the following question: "On a scale from 1 to 7, where 1 means very low and 7 means very high, how would you assess your overall financial knowledge?" *Objective financial knowledge* was measured using the summation of a 6-item scale, with a possible range of scores from 0 to 6. One point was given for each correct answer to the following questions:

1. Suppose you had $100 in a savings account and the interest rate was 2% per year.
   After 5 years, how much do you think you would have in the account if you left

the money grow? (more than $102 [correct], exactly $102, less than $102, don't know, prefer not to say).

2. Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account? (more than today, exactly the same, less than today [correct], don't know, prefer not to say)

3. If interest rates rise, what will typically happen to bond prices? (they will rise, they will fall [correct], they will stay the same, there is no relationship between bond prices and interest rates, don't know, prefer not to say)

4. Suppose you owe $1,000 on a loan and the interest you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double? (less than 2 years, at least 2 years but less than 5 years [correct], at least 5 years but less than 10 years, at least 10 years, don't know, prefer not to say)

5. A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest rate over the life of the loan will be less. (true [correct], false, don't know, prefer not to say)

6. Buying a single company's stock usually provides a safer return than a stock mutual fund. (true, false [correct], don't know, prefer not to say)

Financial confidence was indicated by the answer to the following question: "If you were to set a financial goal for yourself today, how confident are you in your ability to achieve it?" Those who answered "somewhat confident" or "very confident" were coded as "1," while other responses were coded as "0."

Environmental Factors

Active duty military members operate in a different environment than their civilian counterparts. The differences in environment can influence financial decisions and outcomes. In order to explore these differences, one model was run for active duty members and a separate model was run for civilians using the same independent and dependent variables.

Married was a binary variable based on the respondent's answer to the following question: "What is your marital status?" Those answering "married" were coded as a "1." Those answering "single," "separated," "divorced," or "widowed" were coded as a "0."

Children was a binary variable based on the answer to the following question: "How many children do you have who are financially dependent on you? Please include children not living at home, and step-children as well." Those answering one or more were coded as a "1," others were coded as a "0."

Income was measured as a categorical variable, with the following categories: <$25k; $25k-$49,999; $50k-$74,999; $75k-$99,999; $100k-$149,999; and $150k+.

The *guardian education* variable was measured by the answer to the following question: "What was the highest level of education completed by the person or any of the people who raised you?" Answers were categorical including: those who did not complete high school, high school graduates (either via a high school diploma, GED, or other alternative credential), those with some college education (with either an Associate's degree or no degree), those with a bachelor's degree, and those with a postgraduate degree.

Behavioral Factors

An individual's behaviors can impact financial outcomes such as the ability to contribute to a retirement plan. For example, spending more than one's income, having an unaffordable

mortgage, an elevated level of debt, or saving for a dependent's college fund would crowd out savings that could be available for retirement contributions. On the other hand, having an emergency fund would allow an individual to sustain a short-term financial shock without impacting retirement savings plans. Other positive actions such as determining how much one needs to save for retirement could motivate an individual to make retirement plan contributions in order to meet the anticipated need. Several behavioral factor variables were used in the model as shown below.

Overspending was determined by the answer to the following question: "Over the past year, would you say your spending was less than, more than, or about equal to your household's income? Please do not include the purchase of a new house or car, or other big investments you may have made." Those answering "spending more than income" were coded as a "1," others were coded as a "0."

Credit card behaviors show both past and present financial behaviors, including spending decisions. This variable was measured using a 6-point scale derived from the sum of the "Yes" answers to the first question and "No" answers to the remaining following questions:

1) I always paid my credit cards in full.

2) In some months, I carried over a balance and was charged interest.

3) In some months, I paid the minimum payment only.

4) In some months, I paid the minimum payment only.

5) In some months, I was charged an over the limit fee exceeding my credit line.

6) In some months, I used the cards for a cash advance.

Mortgage delinquency was measured by the answer to the following question: "How many times have you been late with your mortgage payments in the past 12 months?" Those answering "zero" were coded as a "1," while those with other answers were coded as a "0."

Saving for a child's education was measured by the answer to the following question (for those indicating they had a dependent child): "Are you setting aside any money for your children's college education?" Those answering "yes" were coded as a "1," while those with other answers were coded as a "0."

Student loans were measured by the answer to the following question: "Do you currently have any student loans? If so, for whose education was this/were these loan(s) taken out?" Those answering "yes" for themselves, a spouse/partner, children, grandchildren, or another person were coded as a "1," while those with other answers were coded as a "0."

Emergency fund was measured by the answer to the following question: "Have you set aside emergency or rainy day funds that would cover your expenses for 3 months, in case of sickness, job loss, economic downturn, or other emergencies?" Those answering "yes" were coded as a "1," while those with other answers were coded as a "0."

Retirement planning was measured by the answer to the following question: "Have you ever tried to figure out how much you need to save for retirement?" Those answering "yes" were coded as a "1," while those with other answers were coded as a "0."

Control Variables

Gender was a binary variable, either male (coded as a "1) or female (coded as "0"). *Age* was measured as a categorical variable, with ages 18-24, 25-34, 35-44, and 45 and over as the ordinal categories. Based on limitations of the data, *race/ethnicity* was classified as either White, non-Hispanic or Other. The survey had seven categories (White or Caucasian, Black or African-

American, Hispanic or Latino, Asian, Native Hawaiian or other Pacific Islander, American

Indian or Alaska Native, and Other), but the responses were collated into the two categories

used.

Variable Correlation

Correlation between independent variables was evaluated in order to test for

multicollinearity. Separate tests were conducted for the active duty and civilian models. The

results of these analyses are shown in Tables 4.3 and 4.4, respectively.

Logistic Regression

A logistic regression was used to assess the binary dependent variable in order to evaluate

the research question regarding which factors influence retirement savings behavior. Since prior

research has shown that active duty members have exhibited different financial behaviors from

their civilian counterparts, an analysis was conducted to determine if separate regressions for

each population was more appropriate. A likelihood ratio test can be used to determine if a

restricted model, which includes a dummy variable to control for the military/civilian variable, is

more appropriate than an unrestricted model, in which the same logistic regression is run

separately for active duty members and civilians. The null hypothesis is that the restricted model

is more appropriate.

The likelihood ratio (LR) is equal to twice the negative difference of the log-likelihood

output from the restricted, or pooled, model ($ln\hat{L}_R$) and the unrestricted models, ($ln\hat{L}_{VR}$; Greene,

2012). The corresponding equation is shown below:

$$LR = -2\,[ln\hat{L}_R - ln\hat{L}_{VR}]$$

The restricted model had 29 parameters, while each of the unrestricted models had 28, for a total of 56 parameters. Thus, this analysis tested 27 exclusion restrictions (q = 27), giving a chi-square test statistic of:

$$LR = -2\,[ln\hat{L}_P - (ln\hat{L}_M - ln\hat{L}_C)] = x_q^2]$$

$$where\; ln\hat{L}_P = \text{log-likelihood function of the pooled model}$$

$$ln\hat{L}_M = \text{log-likelihood function for active duty military}$$

$$ln\hat{L}_C = \text{log-likelihood function for civilians}$$

Summary

The total number of predictor variables was 16, including 5 related to personal factors (education level, workplace financial education, subjective financial knowledge, objective financial knowledge, financial confidence), 4 environmental factors (marital status, having dependent children, income, and guardian education level), and 7 behavioral factors (overspending, positive credit card behavior, mortgage payment delinquency, saving for a child's college education, student loans, having an emergency fund, and calculating retirement needs). Additionally, three control variables (gender, age, and race) were included in the model to ensure internal validity.

Chapter 4 – Results

Descriptive Statistics of the Samples

Descriptive statistics are provided in Table 4.1. A comparison between the two populations, active duty military members (N = 716) and civilians (N = 21,457), showed some notable differences. Overall, the percentage of military personnel who indicated that they (or their spouse) make regular contributions to a retirement plan was 74.2%. This is more than double that of the civilian sample percentage of 32.3% ($t = -25.15$, $p < 0.01$). These percentages are counter to what would be expected, since military members can qualify for a defined benefit retirement annuity once they complete 20 years of service. The differences in age between the two populations (chi-$sq = 935.17$, $p < 0.01$), may be contributing to this outcome. Over half of the military population (54.2%) was in the 25-34 year-old age bracket, while 54.7% of the civilian sample was 45 years of age or older.

Military members were significantly more likely to be male (79.1%) than their civilian counterparts (38.0%; $t = -22.87$, $p < 0.01$), while civilians were more likely to be white (74.9% versus 55.7%, respectively; $t = 10.28$, $p < 0.01$). Both populations had similar percentages of single and married individuals ($t = 1.24$, $p > 0.10$).

Level of education between the military and civilian populations was also significant (chi-$sq = 278.44$, $p < 0.01$). The military populace had a larger percentage of respondents with some college education than the civilian sample (50.8% versus 36.7%), while more civilians had a bachelor's degree (22.3% versus 15.6%, respectively). The education benefits offered by the military including tuition assistance is likely influencing the former. Overall, the military sample reported a much higher percentage of personnel who received financial education at work (39.7%), while only 6.3% of the civilian respondents reported the same ($t = -17.57$, $p < 0.01$).

Military members reported a higher average subjective knowledge than their civilian counterparts (6.12 versus 5.08, respectively; $t = -18.67$, $p < 0.01$), while civilians scored higher on the objective financial knowledge scale (3.17) than military members (2.41t; $= 16.94$, $p < 0.01$). A higher percentage of military members also reported having the confidence to meet financial goals (91.6%) than the civilian respondents (76.1% with $t = -13.58$, $p < 0.01$).

Military members were more likely to report having at least one dependent child (75.1% versus 34.9%, respectively; $t = -24.63$, $p < 0.01$). Differences in income levels were shown to be statistically significant between the two populations (*chi-sq* $= 718.45$, $p < 0.01$). The civilian sample was dispersed fairly equally between the five income brackets, while a large percentage (41.1%) of the military reported an income between $50k to $75k. The education level of respondents' guardians was similar for those with a bachelor's or graduate degree, but the military sample reported a higher percentage of guardians with at least some college (47.2% versus 26.8%, respectively; *chi-sq* $= 326.21$, $p < 0.01$).

Regarding financial behaviors, military members had a higher percentage of those reporting overspending (38.0% versus 18.5% with $t = -10.77$, $p < 0.05$) and student loans (70.9% versus 25.5% with $t = -27.92$, $p < 0.01$), but fewer average positive credit card behaviors (2.49 versus 3.49 with $t = 15.43$, $p < 0.01$) and percentage of people who reported having made all their mortgage payments on time the prior twelve months (14.9% vs 29.2% with $t = 10.74$, $p < 0.01$). On the other hand, military members indicated higher frequencies of positive financial behaviors such as saving for a child's college education (62.4% versus 12.3% with $t = -27.37$, $p < 0.01$), having an emergency fund (80.2% versus 48.7% with $t = -19.64$, $p < 0.01$), and having calculated what they need to save for retirement (78.8% versus 32.3% with $t = -29.94$, $p < 0.01$).

Table 4.1 *Sample Descriptive Statistics*

Variable	Military Sample N = 716		Civilian Sample N = 21,457		t-value (DF) or Chi-Sq(DF)
	Mean	S.D.	Mean	S.D.	
Contributing to a retirement plan (DV)	0.74	0.44	0.32	0.47	-25.15(763)***
Control Variables					
Male	0.79	0.41	0.38	0.49	-22.87(778)***
Age					935.17(5)***
Under 25	0.14	0.35	0.11	0.31	-
25-34	0.54	0.50	0.17	0.38	-
35-44	0.25	0.43	0.17	0.38	-
45 and over	0.07	0.26	0.55	0.50	-
White, non-Hispanic	0.56	0.50	0.75	0.43	10.28(747)***
Personal Factors					
Education					278.44(18)***
High school or below	0.21	0.40	0.28	0.45	-
Some college	0.51	0.50	0.37	0.48	-
Bachelor's degree	0.16	0.36	0.22	0.42	-
Graduate degree	0.13	0.34	0.13	0.34	-
Workplace financial education	0.40	0.49	0.06	0.24	-17.57(727)***
Subjective financial knowledge	6.12	1.42	5.07	1.33	-18.67(752)***
Objective financial knowledge	2.41	1.26	3.17	1.65	16.94(788)***
Financial confidence	0.92	0.28	0.76	0.43	-13.58(813)***
Environmental Factors					
Married	0.52	0.50	0.52	0.50	1.24(25,430)
Financially dependent children	0.75	0.43	0.35	0.48	-24.63(766)***
Income					718.45(21)***
Income <$25k	0.12	0.32	0.22	0.41	-
Income $25k-$50k	0.12	0.33	0.26	0.44	-
Income $50k-$75k	0.13	0.34	0.20	0.40	-
Income $75k-$100k	0.41	0.49	0.13	0.34	-
Income $100k+	0.22	0.41	0.20	0.40	-
Guardian education					326.21(21)***
High school diploma or less	0.22	0.41	0.40	0.49	-
Some college	0.47	0.50	0.27	0.44	-
Bachelor's degree	0.18	0.39	0.20	0.40	-
Graduate degree	0.13	0.34	0.12	0.32	-
Behavioral Factors					
Overspending	0.38	0.49	0.19	0.39	-10.77(741)**
Credit card behaviors	2.49	1.76	3.49	2.31	15.43(787)***
Mortgage payment timeliness	0.15	0.36	0.29	0.45	10.74(784)***
Saving for children's college	0.62	0.48	0.12	0.33	-27.37(734)***
Student loans	0.71	0.45	0.26	0.44	-27.92(25,430)***
Emergency fund	0.80	0.40	0.49	0.50	-19.64(781)***
Retirement need calculation	0.79	0.41	0.32	0.47	-29.94(770)***

Notes: *$p < 0.10$, **$p < 0.05$, ***$p < 0.01$; White, non-Hispanic and non-white were only available races.

Logistic Regression Analysis

Based on the results of prior research showing different financial outcomes for active duty military members and civilians, a likelihood ratio test was conducted to determine if the two populations should be examined separately. The results of the test are shown in Table 4.2. The results indicate that the p-value for the chi-square distribution is significant ($p < 0.01$). Thus, the null hypothesis is rejected, and the unrestricted models are more appropriate.

Table 4.2 *Likelihood Ratio Test: Pooled versus Separate Logits for Military and Civilians*

Model	·2LogLikelihood	df		p-value
Restricted (pooled) Model – Model 1	22,910.285	29		-
Unrestricted Model	19,746.667	56		-
Model 1.M	536.539		28	-
Model 1.C	19,210.128		28	-
Likelihood Ratio Test Statistic, χ²	3,163.618	27		<0.01

Logistic Regression Results for the Military Sample

Separate logistic regressions were conducted for both the military and civilian samples in order to explore the effect of several variables on the dependent variable, making retirement plan contributions. Results of both regressions are shown in Table 4.3.

Personal Factors

Three personal factors were shown to be significantly correlated with contributing to a retirement savings plan for military members. Subjective financial knowledge (OR = 1.28, $p < 0.01$), objective financial knowledge (OR = 1.56, $p < 0.01$), and those reporting financial confidence (OR = 2.32, $p < 0.05$) were all positively correlated with contributing to a retirement plan. These results show that financial confidence had more than double the effect of objective financial knowledge and nearly double the effect of subjective financial knowledge. Thus, each

one-point increase in financial confidence increased the odds that the respondent contributed to a retirement plan by 232%, while a one-point increase in subjective financial knowledge corresponded to a 128% increase in odds. Similarly, a one-point increase in objective financial knowledge equated to one and a half times greater chance of the respondent having contributed to a retirement plan. Having attended workplace financial education was not a predictor, in addition to the education level of the respondent.

Environmental Factors

Two of the environmental factors examined were found to be significant predictors of contributing to a retirement plan for the military population. Being married (OR = 0.55, $p < 0.05$) was shown to be negatively correlated, while those who had a guardian with a graduate degree (OR = 0.31, $p < 0.05$) showed a negative correlation compared to those who either did not complete high school or had only a high school diploma. Accordingly, married individuals were 45% less likely to contribute to a retirement plan compared to single individuals, while those with a guardian with a graduate degree were 69% less likely compared to those who only had a high school diploma or who did not graduate from high school. Of note, none of the income categories were statistically significant predictors for the military sample.

Behavioral Factors

A total of four behavioral factors were found to have a positive correlation with making retirement plan contributions for the military sample: saving for a child's college (OR = 4.06, $p < 0.01$), having student loans (OR = 2.09, $p < 0.01$), having an emergency fund (OR = 2.13, $p < 0.05$), and calculating how much one needs to save for retirement (OR = 3.40, $p < 0.01$). Each of these variables demonstrated a significant effect on the dependent variable, particularly saving for a child's college and calculating retirement needs, with 406% and 340% greater odds,

respectively. Respondents who had student loans (209%) or who had established an emergency fund (213%) were both twice as likely to have contributed to a retirement plan.

Logistic Regression Results for the Civilian Sample

Significant predictors of making retirement plan contributions for the civilian respondents showed some similarities, but also some noticeable differences from the military respondents.

Personal Factors

Several personal factors were significant predictors of the dependent variable. The only education category that showed a significant correlation was for those who had a bachelor's degree (OR = 1.17, $p < 0.05$), compared to those who had either a high school diploma or who did not graduate from high school. Unlike the military sample, civilians who received financial education in the workplace showed a significant positive correlation with contributing to a retirement plan (OR = 1.39, $p < 0.01$). Thus, these civilians were 39% more likely to contribute to a retirement plan. As with the military sample, subjective financial knowledge (OR = 1.03, $p < 0.10$), objective financial knowledge (OR = 1.08, $p < 0.01$), and those reporting financial confidence (OR = 1.32, $p < 0.01$) were all positively correlated with contributing to a retirement plan. The impact of these three independent variables was substantially less than for the military sample. For instance, for every point increase in financial confidence, civilians were 32% more likely to contribute to a retirement plan, which was only a quarter of the impact the same variable had for the military sample (132%).

Environmental Factors

Unlike the military population, several environmental factors showed significant correlations for the civilian population. Being married showed a negative correlation (OR = 0.91, $p < 0.05$) compared with those who were unmarried, which equates to a 9% less odds of making

retirement plan contributions. All income brackets showed positive correlations compared to those making under $25,000 per year, with higher income brackets showing an increasing effect ($25k to 50k: OR = 3.41, $p < 0.01$; $50k to $75k: OR = 5.96, $p < 0.01$; $75k to $100k: OR = 7.53, $p < 0.01$; and $100k+: OR = 12.16, $p < 0.01$). Thus, those in the highest income bracket were twelve times more likely than those in the lowest income bracket to contribute to a retirement plan, and twice as likely than those in the middle income bracket. The education level of the respondent's guardian was significant in two cases: those whose guardians has some college (OR = 1.12, $p < 0.05$) or a graduate degree (OR = 1.17, $p < 0.05$), while those whose guardians had a bachelor degree did not show a significant correlation.

Behavioral Factors

A total of six behavioral factors were shown to be significant predictors of the dependent variable, all of which were positively correlated with contributing to a retirement plan. This included two factors that were not found to be significant for the military sample: positive credit card behaviors (OR = 1.08, $p < 0.01$) and making timely mortgage payments (OR = 1.60, $p < 0.01$). While positive credit card behaviors only showed a small effect (8% increase in odds), those who paid their mortgage on time every month for the previous year were 60% more likely to contribute to a retirement plan.

Four financial behaviors showed similar results for civilians as for the military: saving for a child's college (OR = 1.63, $p < 0.01$), having student loans (OR = 1.22, $p < 0.05$), having an emergency fund (OR = 1.33, $p < 0.01$), and having calculated retirement needs (OR = 4.31, $p < 0.01$). While all showed positive correlations for both samples, the first three had less of an effect for the civilian sample. For example, the increased odds of saving for retirement for those who also indicated they were saving for a child's college education was 63%, which was only about

1/5 of the increase in odds for the same variable for the military sample (306%). Having

calculated retirement needs had the greatest effect for civilian, with an increase in odds of 331%,

which was larger than the variable's effect for the military (240%).

Variable Correlation

The correlation between independent variables for the active duty model is shown in

Table 4.4. Only two variables were shown to have a correlation greater than 0.5, indicating a low

to moderate correlation between the variables. Having a child and saving for a child's education

had a correlation of 0.74, which is high but not unexpected.

Correlation results for the civilian population are shown in Table 4.4. Similar to the

results of the military model, the only correlation above 0.50 was for the same two variables,

having a child and saving for a child's education (0.51). Overall, the correlation results indicate

that multicollinearity is not a concern for either model.

Table 4.3 *Logistic Regression Analyses for Variables Predicting Retirement Plan Contributions*

Variable	Military Sample N = 716			Civilian Sample N = 21,457		
	B	SE B	Odds Ratio	*B*	SE B	Odds Ratio
Intercept	-3.94***	0.67	-	-4.59***	0.13	-
Control Variables						
Male (ref = Female)	0.12	0.27	1.13	0.17***	0.04	1.19
Age (ref = Under 25)						
25-34	-0.33	0.34	0.72	0.40***	0.08	1.49
35-44	-0.16	0.39	0.86	0.54***	0.08	1.72
45 and over	-0.37	0.52	0.69	0.15***	0.08	1.16
White, non-Hispanic (ref = Non-white)	-0.05	0.25	0.95	-0.06	0.04	0.94
Personal Factors						
Education (ref = HS diploma or below)						
Some college	0.17	0.43	1.19	0.00	0.06	1.00
Bachelor's degree	-0.34	0.52	0.71	0.16***	0.06	1.17
Graduate degree	0.75	0.66	2.12	-0.09	0.07	0.92
Workplace financial education	-0.12	0.25	0.89	0.33***	0.07	1.39
Subjective financial knowledge	0.24***	0.09	1.28	0.03*	0.02	1.03
Objective financial knowledge	0.44***	0.10	1.56	0.07***	0.01	1.08
Financial confidence	0.84**	0.39	2.32	0.28***	0.05	1.32
Environmental Factors						
Married (ref = Single)	-0.60**	0.27	0.55	-0.10***	0.04	0.91
Financially dependent children	-0.30	0.37	0.74	0.08	0.05	1.09
Income (ref = <$25k)						
Income $25k-$50k	-0.12	0.43	0.89	1.23***	0.08	3.41
Income $50k-$75k	-0.13	0.44	0.87	1.79***	0.08	5.96
Income $75k-$100k	0.58	0.41	1.78	2.02***	0.09	7.53
Income $100k+	0.11	0.44	1.12	2.50***	0.09	12.16
Guardian education (ref = HS or below)						
Some college	-0.49	0.42	0.62	0.11**	0.05	1.12
Bachelor's degree	-0.52	0.47	0.60	0.06	0.06	1.06
Graduate degree	-1.18*	0.60	0.31	0.16**	0.07	1.17
Behavioral Factors						
Overspending						
Credit card behaviors	0.11	0.25	1.12	-0.04	0.05	0.96
Mortgage payment delinquencies	-0.04	0.07	0.96	0.07***	0.01	1.08
Saving for children's college	0.43	0.33	1.54	0.47***	0.04	1.60
Student loans	1.40***	0.34	4.06	0.49***	0.06	1.63
Emergency fund	0.73***	0.25	2.09	0.20***	0.05	1.22
Retirement need calculation	0.75***	0.29	2.13	0.29***	0.04	1.33
	1.22***	0.27	3.40	1.46***	0.04	4.31

Notes: B = unstandardized beta, *SE B* = standard error, *p* < 0.10, **p* < 0.05, ***p* < 0.01

Table 4.4 Correlation Matrix of Variables for Active Duty (bolded items are significant at the p<.05 or less)

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Contributing to a Retirement Plan	1.00	**0.12**	0.04	**-0.08**	-0.04	-0.03	**0.14**	**0.39**	**0.12**	**0.24**	**0.13**	**0.25**	**-0.09**	**0.07**	-0.06	0.01	**0.35**	**0.28**	**0.42**	**0.46**
2	Male	**0.12**	1.00	0.04	0.00	0.04	0.01	**0.07**	**0.16**	0.07	**0.08**	-0.01	**0.16**	0.01	**0.08**	-0.03	**-0.09**	0.04	**0.12**	**0.12**	**0.09**
3	Age	0.04	0.04	1.00	**0.12**	0.02	**0.16**	-0.05	**0.13**	**0.20**	**0.11**	-0.03	**0.24**	**0.09**	-0.08	**0.17**	**0.14**	-0.02	-0.05	0.02	0.01
4	White, non-Hispanic	**-0.08**	0.00	**0.12**	1.00	**0.17**	**0.14**	**-0.31**	-0.05	0.00	-0.04	**0.11**	0.06	**0.09**	**-0.22**	**0.29**	**0.10**	0.05	**-0.07**	**-0.17**	**-0.12**
5	Married	-0.04	0.04	0.02	**0.17**	1.00	**0.18**	**-0.13**	0.03	**0.10**	-0.01	**0.32**	**0.14**	**0.10**	**-0.09**	**0.16**	**0.15**	**0.22**	0.00	-0.03	-0.05
6	Education	-0.03	0.01	**0.16**	**0.14**	**0.18**	1.00	0.03	0.04	**0.19**	**0.15**	-0.05	**0.34**	0.28	0.00	**0.31**	**0.09**	-0.04	0.00	0.00	-0.04
7	Workplace Financial Education	**0.14**	**0.07**	-0.05	**-0.31**	**-0.13**	0.03	1.00	**0.17**	0.07	**0.11**	-0.06	**0.12**	-0.03	**0.22**	**-0.10**	**-0.13**	0.05	**0.15**	**0.23**	**0.18**
8	Subjective Financial Knowledge	**0.39**	**0.16**	**0.13**	-0.05	0.03	0.04	**0.17**	1.00	-0.05	**0.37**	**0.08**	**0.38**	-0.03	**0.14**	**-0.10**	**-0.11**	**0.28**	**0.33**	**0.41**	**0.38**
9	Objective Financial Knowledge	**0.12**	0.07	**0.20**	0.00	**0.10**	**0.19**	0.07	-0.05	1.00	0.03	**-0.12**	**0.07**	0.04	**-0.07**	**0.31**	0.25	**-0.12**	**-0.18**	-0.03	-0.01
10	Financial Confidence	**0.24**	**0.08**	**0.11**	-0.04	-0.01	**0.15**	**0.11**	**0.37**	0.03	1.00	0.04	**0.25**	0.06	0.01	**0.08**	**-0.11**	**0.11**	**0.17**	**0.24**	**0.20**
11	Dependent Children	**0.13**	-0.01	-0.03	**0.11**	**0.32**	-0.05	-0.06	**0.08**	**-0.12**	0.04	1.00	0.06	**-0.08**	0.06	-0.05	0.00	**0.74**	**0.16**	0.06	**0.11**
12	Income	**0.25**	**0.16**	**0.24**	0.06	**0.14**	**0.34**	**0.12**	**0.38**	0.07	**0.25**	0.06	1.00	**0.07**	**0.10**	**0.07**	0.04	**0.21**	**0.21**	**0.27**	**0.27**
13	Guardian Education	**-0.09**	0.01	**0.09**	**0.09**	**0.10**	**0.28**	-0.03	-0.03	0.04	0.06	**-0.08**	**0.07**	1.00	-0.03	**0.13**	**0.10**	-0.06	**-0.07**	**-0.08**	**-0.08**
14	Overspending	**0.07**	**0.08**	-0.08	**-0.22**	-0.09	-0.01	0.22	**0.14**	-0.07	0.01	**0.06**	**0.10**	-0.03	1.00	**-0.24**	**-0.17**	0.04	**0.21**	**0.09**	**0.08**
15	Credit Card Behaviors	-0.06	-0.03	**0.17**	**0.29**	**0.16**	**0.31**	**-0.11**	**-0.10**	**0.31**	**0.08**	-0.05	**0.07**	**0.13**	**-0.24**	1.00	**0.24**	**0.14**	**0.31**	**0.22**	**0.22**
16	Late Mortgage Payments	0.01	**-0.09**	**0.14**	**0.10**	**0.15**	**0.09**	**-0.13**	**-0.11**	**0.25**	**-0.11**	0.00	0.04	**0.10**	**-0.17**	**0.24**	1.00	**0.08**	**0.30**	**0.26**	**0.27**
17	Saving for Child's College	**0.35**	0.04	-0.02	0.05	**0.22**	-0.04	0.05	**0.28**	**-0.12**	**0.11**	**0.74**	**0.21**	-0.06	0.04	0.04	**-0.07**	1.00	**0.25**	**0.36**	**0.34**
18	Student Loans	**0.28**	**0.12**	-0.05	**-0.07**	0.00	0.00	**0.15**	**0.33**	**-0.18**	**0.17**	**0.16**	**0.21**	**-0.07**	**0.21**	**-0.20**	**-0.16**	**0.25**	1.00	**0.24**	**0.27**
19	Emergency Fund	**0.42**	**0.12**	0.02	**-0.17**	-0.03	0.00	**0.23**	**0.41**	-0.03	**0.24**	0.06	**0.27**	**-0.08**	**0.09**	-0.04	**-0.08**	**0.36**	**0.24**	1.00	**0.49**
20	Retirement Need Calculation	**0.46**	**0.09**	0.01	**-0.12**	-0.05	-0.04	**0.18**	**0.38**	-0.01	**0.20**	**0.11**	**0.27**	**-0.08**	**0.08**	**-0.09**	-0.04	**0.34**	**0.27**	**0.49**	1.00

Table 4.5 *Correlation Matrix of Variables for Civilians (bolded items are significant at the p < .05 or less)*

#	Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	Contributing to a Retirement Plan	1.00	**0.12**	-0.03	0.03	**0.20**	**0.24**	**0.11**	**0.19**	**0.24**	**0.20**	**0.11**	**0.45**	-0.02	-0.08	**0.25**	**0.27**	**0.22**	0.04	**0.24**	**0.43**
2	Male	**0.12**	1.00	-0.02	0.01	0.03	0.09	0.06	**0.12**	**0.22**	0.07	-0.04	**0.13**	0.01	-0.03	**0.10**	0.03	0.06	-0.03	**0.10**	**0.10**
3	Age	-0.03	-0.02	1.00	**0.22**	**0.21**	0.05	**0.02**	**0.22**	**0.26**	0.01	**-0.24**	**0.18**	0.00	**-0.11**	**0.29**	**0.10**	**-0.15**	**-0.34**	**0.23**	**-0.09**
4	White, non-Hispanic	0.03	0.01	**0.22**	1.00	**0.14**	0.00	-0.01	**0.06**	**0.16**	-0.01	**-0.09**	**0.11**	-0.01	-0.05	**0.14**	**0.10**	-0.06	**-0.12**	**0.07**	-0.01
5	Married	**0.20**	0.03	**0.21**	**0.14**	1.00	**0.10**	0.04	**0.17**	**0.17**	**0.12**	**0.22**	**0.46**	-0.02	-0.06	**0.22**	**0.26**	**0.18**	-0.04	**0.18**	**0.11**
6	Education	**0.24**	**0.09**	0.05	0.00	**0.10**	1.00	**0.11**	**0.16**	**0.34**	**0.16**	0.00	**0.38**	0.01	-0.04	**0.27**	**0.16**	**0.13**	**0.16**	**0.21**	**0.20**
7	Workplace Financial Education	**0.11**	**0.06**	0.02	-0.01	**0.04**	**0.11**	1.00	**0.14**	**0.12**	0.07	0.01	**0.11**	-0.01	0.00	**0.07**	**0.04**	**0.07**	0.01	**0.08**	**0.10**
8	Subjective Financial Knowledge	**0.19**	**0.12**	**0.22**	**0.06**	**0.17**	**0.16**	**0.14**	1.00	**0.28**	**0.31**	-0.03	**0.27**	-0.03	**-0.12**	**0.32**	**0.13**	**0.09**	**-0.10**	**0.31**	**0.18**
9	Objective Financial Knowledge	**0.24**	**0.22**	**0.26**	**0.16**	**0.17**	**0.34**	**0.12**	**0.28**	1.00	**0.15**	**-0.08**	**0.35**	-0.04	-0.08	**0.35**	**0.18**	0.03	-0.06	**0.27**	**0.21**
10	Financial Confidence	**0.20**	**0.07**	0.01	-0.01	**0.12**	**0.16**	0.07	**0.31**	**0.15**	1.00	-0.03	**0.29**	-0.02	**-0.21**	**0.31**	**0.11**	**0.11**	-0.03	**0.36**	**0.15**
11	Dependent Children	**0.11**	-0.04	**-0.24**	**-0.09**	**0.22**	0.00	0.01	-0.03	**-0.08**	-0.03	1.00	**0.10**	-0.02	**0.10**	**-0.14**	**0.12**	**0.51**	**0.16**	**-0.12**	**0.11**
12	Income	**0.45**	**0.13**	**0.18**	**0.11**	**0.46**	**0.38**	**0.11**	**0.27**	**0.35**	**0.29**	**0.10**	1.00	-0.03	**-0.13**	**0.42**	**0.36**	**0.20**	-0.02	**0.36**	**0.29**
13	Guardian Education	-0.02	0.01	0.00	-0.01	-0.02	0.01	-0.01	-0.03	-0.04	-0.02	-0.02	-0.03	1.00	0.00	**-0.02**	-0.02	-0.01	-0.01	-0.02	-0.02
14	Overspending	-0.08	-0.03	**-0.11**	-0.05	-0.06	-0.04	0.00	**-0.12**	-0.08	**-0.21**	**0.10**	**-0.13**	0.00	1.00	**-0.18**	-0.06	-0.01	**0.10**	**-0.22**	-0.04
15	Credit Card Behaviors	**0.25**	**0.10**	**0.29**	**0.14**	**0.22**	**0.27**	**0.07**	**0.32**	**0.35**	**0.31**	**-0.14**	**0.42**	**-0.20**	**-0.18**	1.00	**0.21**	0.06	**-0.17**	**0.48**	**0.14**
16	Late Mortgage Payments	0.27	0.03	**0.10**	**0.10**	**0.26**	**0.16**	**0.40**	**0.13**	**0.18**	**0.11**	**0.12**	**0.36**	-0.02	-0.06	**0.21**	1.00	**0.14**	-0.02	**0.13**	**0.18**
17	Saving for Child's College	**0.22**	**0.06**	**-0.15**	-0.06	**0.18**	**0.13**	**0.07**	**0.09**	0.03	**0.11**	**0.51**	**0.20**	-0.01	-0.01	**0.06**	**0.14**	1.00	**0.07**	**0.12**	**0.19**
18	Student Loans	0.04	-0.03	**-0.34**	**-0.12**	-0.04	**0.16**	0.01	**-0.10**	-0.06	-0.03	**0.16**	-0.02	-0.01	**0.10**	**-0.17**	-0.02	**0.07**	1.00	**-0.16**	0.07
19	Emergency Fund	**0.24**	**0.10**	**0.23**	**0.07**	**0.18**	**0.21**	**0.08**	**0.31**	**0.27**	**0.36**	**-0.12**	**0.36**	-0.02	**-0.22**	**0.49**	**0.13**	**0.12**	**-0.16**	1.00	**0.18**
20	Retirement Need Calculation	**0.43**	**0.10**	**-0.09**	-0.01	**0.11**	**0.20**	**0.10**	**0.18**	**0.21**	**0.15**	**0.11**	**0.29**	-0.02	-0.04	**0.14**	**0.18**	**0.19**	0.07	**0.18**	1.00

Chapter 5 – Discussion

The current study sought to determine which factors influence making retirement plan contributions through the lens of social learning theory. Two populations, active duty military and civilians, were studied and compared. The discussion that follows focuses on the primary findings from the logistic regression results for each sample. Comparing the regression results revealed some similarities between the two populations, but also some significant differences, providing some support for H_6.

> H_6: Factors related to making regular retirement plan contributions will differ
>
> between civilian and military respondents.

Personal Factors

Education was not a significant predictor for the military respondents, but it was positively correlated for one category of civilians, those with a bachelor's, showing little support for H_1 (i.e., Respondents with greater levels of education will be more likely to make regular contributions to a retirement plan than those with lower levels of education). Similarly, only the civilian sample showed a correlation with workplace financial education ($OR = 1.35$, $p < 0.01$; H6). Thus, no support was found for H_2 (i.e., Respondents who received workplace financial education will be more likely to make regular contributions to a retirement plan than those who did not receive financial education).

> H_1: Respondents with greater levels of education will be more likely to make regular
>
> contributions to a retirement plan than those with lower levels of education.
>
> H_2: Respondents who received workplace financial education will be more likely to
>
> make regular contributions to a retirement plan than those who did not receive
>
> financial education.

Both samples showed a positive correlation with subjective financial knowledge (H_3), objective financial knowledge (H_4), and financial confidence (H_5). Therefore, support was found for Hypotheses 7, 8, and 9. Financial confidence had the greatest effect of the three for both the military and the civilian sample.

> H_3: Respondents with higher levels of subjective financial knowledge will be more likely to make regular contributions to a retirement plan than those with lower subjective financial knowledge.

> H_4: Respondents with higher levels of objective financial knowledge will be more likely to make regular contributions to a retirement plan than those with lower objective financial knowledge.

> H_5: Respondents with higher levels of financial confidence will be more likely to make regular contributions to a retirement plan than those with lower levels of financial confidence.

Environmental Factors

Two environmental factors showed a significant correlation with contributing to a retirement plan for the military sample, being married and those with a guardian who had a graduate degree, both of which showed a negative correlation. This result does support H_7, but not H_{10} (higher levels of guardian education will be positively associated with greater likelihood of making regular contributions to a retirement plan). The civilian model showed similar support for H_7, while having dependent children did not show a significant correlation for either sample. Thus, no support was found for H_8 (i.e., having dependent children will be negatively associated with contributing to a retirement plan.). For the civilian population, both income and the education level of guardians for two categories (those with some college and those with a

graduate degree) of civilian respondents were significant predictors, which support H_9 and H_{10}, respectively.

> H_7: Married respondents will be less likely to make regular contributions to a
> retirement plan than single respondents.
>
> H_8: Having dependent children will be negatively associated with contributing to a
> retirement plan.
>
> H_9: Higher levels of income will be positively associated with contributing to a
> retirement plan.
>
> H_{10}: Higher education levels of the respondent's parent or guardian will be associated
> with greater likelihood to make regular contributions to a retirement plan.

The lack of support for the hypotheses related to environmental factors ($H_6 - H_{10}$) may be explained by the military culture. The military provides similar education, training, and experiences to all its active duty members, regardless of demographic characteristics such as sex, age, or race, or environmental factors such as marital status, income, or background. While these differences in the civilian population may be readily apparent and contribute to varying outcomes, they are less important and possibly non-existent in the military. It should also be noted that married respondents are likely to have higher household income if the civilian spouse works. Having a dependent (either a spouse and/or children) also qualifies the military member to the higher BAH with dependents rate. Increased income would increase the household financial capacity, and it seems to offset the additional expense of a larger family.

All military members receive a similar financial education and have the same retirement plan available to them through the DoD (TSP Bulletin 17-U-1, 2017). While it is ultimately the individual service member's choice whether to contribute to their retirement plan, the barriers are low and are the same for all. This may once again indicate equal treatment and access to

retirement plans for all military members, which may not be indicative of the civilian population. These results also indicate that having dependent children and the associated additional expenses are not putting a strain on the military members' budgets to the point of negatively affecting their ability to save for retirement. The negative correlation of saving for retirement with military members whose guardians have a graduate education was unexpected and contrasts with the result for the civilian population.

Behavioral Factors

Overspending was not a significant predictor of saving for retirement for either sample, providing no support for H_{11}. Positive credit card behaviors and making timely mortgage payments were found to be positively associated with saving for retirement for the civilian sample, while they were not significant for the military sample, providing some support for H_{12} and H_{13}.

These results indicate that even though military members are more likely to overspend or engage in some positive financial behaviors, as previously discussed, these actions are not crowding out saving for retirement. This may be due to the emphasis on retirement saving in the military financial education curriculum. It may also be attributed to a greater confidence military members have to meet their financial obligations due to the stability of their jobs compared with the civilian populace.

H_{11}: Overspending will be negatively associated with making regular contributions to a retirement plan.

H_{12}: Positive credit card behaviors will be positively associated with making regular contributions to a retirement plan.

H_{13}: Mortgage payment delinquency will be negatively associated with making regular contributions to a retirement plan.

Saving for a child's college fund (H_{14}) and having student loans (H_{15}) showed a positive association for both samples. These results indicate that neither is affecting either respondents' ability to save for retirement, and may indicate an ingrained habit of saving, particularly for those with higher levels of education (and likely higher levels of income). As discussed regarding other spending behaviors, student loans may not affect retirement plan contributions for military members due to the emphasis on saving in their financial education program or the job security of military members and the resulting confidence to meet their financial obligations. Having an emergency fund (H_{16}) showed a positive correlation for both populations, as expected. An even greater positive association was found for both samples for those who had calculated their retirement needs (H_{17}). As a result, support was found for Hypotheses 16 and 17; on the other hand, no support was found for Hypotheses 14 and 15.

H_{14}: Saving for a child's college fund will be negatively associated with making regular contributions to a retirement plan.

H_{15}: Having student loans will be negatively associated with making regular contributions to a retirement plan.

H_{16}: Having an emergency fund will be positively associated with making regular contributions to a retirement plan.

H_{17}: Calculating retirement needs will be positively associated with making regular contributions to a retirement plan.

Implications

The current study analyzed various factors that influenced making contributions to a retirement plan by both active duty members and civilians. Military leadership and military financial program sponsors can use this information to better understand these factors and to adjust current focus areas in order to increase TSP participation. Increased participation will help

to offset the effects of the recent transition in the military retirement system from an entirely defined benefit plan to a hybrid plan, with some elements of a defined contribution system. In the end, military members could be significantly better off under the new system if they take advantage of the government's matching contributions and the stock market's potential for returns on their invested funds. This research also offers insight into factors that are correlated with civilian participation in retirement plans. These factors may also influence retirement plan contributions of military members as their retirement plan shifts to more closely resemble those available in the civilian sector.

One key finding from the research results was related to the lack of effectiveness of military financial education at increasing retirement savings rates. While receiving financial education from the respondents' workplace did not show an increase in likelihood to contribute to a retirement plan for military members, it was positively correlated for the civilian population. This would indicate that the current military financial education is not statistically significant at increasing retirement plan participation. The DoD could improve the effectiveness of its financial education programs by reviewing the curriculum used in civilian programs.

Another theme that emerged was the importance of an individual's self-efficacy in increasing the likelihood of making retirement plan contributions. Several factors related to attainment, which can positively increase self-efficacy. Objective financial knowledge showed a positive correlation for both civilians and military members. Savings behaviors such as saving for a child's college or establishing an emergency fund may provide a similar sense of accomplishment. Also, Social Learning Theory suggests modeling can increase self-efficacy, and a person is more likely to mimic a behavior if the model is similar to the individual, who admires the ultimate outcome. Thus, current or former military members who have successfully saved for their retirement would be excellent candidates to instruct PFM lessons to active duty members.

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Social persuasion could be used to further increase self-efficacy by providing encouragement to save for retirement. As discussed previously, observability of an action is a critical component in leveraging positive peer effects. Military units could sponsor TSP participation drives and publicize increases in rates of participation or overall contributions, like those conducted for various military-related charities. Lastly, addressing potential physiological stressors could help to increase self-efficacy. The study indicated that an increased level of financial confidence and calculating how much one needs to save for retirement in order to meet a desired quality of life are both positively correlated with making retirement plan contributions. Both of these factors can provide a military member with the self-assurance needed to overcome financial stressors without impacting a retirement savings plan.

Several financial behaviors should be encouraged in order to increase the likelihood a military member will contribute to a retirement plan. Incentives should be structured to encourage positive savings behaviors. While the new military retirement system offers matching contributions up to 4% of the member's salary, the effect of this incentive is unknown. However, establishing an emergency fund equal to three to six months of a servicemember's salary was shown to be positively correlated with saving for retirement. This backstop helps to alleviate the potential financial shock from an unexpected expense that could derail a successful retirement contribution program. It should be noted that a properly balanced budget can achieve multiple financial objectives such as saving for a child's college and paying off student loans in addition to saving for retirement, as evidenced by the results from the civilian sample in the study.

Limitations

The major limitation for this study is the active duty sample may not be representative of the military population. Active duty military members made up 3.2% of the overall sample, while they represent less than 0.4% of the U.S. population as a whole. As discussed, this

population has a unique culture and environment that is not reproducible in other populations. Furthermore, the demographics of the military do not reflect the civilian population at large.

The data set did not include rank of the respondents, which would provide insights into the population of interest and could influence the financial outcomes. Rank is correlated with income, but the data set did not provide enough information to make valid estimates of individual ranks. Race was limited to white, non-Hispanic and other. This limits the insights into the potential correlation other race categories may have on the financial outcome. Similarly, the data set had limited variables available to operationalize respondents' home environment. The education level of respondents' guardians only provides limited insight into this factor.

Several of the variables, such as subjective financial knowledge, income, and spending more than one earns were subjective in nature, which may or may not reflect reality. More accurate results could be obtained from objective measures such as tax returns that were not available in the data set. Lastly, all data analyzed were from respondents that self-selected to participate in the online survey in exchange for an incentive. FINRA (2018) set quotas for each state that approximated its population for age by various variables such as gender, ethnicity, education, and income, and respondents were selected from panels with millions of individuals using non-probability quota sampling. However, the nature of the survey may lend itself to errors such as self-selection bias as those who are more responsive to the incentives offered are more likely to participate.

Recommendation for Future Studies and Conclusions

The study revealed several potential areas for future research. First, the recent implementation of the new DoD retirement system provides two populations: those who opted to stay in the current defined benefit program and those who opted into the new hybrid retirement

plan. Research involving this natural experiment may provide insight into what factors influence each population, and what factors produce more favorable outcomes.

Secondly, military members who joined after the implementation of the new retirement system do not have a choice, they are automatically enrolled into the new retirement plan. Effects of this change on job satisfaction, retention, and various financial outcomes such as TSP participation and use of alternative financing sources could help shape DoD policy and help guide recruitment and retention efforts.

Third, the current default TSP fund for new members is an age-appropriate lifecycle fund in accordance with TSP Bulletin 17-U-1 (TSP, 2017). While the default may be the most appropriate for the majority of members, the fund decision should be based on the member's overall investment portfolio and objectives. Research into this area could uncover either too much or too little risk associated with a service member's TSP account.

Lastly, military members who are enrolled in the new retirement system will accrue benefits in their TSP regardless of the level of their own contributions since the government will automatically make contributions on their behalf. Members who leave service have the potential for a large nest egg that can remain in the TSP, be transferred to another retirement plan, or be withdrawn after taxes and penalties are paid. The TSP Board and financial institutions will be interested in the size of such accounts as well as the intention of the service member regarding the disposition of the assets in the accounts.

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Appendix A SAS Coding

```
libname DISSS "C:\Users\LTJAY\Desktop\Dissertation\2018";


proc import datafile="C:\Users\LTJAY\Desktop\Dissertation\2018\NFCS 2018 State Data
190603.csv"
out=disss.disdata dbms=dlm replace;
delimiter=",";
getnames=yes;
guessingrows=27600;


data disdata;
set disss.disdata;


/*VARIABLES*/


/*MILITARY*/
military=am21;
if military=1 then activeduty=1; else activeduty=0;
if military=2 then veteran=1; else veteran=0;
if military=3 then civilian=1; else civilian=0;



/***********************PERSONAL FACTORS********************/


/*GENDER*/
gender=a3;
if gender = 1 then male=1; else male=0;


/*AGE*/
age=A3Ar_w;
if age = 1 then age18_24=1; else age18_24=0;
if age = 2 then age25_34=1; else age25_34=0;
```

```
if age = 3 then age35_44=1; else age35_44=0;
if age in (4:6) then age45over=1; else age45over=0;


/*ETHNICITY*/
race=a4A_new_w;
if race=1 then white=1; else white=0;
if race=2 then nonwhite=1; else nonwhite=0;


/*MARITAL STATUS*/
marital=a6;
if marital=1 then married=1; else married=0;
if marital in (2:5) then single=1; else single=0;


/*EDUCATION*/
education=a5_2015;
if education in (1:3) then hs=1; else hs=0;
if education in (4:5) then somecoll=1; else somecoll=0;
if education = 6 then bachelors=1; else bachelors=0;
if education = 7 then grad=1; else grad=0;


/*FINANCIAL EDUCATION*/

/*if m21_3<97;*/
wfined=m21_3;
if wfined=1 then wfinedyes=1; else wfinedyes=0;


/*if m21_4<97;*/
if m21_4=1 then milfinedyes=1; else milfinedyes=0;


workfined = wfinedyes + milfinedyes;
if workfined in (1:2) then workfinedyes = 1; else workfinedyes = 0;


/*SUBJECTIVE FINANCIAL KNOWLEDGE*/
```

```
if m4<97;
subfinknow=m4;


/*OBJECTIVE FINANCIAL KNOWLEDGE*/


if m6=1 then objfinknow1=1; else objfinknow1=0;
if m7=3 then objfinknow2=1; else objfinknow2=0;
if m8=2 then objfinknow3=1; else objfinknow3=0;
if m9=1 then objfinknow4=1; else objfinknow4=0;
if m31=2 then objfinknow5=1; else objfinknow5=0;
if m10=2 then objfinknow6=1; else objfinknow6=0;
objfinknow=objfinknow1 + objfinknow2 + objfinknow3 + objfinknow4 + objfinknow5 +
objfinknow6;


/*FINANCIAL CONFIDENCE*/
if j43<97;
confidence=j43;
if confidence in (1:2) then confidenceno=1; else confidenceno=0;
if confidence in (3:4) then confidenceyes=1; else confidenceyes=0;




/****************ENVIRONMENTAL FACTORS/*******************/
/*CHILDREN*/
/*if a11<97;*/
children=a11;
if children in (1:4) then children=1; else children=0;


/*INCOME*/
income=a8;
if income in (1:2) then income_lt25=1; else income_lt25=0;
if income in (3:4) then income_25_50=1; else income_25_50=0;
if income = 5 then income_50_75=1; else income_50_75=0;
if income = 6 then income_75_100=1; else income_75_100=0;
```

```
if income in (7:8) then income_gt100=1; else income_gt100=0;


/*GUARDIAN EDUCATION*/
/*if a41<97;*/
guardianed=a41;
if guardianed in (1:2) then guardianedhs = 1; else guardianedhs=0;
if guardianed in (3:4) then guardianedsomecoll=1; else guardianedsomecoll=0;
if guardianed = 5 then guardianedbachelors = 1; else guardianedbachelors =0;
if guardianed = 6 then guardianedgrad = 1; else guardianedgrad=0;


/****************BEHAVIORAL FACTORS/*******************/


/*OVERSPEND*/
/*if j3<97;*/
if j3=1 or j3=3 then underspend=1; else underspend=0;
if j3=2 then overspend=1; else overspend=0;


/*CREDIT CARD BEHAVIORS*/
/*if F2_1<97;*/
ccfull=f2_1;
if ccfull=1 then ccfullyes=1; else ccfullyes=0;


/*if F2_2<97;*/
ccbalance=f2_2;
if ccbalance=2 then ccbalanceno=1; else ccbalanceno=0;


/*if F2_3<97;*/
ccminimum=f2_3;
if ccminimum=2 then ccminimumno=1; else ccminimumno=0;


/*if F2_4<97;*/
ccfee=f2_4;
if ccfee=2 then ccfeeno=1; else ccfeeno=0;
```

```
/*if F2_5<97;*/
ccover=f2_5;
if ccover=2 then ccoverno=1; else ccoverno=0;


/*if F2_6<97;*/
ccadvance=f2_6;
if ccadvance=2 then ccadvanceno=1; else ccadvanceno=0;


ccbeh = ccfullyes + ccbalanceno + ccminimumno + ccfeeno + ccoverno + ccadvanceno;


/*MORTGAGE DILINQUENCY*/
if e15_2015 = 1 then mortgagelateno=1; else mortgagelateno=0;


/*KID COLLEGE*/
/*if j6<97;*/
kidcollege=j6;
if kidcollege=1 then kidcollegeyes=1; else kidcollegeyes=0;
if kidcollege=2 then kidcollegeno=1; else kidcollegeno=0;


/*STUDENT LOANS*/
if g30<98;
studentloans=g30_1 + g30_2 + g30_3 + g30_4 + g30_5;
if studentloans > 0 then studentloansyes=1; else studentloansyes=0;
if studentloans = 97 then studentloansno=1; else studentloansno=0;


/*EMERGENCY FUND*/
/*if j5<97;*/
emergency=j5;
if emergency=1 then emergencyyes=1; else emergencyyes=0;
if emergency=2 then emergencyno=1; else emergencyno=0;


/*RETIREMENT CALCULATION*/
```

```
/*if j8<97;*/
retirecalc=j8;
if retirecalc=1 then retirecalcyes=1; else retirecalcyes=0;
if retirecalc=2 then retirecalcno=1; else retirecalcno=0;
/****************************DV**************************/


/*RETIREMENT CONTRIBUTIONS*/
/*if 0<c5_2012<97;*/
retirement=c5_2012;
if retirement=1 then retirementyes=1; else retirementyes=0;
if retirement=2 then retirementno=1; else retirementno=0;


/***************************PROCEDURES*******************/
proc freq;
where activeduty=1;
table

retirementyes

male
age18_24 age25_34 age35_44 age45over
white
single married
hs somecoll bachelors grad
workfinedyes
subfinknow
objfinknow

confidenceyes

children
income_lt25
income_25_50
```

```
        income_50_75
        income_75_100
        income_gt100
        guardianedhs
        guardianedsomecoll
        guardianedbachelors
        guardianedgrad

        overspend
        ccbeh
        mortgagelateno
        kidcollegeyes
        studentloansyes
        emergencyyes
        retirecalcyes
        ;
run;

proc freq;
where civilian=1;
table

        retirementyes

        male
        age18_24 age25_34 age35_44 age45over
        white
        single married
        hs somecoll bachelors grad
        workfinedyes
        subfinknow
        objfinknow
```

confidenceyes

children
income_lt25
income_25_50
income_50_75
income_75_100
income_gt100
guardianedhs
guardianedsomecoll
guardianedbachelors
guardianedgrad

overspend
ccbeh
mortgagelateno
kidcollegeyes
studentloansyes
emergencyyes
retirecalcyes
;
run;

proc means;
where activeduty=**1**;
var

retirementyes

male
age18_24 age25_34 age35_44 age45over
white

```
    married
    hs somecoll bachelors grad
    workfinedyes
    subfinknow
    objfinknow

    confidenceyes

    children
    income_lt25
    income_25_50
    income_50_75
    income_75_100
    income_gt100
    guardianedhs
    guardianedsomecoll
    guardianedbachelors
    guardianedgrad

    overspend
    ccbeh
    mortgagelateno
    kidcollegeyes
    studentloansyes
    emergencyyes
    retirecalcyes
    ;
run;

proc means;
where civilian=1;
var
```

```
    retirementyes

    male
    age18_24 age25_34 age35_44 age45over
    white
    married
    hs somecoll bachelors grad
    workfinedyes
    subfinknow
    objfinknow

    confidenceyes

    children
    income_lt25
    income_25_50
    income_50_75
    income_75_100
    income_gt100
    guardianedhs
    guardianedsomecoll
    guardianedbachelors
    guardianedgrad

    overspend
    ccbeh
    mortgagelateno
    kidcollegeyes
    studentloansyes
    emergencyyes
    retirecalcyes
    ;
    run;
```

```
proc ttest;
class activeduty;
var retirementyes;
run;


proc ttest;
class activeduty;
var male;
run;


proc freq;
table activeduty*age/chisq;
run;


proc ttest;
class activeduty;
var white;
run;


proc ttest;
class activeduty;
var married;
run;


proc freq;
table military*education/chisq;
run;


proc ttest;
class activeduty;
```

```
       var workfinedyes;
       run;


       proc ttest;
       class activeduty;
       var subfinknow;
       run;


       proc ttest;
       class activeduty;
       var objfinknow;
       run;


       proc ttest;
       class activeduty;
       var confidenceyes;
       run;


       proc ttest;
       class activeduty;
       var children;
       run;


       proc freq;
       table military*income/chisq;
       run;


       proc freq;
       table military*guardianed/chisq;
       run;


       proc ttest;
       class activeduty;
```

```
        var overspend;
    run;


    proc ttest;
    class activeduty;
    var ccbeh;
    run;


    proc ttest;
    class activeduty;
    var mortgagelateno;
    run;


    proc ttest;
    class activeduty;
    var kidcollegeyes;
    run;


    proc ttest;
    class activeduty;
    var studentloansyes;
    run;


    proc ttest;
    class activeduty;
    var emergencyyes;
    run;


    proc ttest;
    class activeduty;
    var retirecalcyes;
    run;
```

```
/*****************************/

proc logistic descending;
where activeduty=1;
model retirementyes=

male
age25_34 age35_44 age45over
white
married
somecoll bachelors grad
workfinedyes
subfinknow
objfinknow

confidenceyes

children
income_25_50
income_50_75
income_75_100
income_gt100
guardianedsomecoll
guardianedbachelors
guardianedgrad

overspend
ccbeh
mortgagelateno
kidcollegeyes
studentloansyes
emergencyyes
retirecalcyes
```

```
      /stb;
      run;

      proc logistic descending;
      where civilian=1;
      model retirementyes=

      male
      age25_34 age35_44 age45over
      white
      married
      somecoll bachelors grad
      workfinedyes
      subfinknow
      objfinknow

      confidenceyes

      children
      income_25_50
      income_50_75
      income_75_100
      income_gt100
      guardianedsomecoll
      guardianedbachelors
      guardianedgrad

      overspend
      ccbeh
      mortgagelateno
      kidcollegeyes
      studentloansyes
      emergencyyes
```

```
    retirecalcyes
    /stb;
run;


proc corr;
where activeduty=1;
var

    retirementyes

    male
    age
    white
    married
    education
    workfinedyes
    subfinknow
    objfinknow

    confidenceyes

    children
    income
    guardianed

    overspend
    ccbeh
    mortgagelateno
    kidcollegeyes
    studentloansyes
    emergencyyes
    retirecalcyes
    ;
```

```
run;

proc corr;
where civilian=1;
var

retirementyes

male
age
white
married
education
workfinedyes
subfinknow
objfinknow

confidenceyes

children
income
guardianed

overspend
ccbeh
mortgagelateno
kidcollegeyes
studentloansyes
emergencyyes
retirecalcyes
;
run;
```

```sas
proc reg;
where activeduty=1;
model retirementyes=

male
age25_34 age35_44 age45over
white
married
somecoll bachelors grad
workfinedyes
subfinknow
objfinknow

confidenceyes

children
income_25_50
income_50_75
income_75_100
income_gt100
guardianedsomecoll
guardianedbachelors
guardianedgrad

overspend
ccbeh
e15_2015
kidcollegeyes
studentloansyes
emergencyyes
retirecalcyes
/vif tol;
run;
```

```
proc reg;
where civilian=1;
model retirementyes=

male
age25_34 age35_44 age45over
white
married
somecoll bachelors grad
workfinedyes
subfinknow
objfinknow

confidenceyes

children
income_25_50
income_50_75
income_75_100
income_gt100
guardianedsomecoll
guardianedbachelors
guardianedgrad

overspend
ccbeh
e15_2015
kidcollegeyes
studentloansyes
emergencyyes
retirecalcyes
/vif tol;
```

```
run;
quit;
```

Appendix B SAS Output

The SAS System

The FREQ Procedure

retirementyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	185	25.84	185	25.84
1	531	74.16	716	100.00

male	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	150	20.95	150	20.95
1	566	79.05	716	100.00

age18_24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	616	86.03	616	86.03
1	100	13.97	716	100.00

age25_34	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	328	45.81	328	45.81
1	388	54.19	716	100.00

age35_44	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	538	75.14	538	75.14
1	178	24.86	716	100.00

age45over	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	666	93.02	666	93.02
1	50	6.98	716	100.00

white	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	317	44.27	317	44.27
1	399	55.73	716	100.00

single	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	369	51.54	369	51.54
1	347	48.46	716	100.00

married	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	347	48.46	347	48.46
1	369	51.54	716	100.00

hs	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	569	79.47	569	79.47
1	147	20.53	716	100.00

somecoll	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	352	49.16	352	49.16
1	364	50.84	716	100.00

bachelors	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	604	84.36	604	84.36
1	112	15.64	716	100.00

grad	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	623	87.01	623	87.01
1	93	12.99	716	100.00

workfinedyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	432	60.34	432	60.34
1	284	39.66	716	100.00

subfinknow	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	21	2.93	21	2.93
2	7	0.98	28	3.91

3	14	1.96	42	5.87
4	44	6.15	86	12.01
5	83	11.59	169	23.60
6	112	15.64	281	39.25
7	435	60.75	716	100.00

objfinknow	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	35	4.89	35	4.89
1	98	13.69	133	18.58
2	307	42.88	440	61.45
3	169	23.60	609	85.06
4	55	7.68	664	92.74
5	29	4.05	693	96.79
6	23	3.21	716	100.00

confidenceyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	60	8.38	60	8.38
1	656	91.62	716	100.00

children	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	178	24.86	178	24.86
1	538	75.14	716	100.00

income_lt25	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	632	88.27	632	88.27
1	84	11.73	716	100.00

income_25_50	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	629	87.85	629	87.85
1	87	12.15	716	100.00

income_50_75	Frequency	Percent	Cumulative Frequency	Cumulative Percent

| | 0 | 621 | 86.73 | 621 | 86.73 |
| | 1 | 95 | 13.27 | 716 | 100.00 |

income_75_100	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	422	58.94	422	58.94
1	294	41.06	716	100.00

income_gt100	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	560	78.21	560	78.21
1	156	21.79	716	100.00

guardianedhs	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	562	78.49	562	78.49
1	154	21.51	716	100.00

guardianedsomecoll	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	378	52.79	378	52.79
1	338	47.21	716	100.00

guardianedbachelors	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	586	81.84	586	81.84
1	130	18.16	716	100.00

guardianedgrad	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	623	87.01	623	87.01
1	93	12.99	716	100.00

overspend	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	444	62.01	444	62.01
1	272	37.99	716	100.00

ccbeh	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	42	5.87	42	5.87
1	273	38.13	315	43.99
2	77	10.75	392	54.75
3	105	14.66	497	69.41
4	118	16.48	615	85.89
5	35	4.89	650	90.78
6	66	9.22	716	100.00

mortgagelateno	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	609	85.06	609	85.06
1	107	14.94	716	100.00

kidcollegeyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	269	37.57	269	37.57
1	447	62.43	716	100.00

studentloansyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	208	29.05	208	29.05
1	508	70.95	716	100.00

emergencyyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	142	19.83	142	19.83
1	574	80.17	716	100.00

retirecalcyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	152	21.23	152	21.23
1	564	78.77	716	100.00

The SAS System

The FREQ Procedure

retirementyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	14520	67.67	14520	67.67
1	6937	32.33	21457	100.00

male	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	13311	62.04	13311	62.04
1	8146	37.96	21457	100.00

age18_24	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	19106	89.04	19106	89.04
1	2351	10.96	21457	100.00

age25_34	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17815	83.03	17815	83.03
1	3642	16.97	21457	100.00

age35_44	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17734	82.65	17734	82.65
1	3723	17.35	21457	100.00

age45over	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	9716	45.28	9716	45.28
1	11741	54.72	21457	100.00

white	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	5386	25.10	5386	25.10
1	16071	74.90	21457	100.00

single	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	11177	52.09	11177	52.09
1	10280	47.91	21457	100.00

married	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	10280	47.91	10280	47.91
1	11177	52.09	21457	100.00

hs	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	15503	72.25	15503	72.25
1	5954	27.75	21457	100.00

somecoll	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	13583	63.30	13583	63.30
1	7874	36.70	21457	100.00

bachelors	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	16664	77.66	16664	77.66
1	4793	22.34	21457	100.00

grad	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	18621	86.78	18621	86.78
1	2836	13.22	21457	100.00

workfinedyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	20099	93.67	20099	93.67
1	1358	6.33	21457	100.00

subfinknow	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	545	2.54	545	2.54
2	410	1.91	955	4.45

			Cumulative	Cumulative
3	1282	5.97	2237	10.43
4	3671	17.11	5908	27.53
5	7161	33.37	13069	60.91
6	5532	25.78	18601	86.69
7	2856	13.31	21457	100.00

objfinknow	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	1419	6.61	1419	6.61
1	2372	11.05	3791	17.67
2	3648	17.00	7439	34.67
3	4547	21.19	11986	55.86
4	4363	20.33	16349	76.19
5	3478	16.21	19827	92.40
6	1630	7.60	21457	100.00

confidenceyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	5119	23.86	5119	23.86
1	16338	76.14	21457	100.00

children	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	13970	65.11	13970	65.11
1	7487	34.89	21457	100.00

income_lt25	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	16810	78.34	16810	78.34
1	4647	21.66	21457	100.00

income_25_50	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	15943	74.30	15943	74.30
1	5514	25.70	21457	100.00

income_50_75	Frequency	Percent	Cumulative Frequency	Cumulative Percent

| | 0 | 17221 | 80.26 | 17221 | 80.26 |
| | 1 | 4236 | 19.74 | 21457 | 100.00 |

income_75_100	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	18582	86.60	18582	86.60
1	2875	13.40	21457	100.00

income_gt100	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17272	80.50	17272	80.50
1	4185	19.50	21457	100.00

guardianedhs	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	12849	59.88	12849	59.88
1	8608	40.12	21457	100.00

guardianedsomecoll	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	15699	73.16	15699	73.16
1	5758	26.84	21457	100.00

guardianedbachelors	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17211	80.21	17211	80.21
1	4246	19.79	21457	100.00

guardianedgrad	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	18976	88.44	18976	88.44
1	2481	11.56	21457	100.00

overspend	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	17486	81.49	17486	81.49
1	3971	18.51	21457	100.00

ccbeh	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	4598	21.43	4598	21.43
1	794	3.70	5392	25.13
2	1443	6.73	6835	31.85
3	3082	14.36	9917	46.22
4	3059	14.26	12976	60.47
5	1258	5.86	14234	66.34
6	7223	33.66	21457	100.00

mortgagelateno	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	15198	70.83	15198	70.83
1	6259	29.17	21457	100.00

kidcollegeyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	18818	87.70	18818	87.70
1	2639	12.30	21457	100.00

studentloansyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	15985	74.50	15985	74.50
1	5472	25.50	21457	100.00

emergencyyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	10998	51.26	10998	51.26
1	10459	48.74	21457	100.00

retirecalcyes	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	14532	67.73	14532	67.73
1	6925	32.27	21457	100.00

The SAS System

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
retirementyes	716	0.7416201	0.4380499	0	1.0000000
male		0.7905028	0.4072343	0	1.0000000
age18_24	716	0.1396648	0.3468812	0	1.0000000
age25_34	716	0.5418994	0.4985896	0	1.0000000
age35_44		0.2486034	0.4325055	0	1.0000000
age45over	716	0.0698324	0.2550425	0	1.0000000
white		0.5572626	0.4970574	0	1.0000000
married	716	0.5153631	0.5001133	0	1.0000000
hs	716	0.2053073	0.4042083	0	1.0000000
somecoll		0.5083799	0.5002793	0	1.0000000
bachelors	716	0.1564246	0.3635113	0	1.0000000
grad	716	0.1298883	0.3364155	0	1.0000000
workfinedyes		0.3966480	0.4895438	0	1.0000000
subfinknow	716	6.1243017	1.4220723	1.0000000	7.0000000
objfinknow		2.4050279	1.2618900	0	6.0000000
confidenceyes	716	0.9162011	0.2772797	0	1.0000000
children	716	0.7513966	0.4325055	0	1.0000000
income_lt25		0.1173184	0.3220243	0	1.0000000
income_25_50	716	0.1215084	0.3269455	0	1.0000000
income_50_75	716	0.1326816	0.3394674	0	1.0000000
income_75_100		0.4106145	0.4922893	0	1.0000000
income_gt100	716	0.2178771	0.4130920	0	1.0000000
guardianedhs		0.2150838	0.4111677	0	1.0000000
guardianedsomecoll	716	0.4720670	0.4995681	0	1.0000000
guardianedbachelors	716	0.1815642	0.3857545	0	1.0000000
guardianedgrad		0.1298883	0.3364155	0	1.0000000
overspend	716	0.3798883	0.4856981	0	1.0000000

ccbeh	716	2.4930168	1.7600719	0	6.0000000
mortgagelateno		0.1494413	0.3567722	0	1.0000000
kidcollegeyes	716	0.6243017	0.4846412	0	1.0000000
studentloansyes	716	0.7094972	0.4543118	0	1.0000000
emergencyyes		0.8016760	0.3990163	0	1.0000000
retirecalcyes	716	0.7877095	0.4092153	0	1.0000000
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The SAS System

The MEANS Procedure

Variable	N	Mean	Std Dev	Minimum	Maximum
retirementyes	21457	0.3232978	0.4677462	0	1.0000000
male		0.3796430	0.4853094	0	1.0000000
age18_24	21457	0.1095680	0.3123578	0	1.0000000
age25_34	21457	0.1697348	0.3754084	0	1.0000000
age35_44		0.1735098	0.3786962	0	1.0000000
age45over	21457	0.5471874	0.4977800	0	1.0000000
white		0.7489863	0.4336065	0	1.0000000
married	21457	0.5209023	0.4995745	0	1.0000000
hs	21457	0.2774852	0.4477684	0	1.0000000
somecoll		0.3669665	0.4819885	0	1.0000000
bachelors	21457	0.2233770	0.4165187	0	1.0000000
grad	21457	0.1321713	0.3386848	0	1.0000000
workfinedyes		0.0632894	0.2434884	0	1.0000000
subfinknow	21457	5.0745211	1.3316166	1.0000000	7.0000000
objfinknow		3.1659132	1.6478432	0	6.0000000
confidenceyes	21457	0.7614298	0.4262193	0	1.0000000
children	21457	0.3489304	0.4766430	0	1.0000000
income_lt25		0.2165727	0.4119185	0	1.0000000
income_25_50	21457	0.2569791	0.4369780	0	1.0000000
income_50_75	21457	0.1974181	0.3980598	0	1.0000000
income_75_100		0.1339889	0.3406483	0	1.0000000
income_gt100	21457	0.1950412	0.3962417	0	1.0000000
guardianedhs		0.4011744	0.4901476	0	1.0000000
guardianedsomecoll	21457	0.2683507	0.4431114	0	1.0000000
guardianedbachelors	21457	0.1978841	0.3984136	0	1.0000000
guardianedgrad		0.1156266	0.3197841	0	1.0000000
overspend	21457	0.1850678	0.3883616	0	1.0000000

ccbeh	2145 7	3.4855758	2.3054400	0	6.0000000
mortgagelateno		0.2916997	0.4545554	0	1.0000000
kidcollegeyes	2145 7	0.1229902	0.3284336	0	1.0000000
studentloansyes	2145 7	0.2550217	0.4358836	0	1.0000000
emergencyyes	7	0.4874400	0.4998539	0	1.0000000
retirecalcyes	2145 7	0.3227385	0.4675345	0	1.0000000
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	2145 7				

	The SAS System

The TTEST Procedure

Variable: retirementyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.3232	0.4677	0.00298	0	1.0000
1		716	0.7416	0.4380	0.0164	0	1.0000
Diff (1-2)	Pooled		-0.4184	0.4669	0.0177		
Diff (1-2)	Satterthwaite		-0.4184		0.0166		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.3232	0.3174	0.3291	0.4677	0.4636	0.4719
1		0.7416	0.7095	0.7738	0.4380	0.4165	0.4620
Diff (1-2)	Pooled	-0.4184	-0.4531	-0.3837	0.4669	0.4629	0.4710
Diff (1-2)	Satterthwaite	-0.4184	-0.4511	-0.3857			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-23.64	<.0001
Satterthwaite	Unequal	762.98	-25.15	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.14	0.0175

Distribution of retirementyes

Q-Q Plots of retirementyes
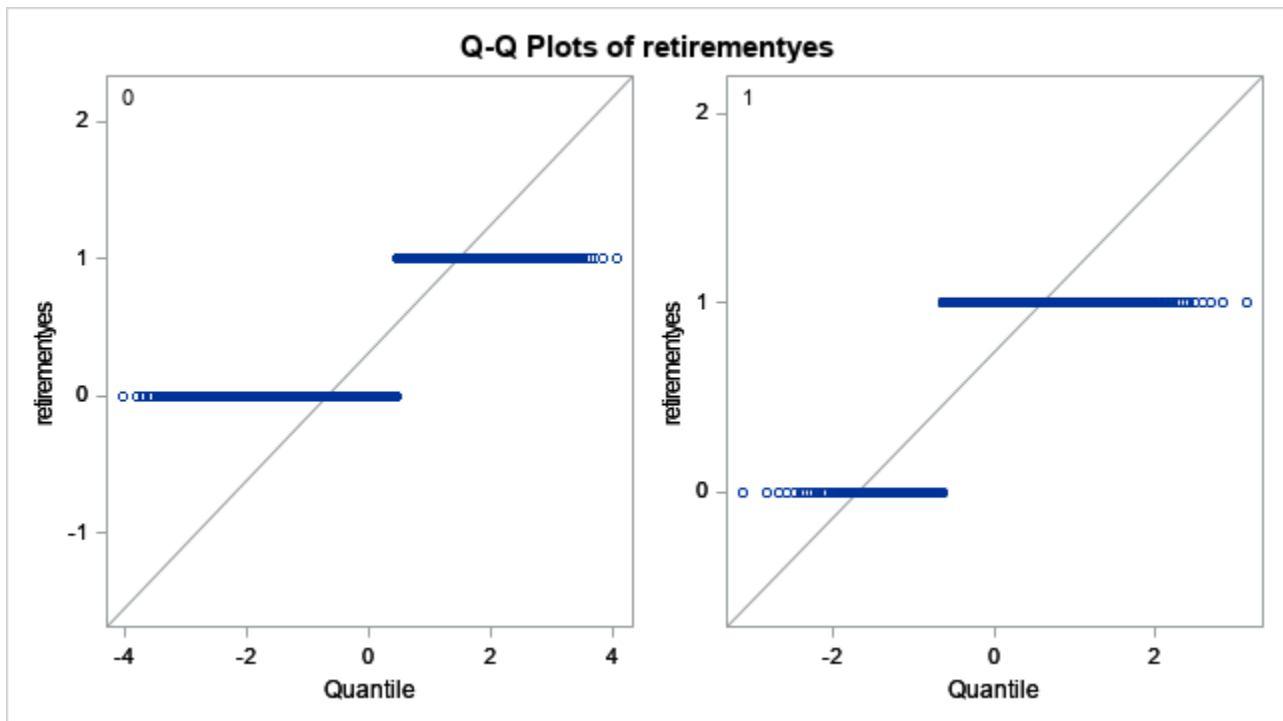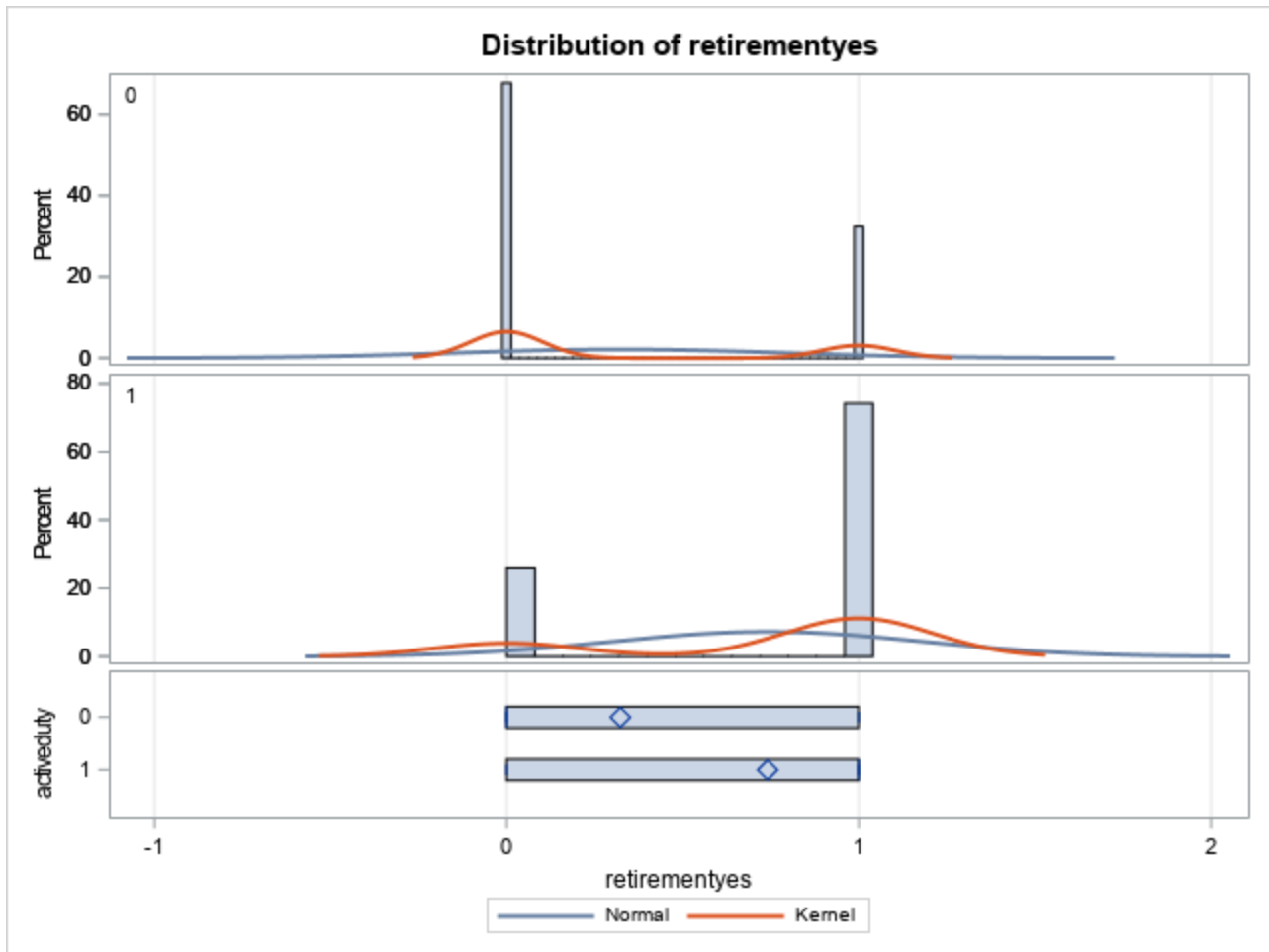
The SAS System

The TTEST Procedure

Variable: male

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.4350	0.4958	0.00315	0	1.0000
1		716	0.7905	0.4072	0.0152	0	1.0000
Diff (1-2)	Pooled		-0.3555	0.4935	0.0187		
Diff (1-2)	Satterthwaite		-0.3555		0.0155		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.4350	0.4288	0.4412	0.4958	0.4914	0.5002
1		0.7905	0.7606	0.8204	0.4072	0.3872	0.4295
Diff (1-2)	Pooled	-0.3555	-0.3922	-0.3189	0.4935	0.4892	0.4978
Diff (1-2)	Satterthwaite	-0.3555	-0.3860	-0.3250			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-19.00	<.0001
Satterthwaite	Unequal	777.67	-22.87	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.48	<.0001

Distribution of male

Q-Q Plots of male
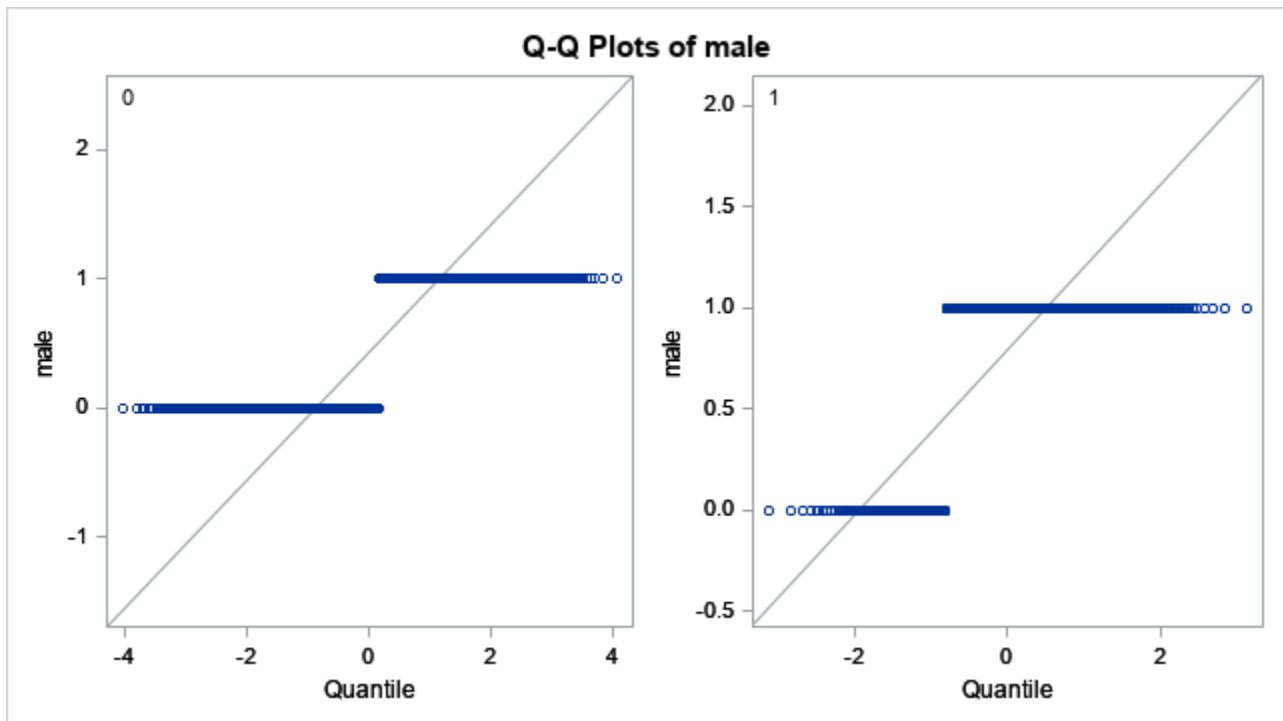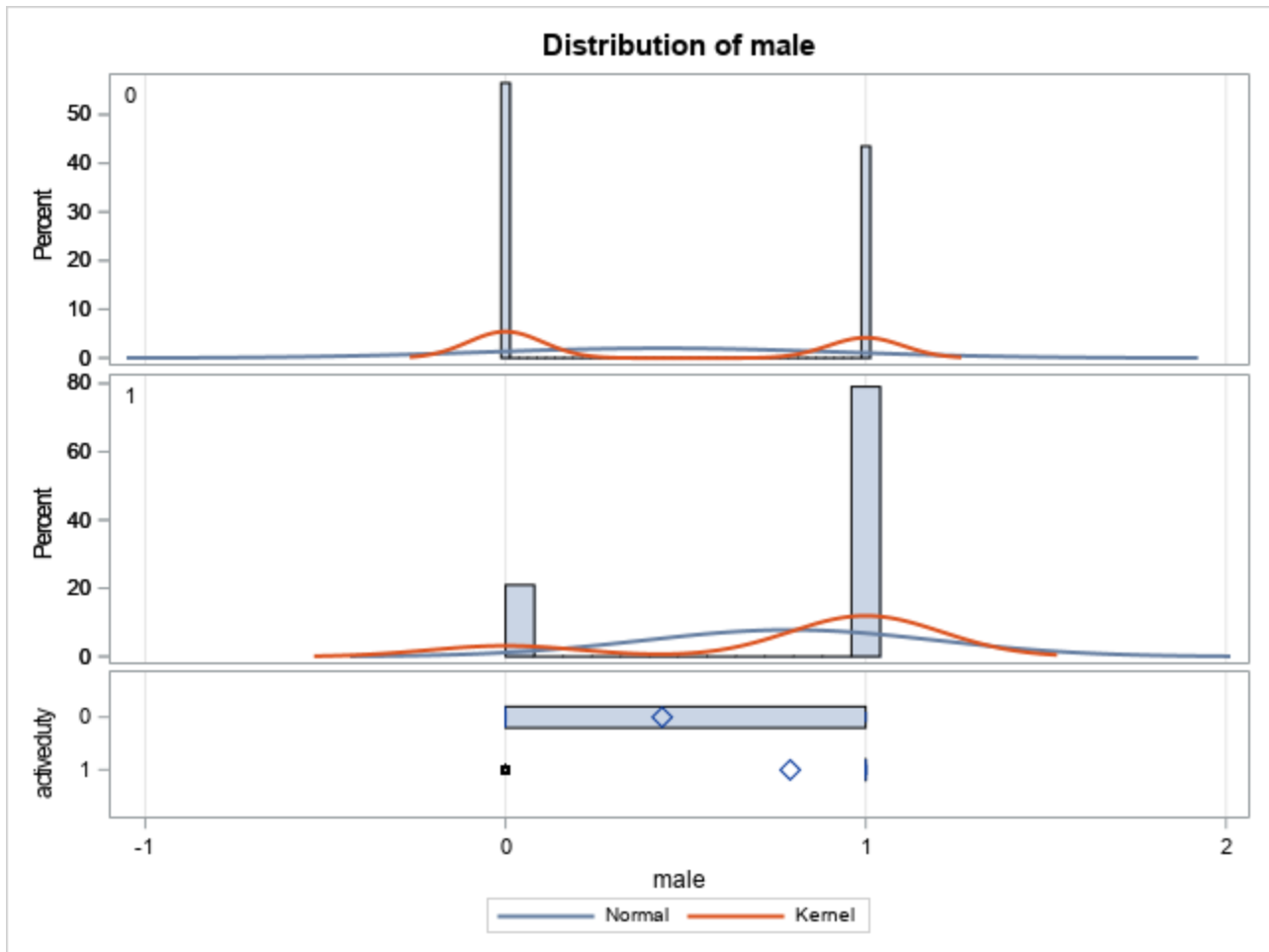
The SAS System

The FREQ Procedure

Table of activeduty by age

Frequency / Percent / Row Pct / Col Pct	age						
activeduty	1	2	3	4	5	6	Total
0	2519	4019	4067	4343	4611	5157	24716
	9.90	15.80	15.99	17.08	18.13	20.28	97.18
	10.19	16.26	16.45	17.57	18.66	20.87	
	96.18	91.20	95.81	99.20	99.85	99.85	
1	100	388	178	35	7	8	716
	0.39	1.53	0.70	0.14	0.03	0.03	2.82
	13.97	54.19	24.86	4.89	0.98	1.12	
	3.82	8.80	4.19	0.80	0.15	0.15	
Total	2619	4407	4245	4378	4618	5165	25432
	10.30	17.33	16.69	17.21	18.16	20.31	100.00

Statistics for Table of activeduty by age

Statistic	DF	Value	Prob
Chi-Square	5	935.1740	<.0001
Likelihood Ratio Chi-Square	5	938.6797	<.0001
Mantel-Haenszel Chi-Square	1	595.7098	<.0001
Phi Coefficient		0.1918	
Contingency Coefficient		0.1883	
Cramer's V		0.1918	

**Sample Size =
25432**

The SAS System

The TTEST Procedure

Variable: white

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.7503	0.4329	0.00275	0	1.0000
1		716	0.5573	0.4971	0.0186	0	1.0000
Diff (1-2)	Pooled		0.1930	0.4348	0.0165		
Diff (1-2)	Satterthwaite		0.1930		0.0188		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.7503	0.7449	0.7557	0.4329	0.4291	0.4367
1		0.5573	0.5208	0.5937	0.4971	0.4726	0.5242
Diff (1-2)	Pooled	0.1930	0.1607	0.2253	0.4348	0.4310	0.4386
Diff (1-2)	Satterthwaite	0.1930	0.1562	0.2299			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	11.71	<.0001
Satterthwaite	Unequal	746.75	10.28	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	1.32	<.0001

Distribution of white

Q-Q Plots of white
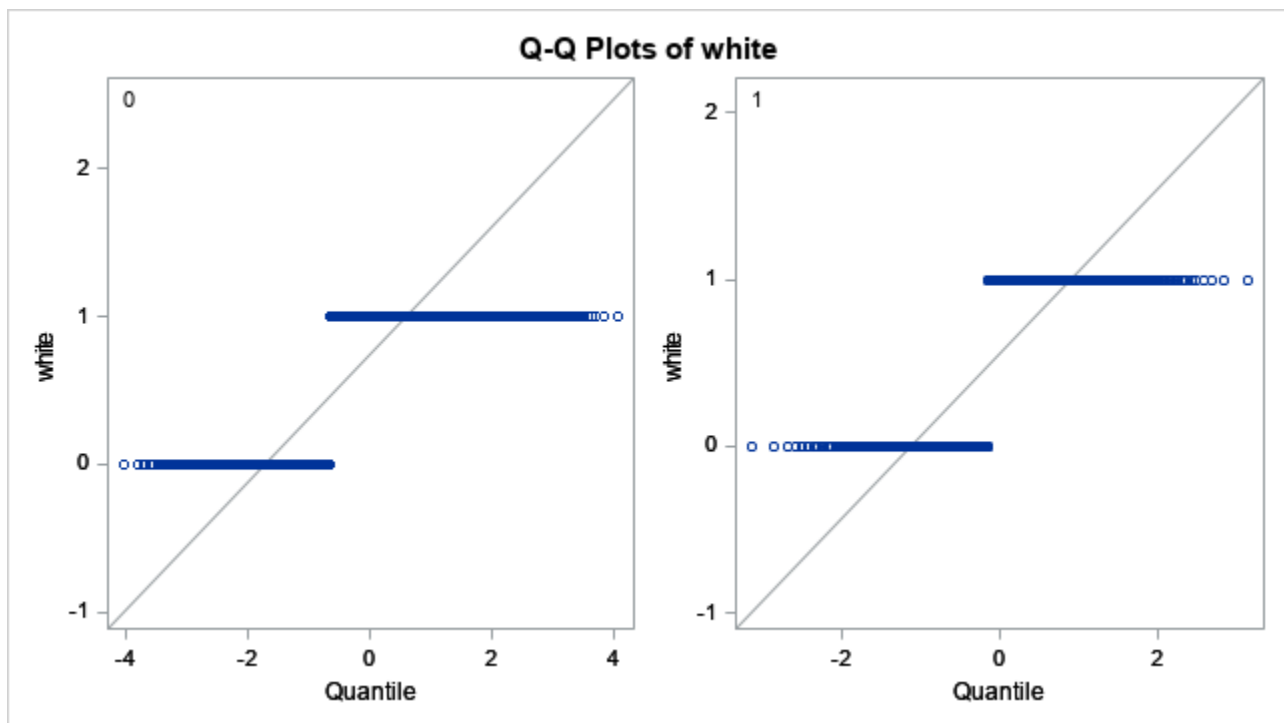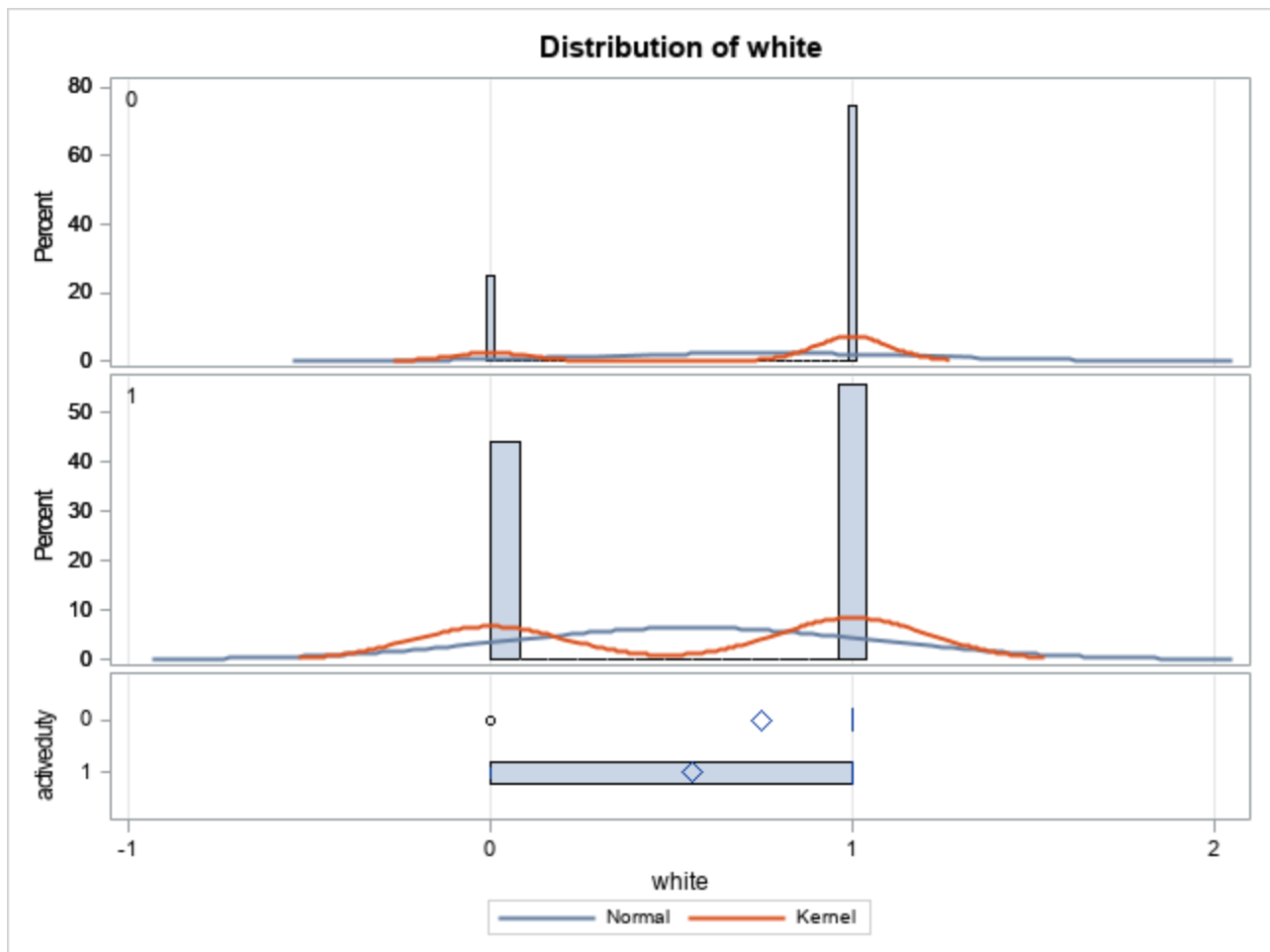
The SAS System

The TTEST Procedure

Variable: married

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.5388	0.4985	0.00317	0	1.0000
1		716	0.5154	0.5001	0.0187	0	1.0000
Diff (1-2)	Pooled		0.0234	0.4986	0.0189		
Diff (1-2)	Satterthwaite		0.0234		0.0190		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.5388	0.5325	0.5450	0.4985	0.4941	0.5029
1		0.5154	0.4787	0.5521	0.5001	0.4755	0.5275
Diff (1-2)	Pooled	0.0234	-0.0136	0.0604	0.4986	0.4943	0.5029
Diff (1-2)	Satterthwaite	0.0234	-0.0138	0.0606			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	1.24	0.2157
Satterthwaite	Unequal	756.73	1.23	0.2175

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	1.01	0.8910

Distribution of married

Q-Q Plots of married

The SAS System
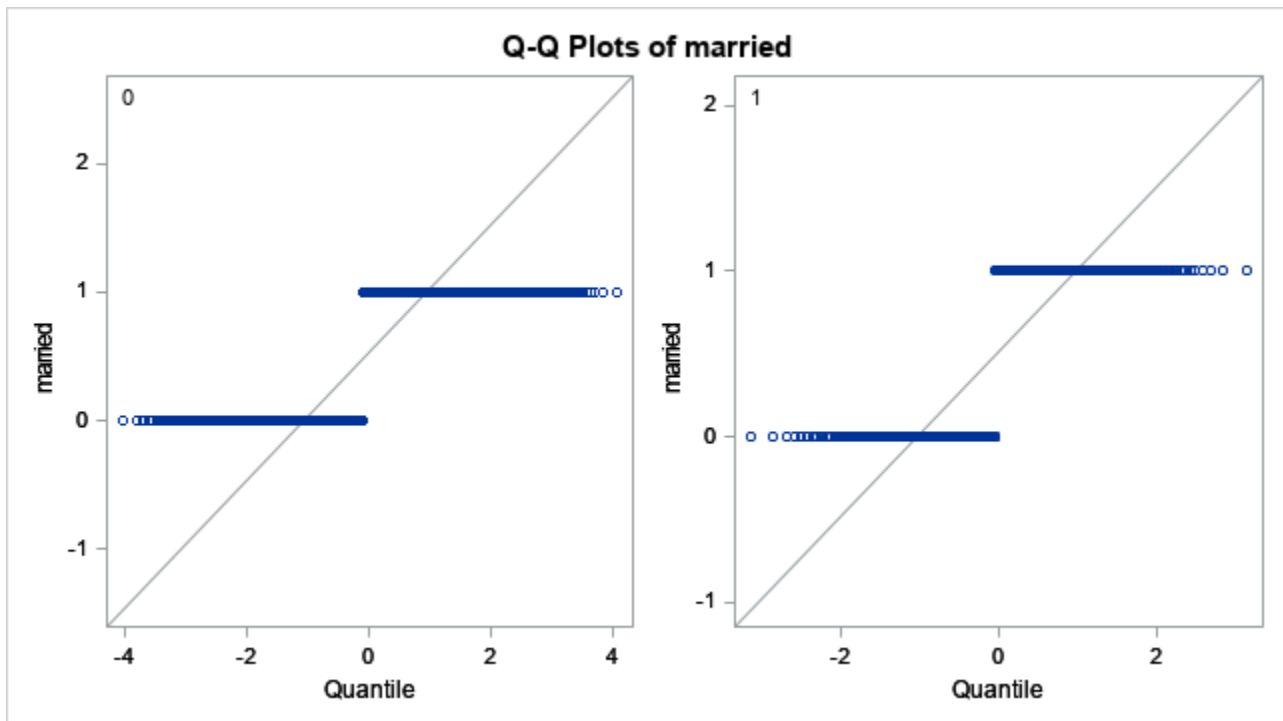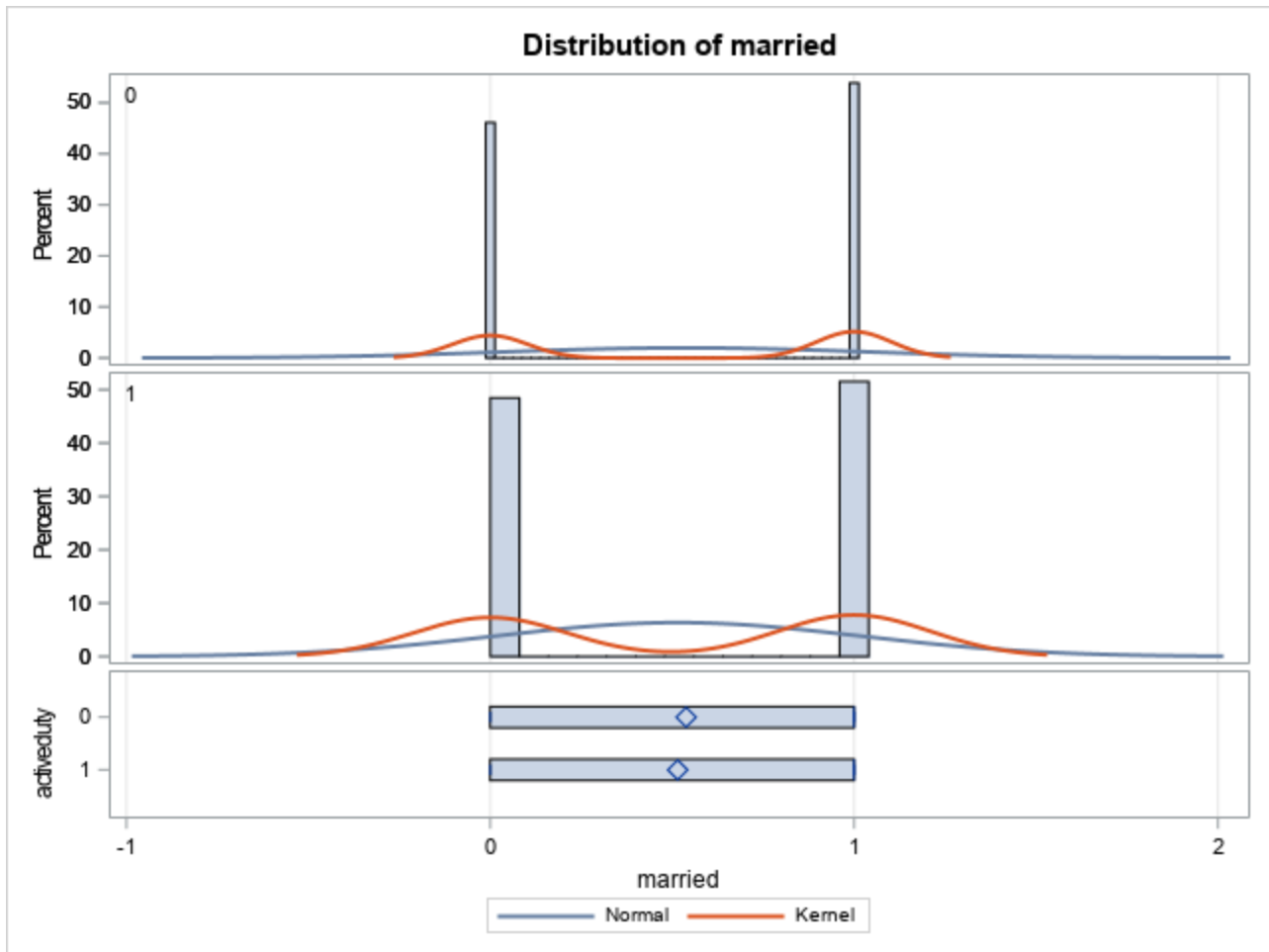
The FREQ Procedure

Table of military by education

Frequency / Percent / Row Pct / Col Pct	military	education							
		1	2	3	4	5	6	7	Total
	1	11	99	37	313	51	112	93	716
		0.04	0.39	0.15	1.23	0.20	0.44	0.37	2.82
		1.54	13.83	5.17	43.72	7.12	15.64	12.99	
		1.82	2.22	2.14	4.57	1.89	1.98	2.71	
	2	23	367	169	788	403	683	476	2909
		0.09	1.44	0.66	3.10	1.58	2.69	1.87	11.44
		0.79	12.62	5.81	27.09	13.85	23.48	16.36	
		3.81	8.23	9.78	11.51	14.91	12.07	13.87	
	3	550	3916	1488	5656	2218	4793	2836	21457
		2.16	15.40	5.85	22.24	8.72	18.85	11.15	84.37
		2.56	18.25	6.93	26.36	10.34	22.34	13.22	
		91.21	87.84	86.11	82.58	82.09	84.70	82.61	
	99	19	76	34	92	30	71	28	350
		0.07	0.30	0.13	0.36	0.12	0.28	0.11	1.38
		5.43	21.71	9.71	26.29	8.57	20.29	8.00	
		3.15	1.70	1.97	1.34	1.11	1.25	0.82	
	Total	603	4458	1728	6849	2702	5659	3433	25432
		2.37	17.53	6.79	26.93	10.62	22.25	13.50	100.00

Statistics for Table of military by education

Statistic	DF	Value	Prob
Chi-Square	18	278.4409	<.0001
Likelihood Ratio Chi-Square	18	278.7135	<.0001
Mantel-Haenszel Chi-Square	1	24.2791	<.0001
Phi Coefficient		0.1046	
Contingency Coefficient		0.1041	
Cramer's V		0.0604	

Sample Size = 25432

The SAS System

The TTEST Procedure

Variable: workfinedyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.0739	0.2616	0.00166	0	1.0000
1		716	0.3966	0.4895	0.0183	0	1.0000
Diff (1-2)	Pooled		-0.3227	0.2707	0.0103		
Diff (1-2)	Satterthwaite		-0.3227		0.0184		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.0739	0.0707	0.0772	0.2616	0.2594	0.2640
1		0.3966	0.3607	0.4326	0.4895	0.4654	0.5163
Diff (1-2)	Pooled	-0.3227	-0.3428	-0.3026	0.2707	0.2684	0.2731
Diff (1-2)	Satterthwaite	-0.3227	-0.3588	-0.2867			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-31.45	<.0001
Satterthwaite	Unequal	726.88	-17.57	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	3.50	<.0001

Distribution of workfinedyes

Q-Q Plots of workfinedyes
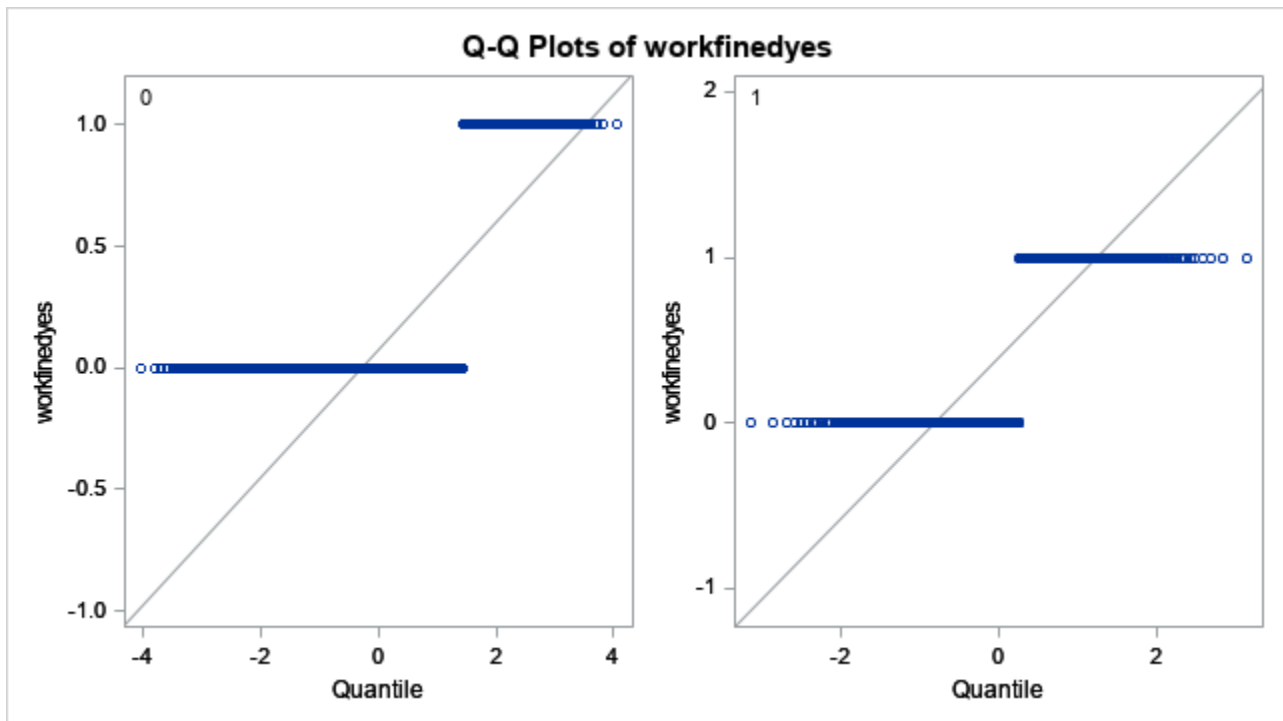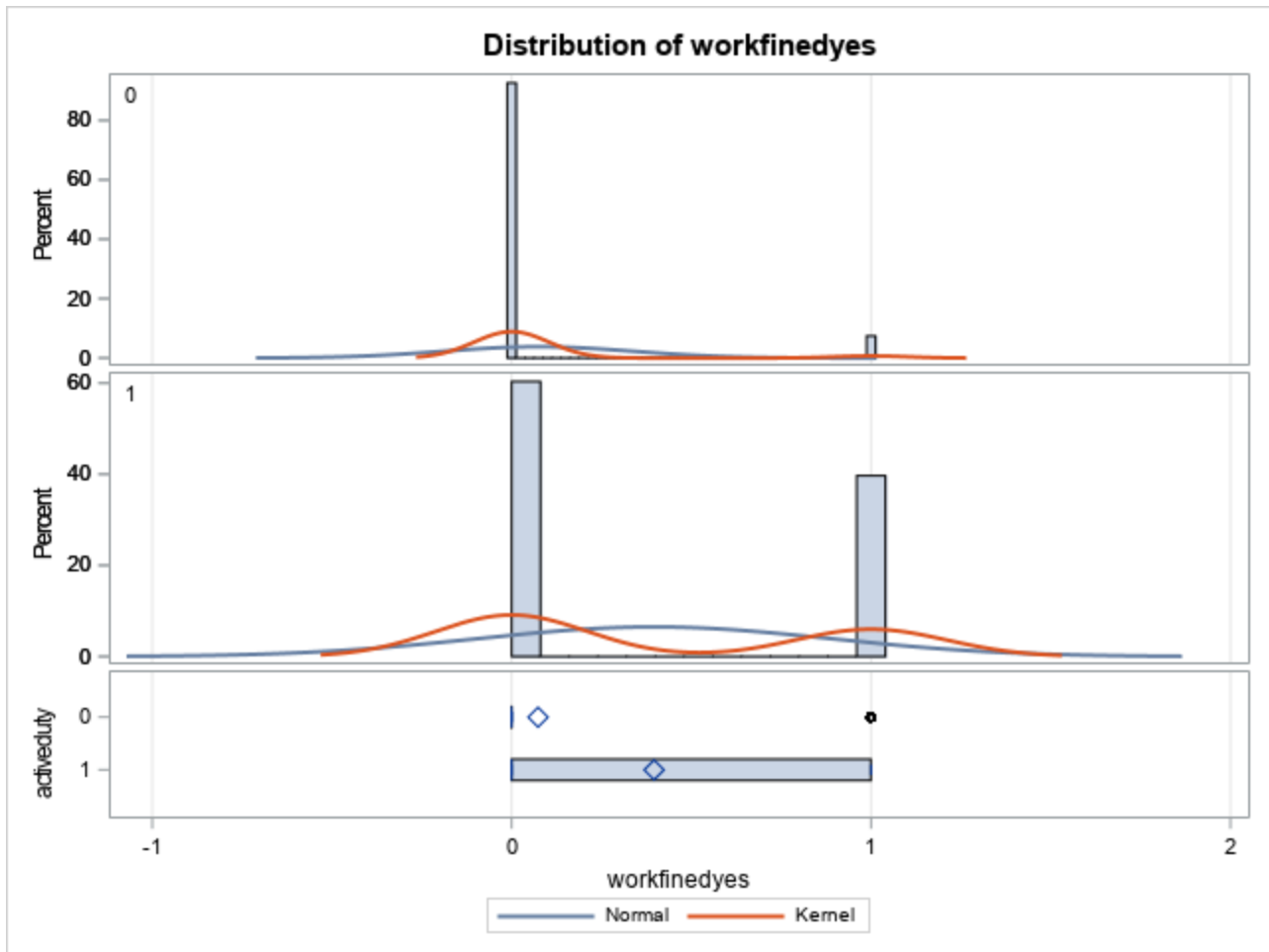
The SAS System

The TTEST Procedure

Variable: subfinknow

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	5.1196	1.3299	0.00846	1.0000	7.0000
1		716	6.1243	1.4221	0.0531	1.0000	7.0000
Diff (1-2)	Pooled		-1.0047	1.3326	0.0505		
Diff (1-2)	Satterthwaite		-1.0047		0.0538		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		5.1196	5.1030	5.1361	1.3299	1.3183	1.3417
1		6.1243	6.0200	6.2286	1.4221	1.3520	1.4998
Diff (1-2)	Pooled	-1.0047	-1.1038	-0.9057	1.3326	1.3211	1.3443
Diff (1-2)	Satterthwaite	-1.0047	-1.1104	-0.8991			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-19.89	<.0001
Satterthwaite	Unequal	751.67	-18.67	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	1.14	0.0102

Distribution of subfinknow

Q-Q Plots of subfinknow
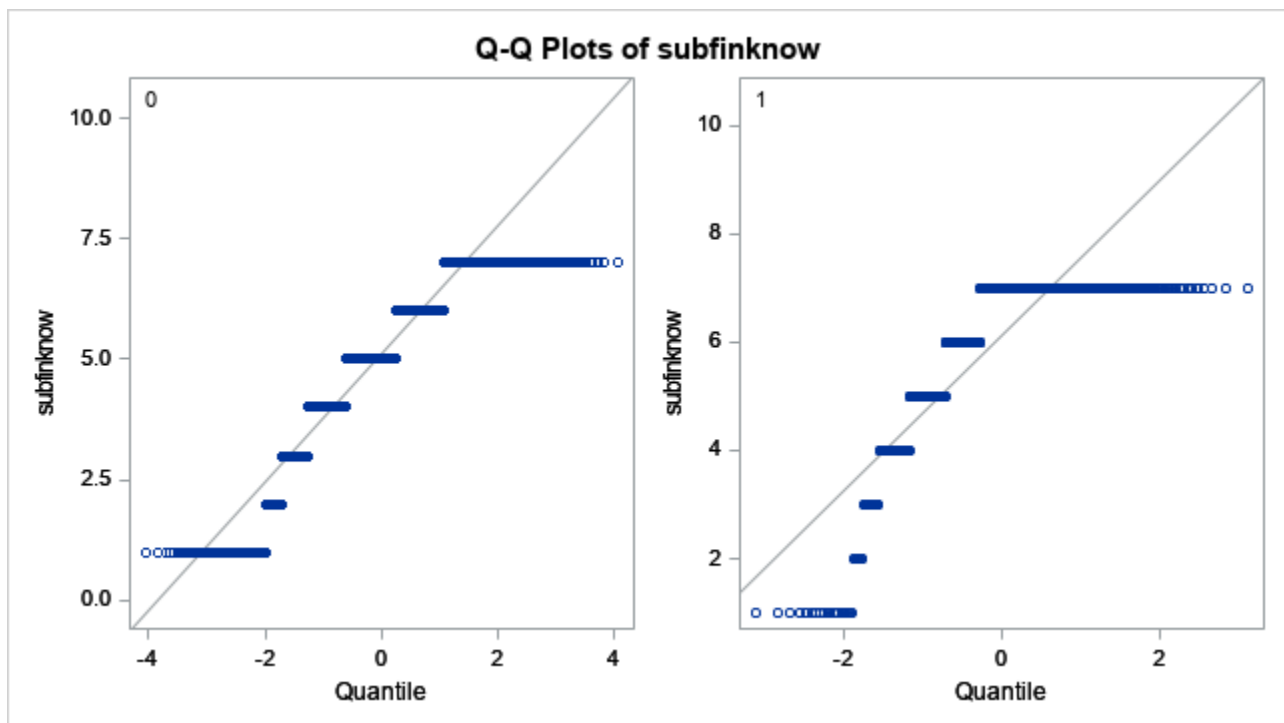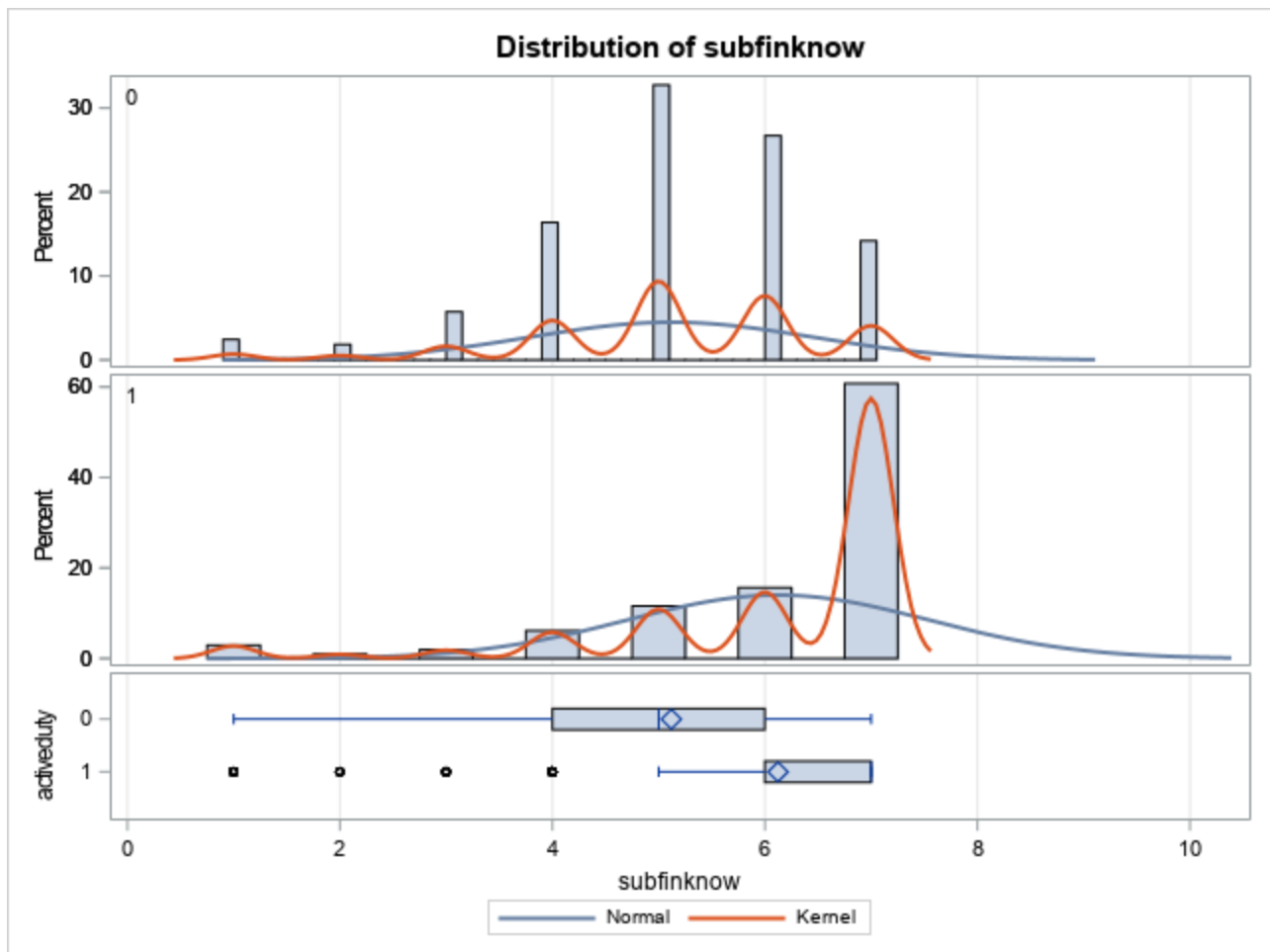
The SAS System

The TTEST Procedure

Variable: objfinknow

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	3.2236	1.6536	0.0105	0	6.0000
1		716	2.4050	1.2619	0.0472	0	6.0000
Diff (1-2)	Pooled		0.8186	1.6439	0.0623		
Diff (1-2)	Satterthwaite		0.8186		0.0483		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		3.2236	3.2030	3.2442	1.6536	1.6392	1.6684
1		2.4050	2.3124	2.4976	1.2619	1.1997	1.3309
Diff (1-2)	Pooled	0.8186	0.6964	0.9407	1.6439	1.6297	1.6583
Diff (1-2)	Satterthwaite	0.8186	0.7237	0.9134			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	13.13	<.0001
Satterthwaite	Unequal	787.85	16.94	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.72	<.0001

Distribution of objfinknow

Q-Q Plots of objfinknow
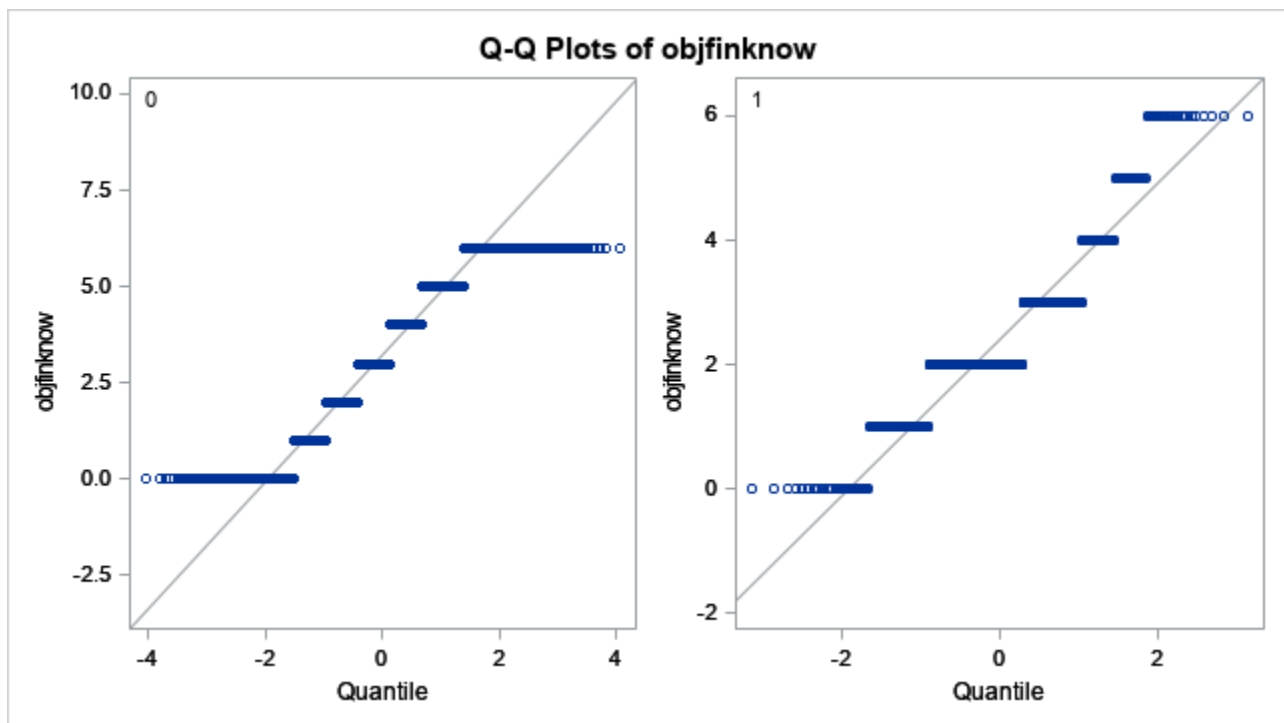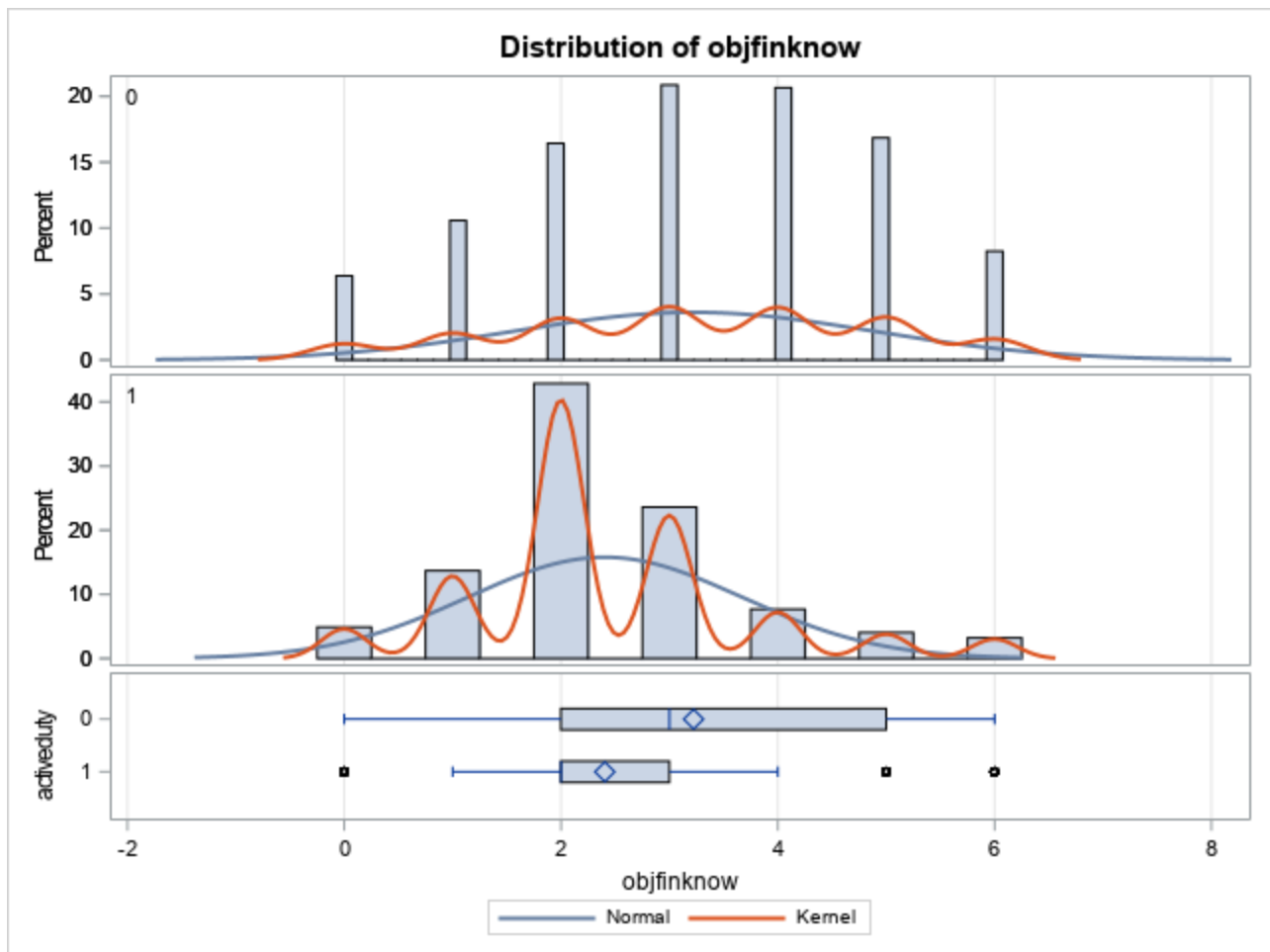
The SAS System

The TTEST Procedure

Variable: confidenceyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.7708	0.4203	0.00267	0	1.0000
1		716	0.9162	0.2773	0.0104	0	1.0000
Diff (1-2)	Pooled		-0.1454	0.4170	0.0158		
Diff (1-2)	Satterthwaite		-0.1454		0.0107		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.7708	0.7656	0.7761	0.4203	0.4166	0.4240
1		0.9162	0.8959	0.9365	0.2773	0.2636	0.2924
Diff (1-2)	Pooled	-0.1454	-0.1763	-0.1144	0.4170	0.4134	0.4206
Diff (1-2)	Satterthwaite	-0.1454	-0.1664	-0.1244			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-9.20	<.0001
Satterthwaite	Unequal	813.25	-13.58	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	2.30	<.0001

Distribution of confidenceyes

Q-Q Plots of confidenceyes
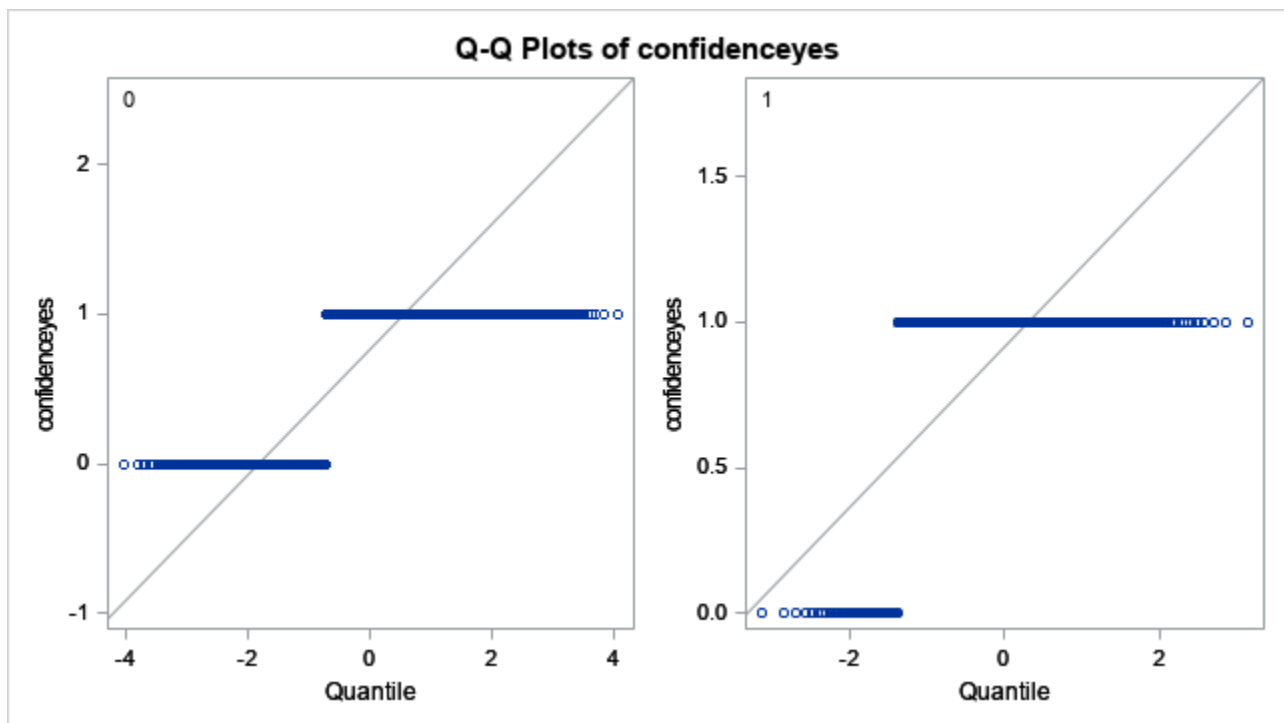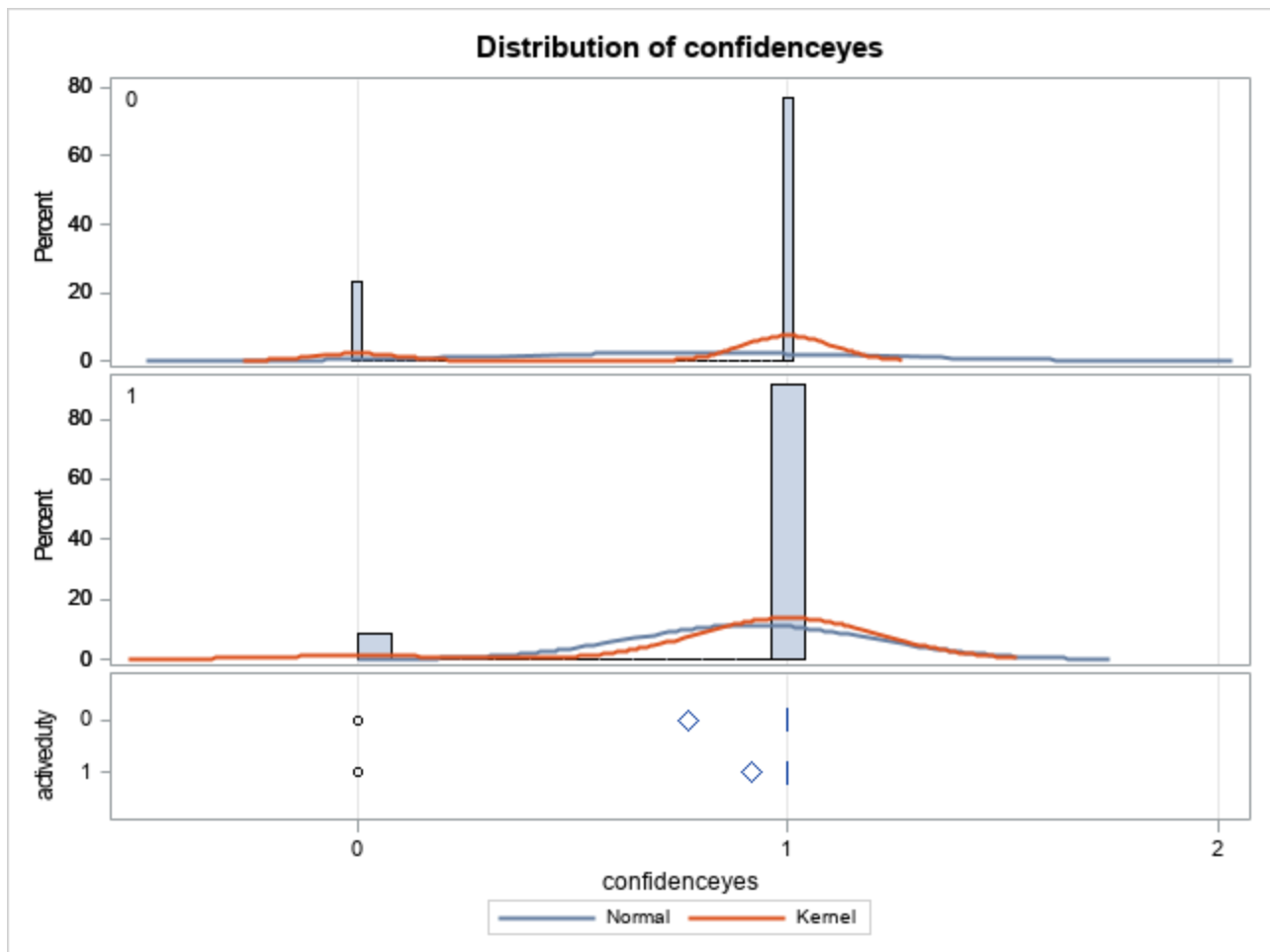
The SAS System

The TTEST Procedure

Variable: children

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.3464	0.4758	0.00303	0	1.0000
1		716	0.7514	0.4325	0.0162	0	1.0000
Diff (1-2)	Pooled		-0.4050	0.4747	0.0180		
Diff (1-2)	Satterthwaite		-0.4050		0.0164		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.3464	0.3404	0.3523	0.4758	0.4717	0.4801
1		0.7514	0.7197	0.7831	0.4325	0.4112	0.4562
Diff (1-2)	Pooled	-0.4050	-0.4403	-0.3698	0.4747	0.4706	0.4788
Diff (1-2)	Satterthwaite	-0.4050	-0.4373	-0.3727			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-22.51	<.0001
Satterthwaite	Unequal	765.99	-24.63	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.21	0.0006

Distribution of children

Q-Q Plots of children
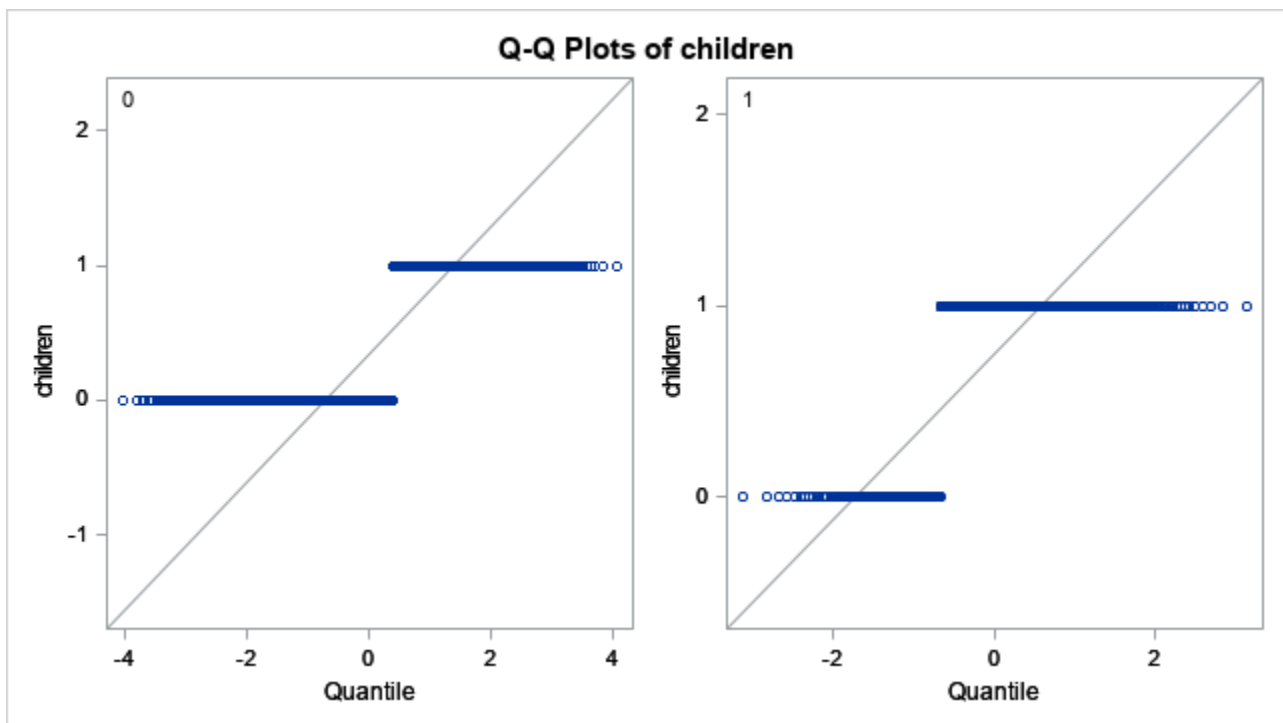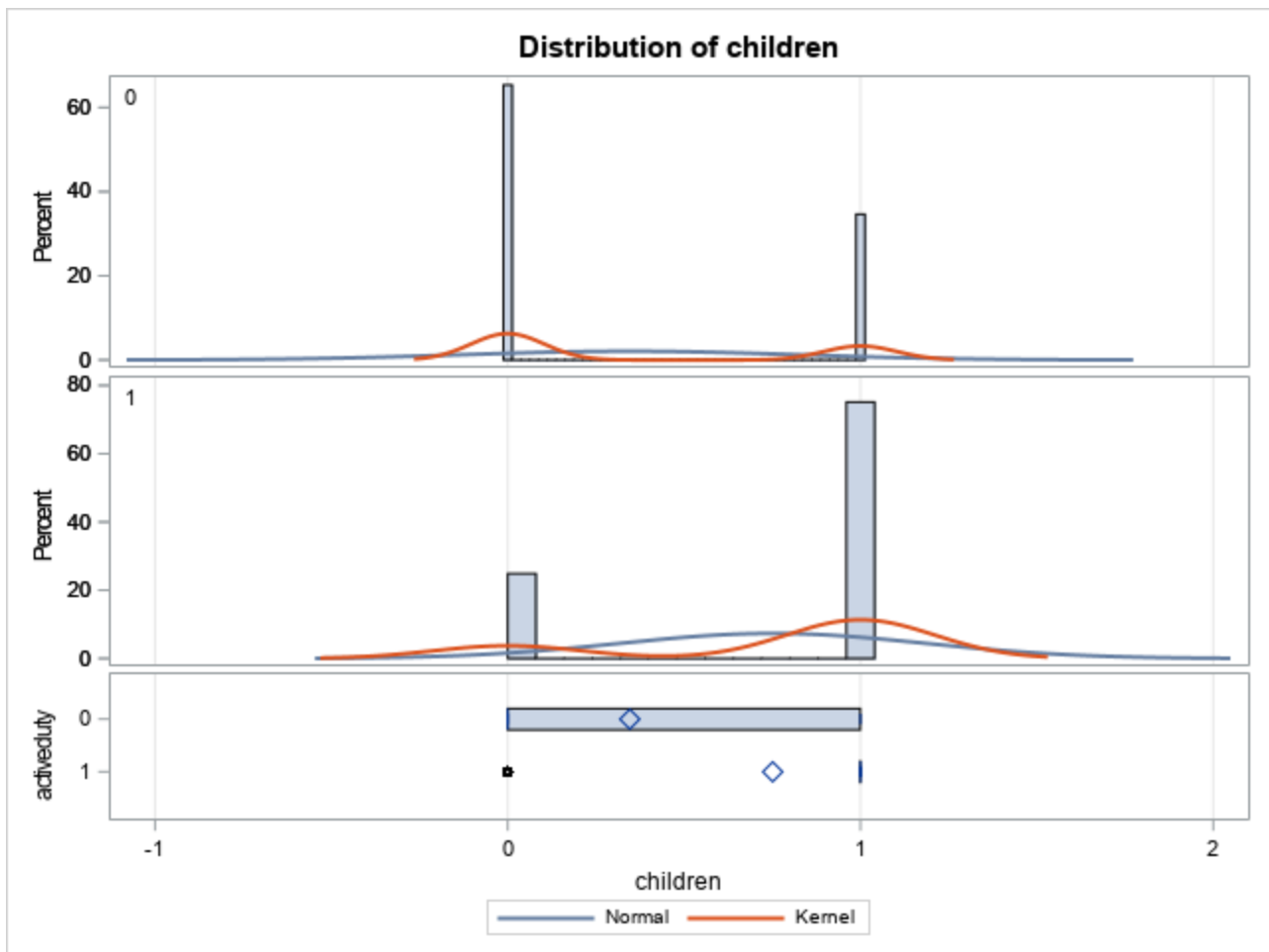
The SAS System

The FREQ Procedure

Table of military by income

Frequency / Percent / Row Pct / Col Pct	military	income								
		1	2	3	4	5	6	7	8	Total
	1	42	42	36	51	95	294	121	35	716
		0.17	0.17	0.14	0.20	0.37	1.16	0.48	0.14	2.82
		5.87	5.87	5.03	7.12	13.27	41.06	16.90	4.89	
		1.58	1.65	1.33	1.39	1.89	7.95	3.62	1.96	
	2	132	232	250	432	632	495	491	245	2909
		0.52	0.91	0.98	1.70	2.49	1.95	1.93	0.96	11.44
		4.54	7.98	8.59	14.85	21.73	17.02	16.88	8.42	
		4.98	9.09	9.24	11.74	12.59	13.38	14.71	13.73	
	3	2409	2238	2372	3142	4236	2875	2694	1491	21457
		9.47	8.80	9.33	12.35	16.66	11.30	10.59	5.86	84.37
		11.23	10.43	11.05	14.64	19.74	13.40	12.56	6.95	
		90.87	87.66	87.69	85.36	84.42	77.70	80.68	83.53	
	99	68	41	47	56	55	36	33	14	350
		0.27	0.16	0.18	0.22	0.22	0.14	0.13	0.06	1.38
		19.43	11.71	13.43	16.00	15.71	10.29	9.43	4.00	
		2.57	1.61	1.74	1.52	1.10	0.97	0.99	0.78	
	Total	2651	2553	2705	3681	5018	3700	3339	1785	25432
		10.42	10.04	10.64	14.47	19.73	14.55	13.13	7.02	100.00

Statistics for Table of military by income

Statistic	DF	Value	Prob
Chi-Square	21	718.4540	<.0001
Likelihood Ratio Chi-Square	21	641.5006	<.0001
Mantel-Haenszel Chi-Square	1	48.5060	<.0001
Phi Coefficient		0.1681	
Contingency Coefficient		0.1658	
Cramer's V		0.0970	

Sample Size = 25432

The SAS System

The FREQ Procedure

Table of military by guardianed

Legend (per cell):
- Frequency
- Percent
- Row Pct
- Col Pct

military	statistic	guardianed 1	2	3	4	5	6	98	99	Total
1	Frequency	17	137	298	40	130	93	0	1	716
	Percent	0.07	0.54	1.17	0.16	0.51	0.37	0.00	0.00	2.82
	Row Pct	2.37	19.13	41.62	5.59	18.16	12.99	0.00	0.14	
	Col Pct	0.87	1.68	6.26	1.83	2.61	3.16	0.00	1.64	
2	Frequency	284	940	477	275	536	336	54	7	2909
	Percent	1.12	3.70	1.88	1.08	2.11	1.32	0.21	0.03	11.44
	Row Pct	9.76	32.31	16.40	9.45	18.43	11.55	1.86	0.24	
	Col Pct	14.49	11.52	10.02	12.57	10.76	11.40	14.56	11.48	
3	Frequency	1636	6972	3926	1832	4246	2481	312	52	21457
	Percent	6.43	27.41	15.44	7.20	16.70	9.76	1.23	0.20	84.37
	Row Pct	7.62	32.49	18.30	8.54	19.79	11.56	1.45	0.24	
	Col Pct	83.47	85.41	82.48	83.73	85.23	84.19	84.10	85.25	
99	Frequency	23	114	59	41	70	37	5	1	350
	Percent	0.09	0.45	0.23	0.16	0.28	0.15	0.02	0.00	1.38
	Row Pct	6.57	32.57	16.86	11.71	20.00	10.57	1.43	0.29	
	Col Pct	1.17	1.40	1.24	1.87	1.41	1.26	1.35	1.64	
Total	Frequency	1960	8163	4760	2188	4982	2947	371	61	25432

		7.71	32.10	18.72	8.60	19.59	11.59	1.46	0.24	100.00

Statistics for Table of military by guardianed

Statistic	DF	Value	Prob
Chi-Square	21	326.2091	<.0001
Likelihood Ratio Chi-Square	21	300.2296	<.0001
Mantel-Haenszel Chi-Square	1	0.0108	0.9172
Phi Coefficient		0.1133	
Contingency Coefficient		0.1125	
Cramer's V		0.0654	

Sample Size = 25432

The SAS System

The TTEST Procedure

Variable: overspend

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.1827	0.3864	0.00246	0	1.0000
1		716	0.3799	0.4857	0.0182	0	1.0000
Diff (1-2)	Pooled		-0.1972	0.3895	0.0148		
Diff (1-2)	Satterthwaite		-0.1972		0.0183		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.1827	0.1779	0.1875	0.3864	0.3830	0.3898
1		0.3799	0.3443	0.4155	0.4857	0.4618	0.5123
Diff (1-2)	Pooled	-0.1972	-0.2262	-0.1683	0.3895	0.3862	0.3930
Diff (1-2)	Satterthwaite	-0.1972	-0.2332	-0.1613			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-13.35	<.0001
Satterthwaite	Unequal	741.45	-10.77	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	1.58	<.0001

Distribution of overspend

Q-Q Plots of overspend
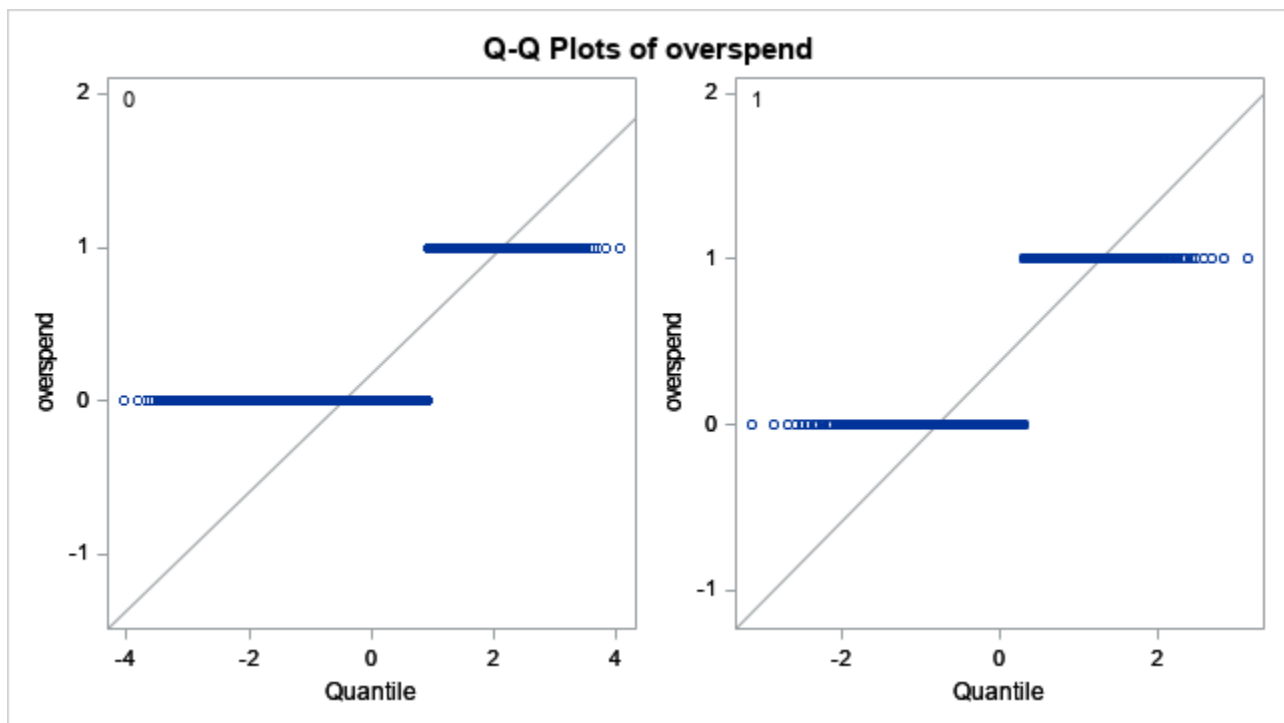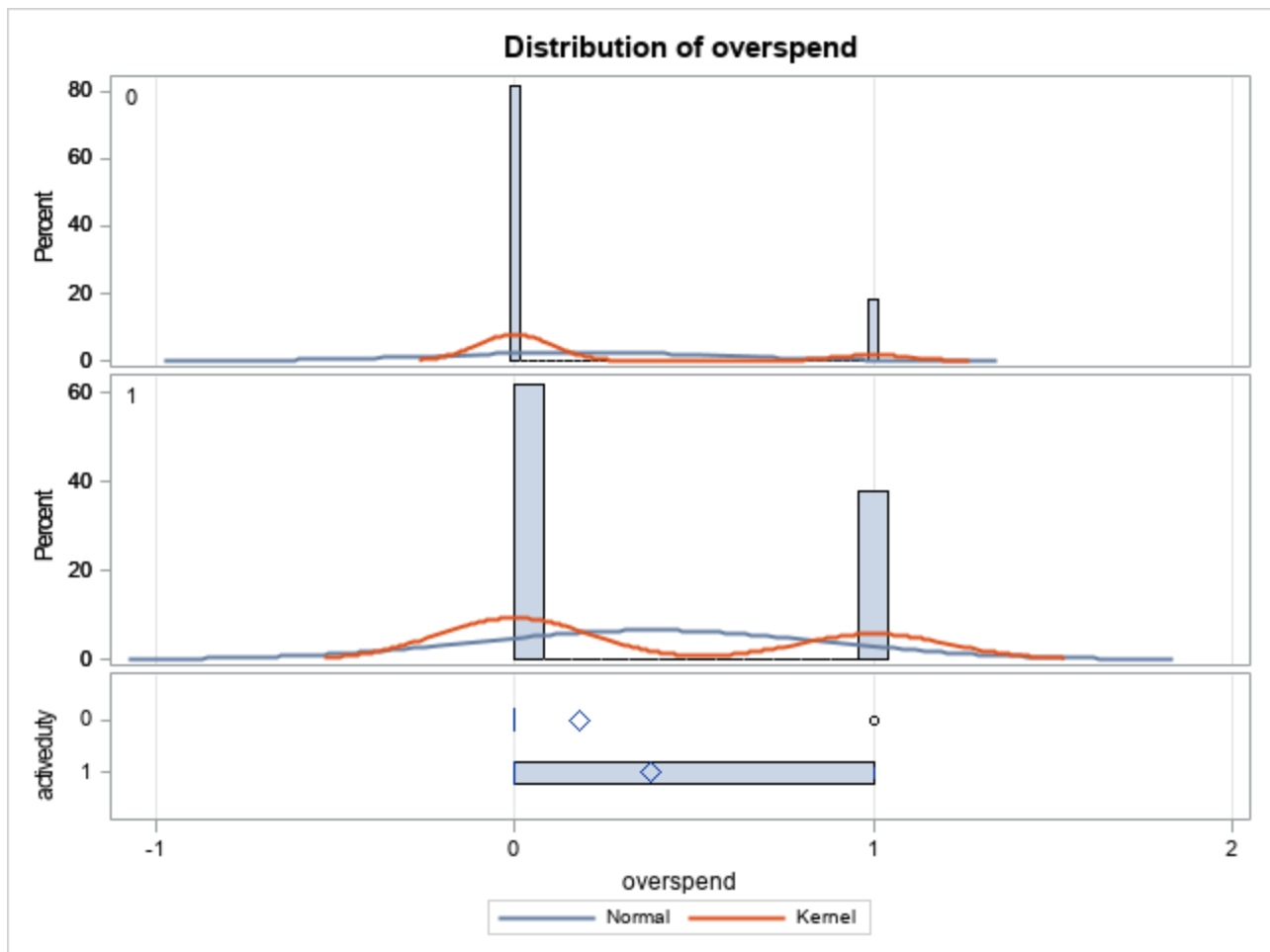
The SAS System

The TTEST Procedure

Variable: ccbeh

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	3.5325	2.2904	0.0146	0	6.0000
1		716	2.4930	1.7601	0.0658	0	6.0000
Diff (1-2)	Pooled		1.0395	2.2771	0.0863		
Diff (1-2)	Satterthwaite		1.0395		0.0674		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		3.5325	3.5039	3.5610	2.2904	2.2703	2.3107
1		2.4930	2.3639	2.6222	1.7601	1.6734	1.8563
Diff (1-2)	Pooled	1.0395	0.8703	1.2087	2.2771	2.2575	2.2971
Diff (1-2)	Satterthwaite	1.0395	0.9072	1.1717			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	12.04	<.0001
Satterthwaite	Unequal	786.81	15.43	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.69	<.0001

Distribution of ccbeh

Q-Q Plots of ccbeh
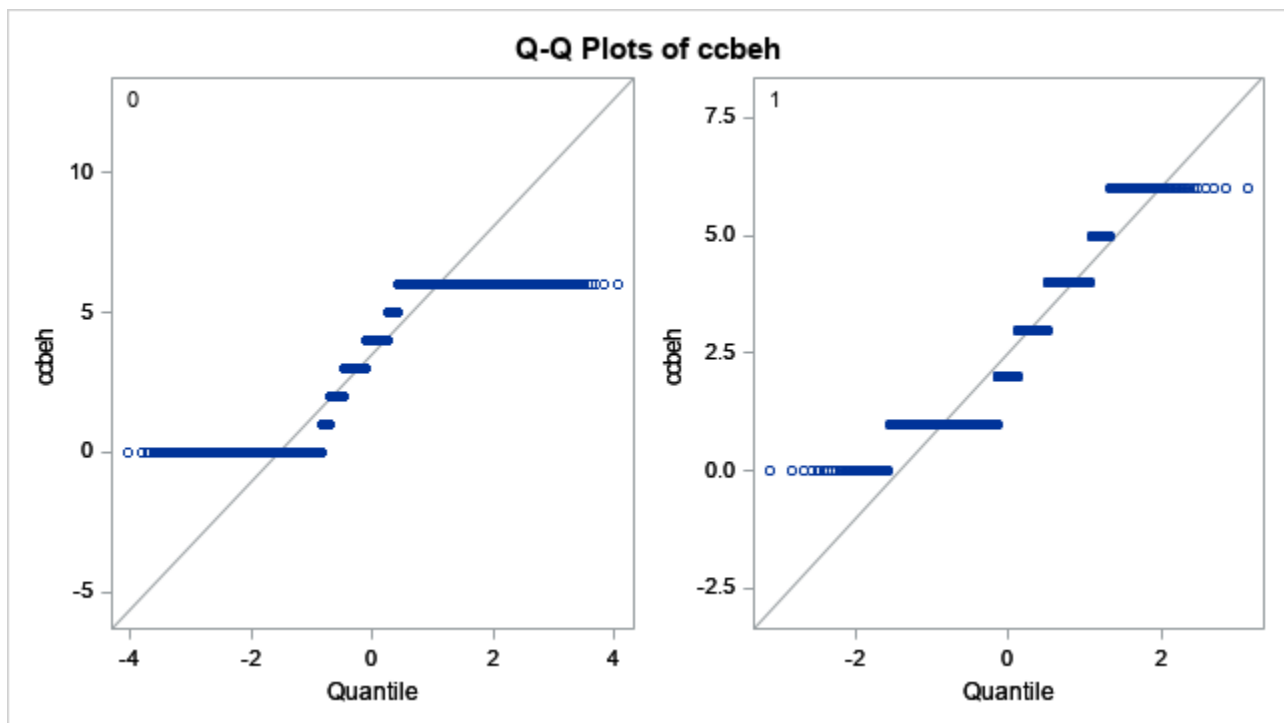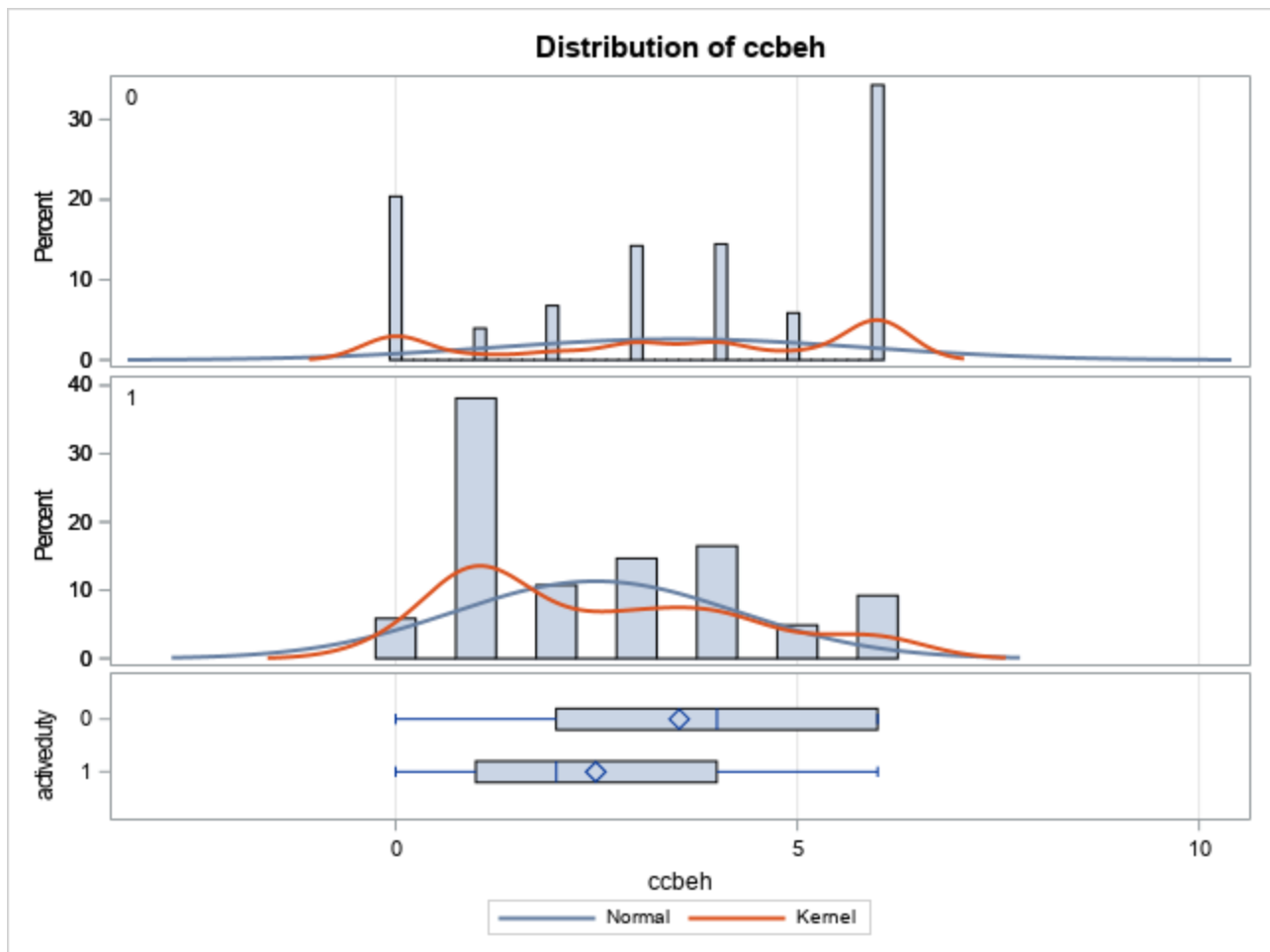
The SAS System

The TTEST Procedure

Variable: mortgagelateno

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.2960	0.4565	0.00290	0	1.0000
1		716	0.1494	0.3568	0.0133	0	1.0000
Diff (1-2)	Pooled		0.1465	0.4540	0.0172		
Diff (1-2)	Satterthwaite		0.1465		0.0136		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.2960	0.2903	0.3017	0.4565	0.4525	0.4605
1		0.1494	0.1233	0.1756	0.3568	0.3392	0.3763
Diff (1-2)	Pooled	0.1465	0.1128	0.1803	0.4540	0.4501	0.4580
Diff (1-2)	Satterthwaite	0.1465	0.1197	0.1733			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	8.51	<.0001
Satterthwaite	Unequal	784.37	10.74	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.64	<.0001

Distribution of mortgagelateno

Q-Q Plots of mortgagelateno
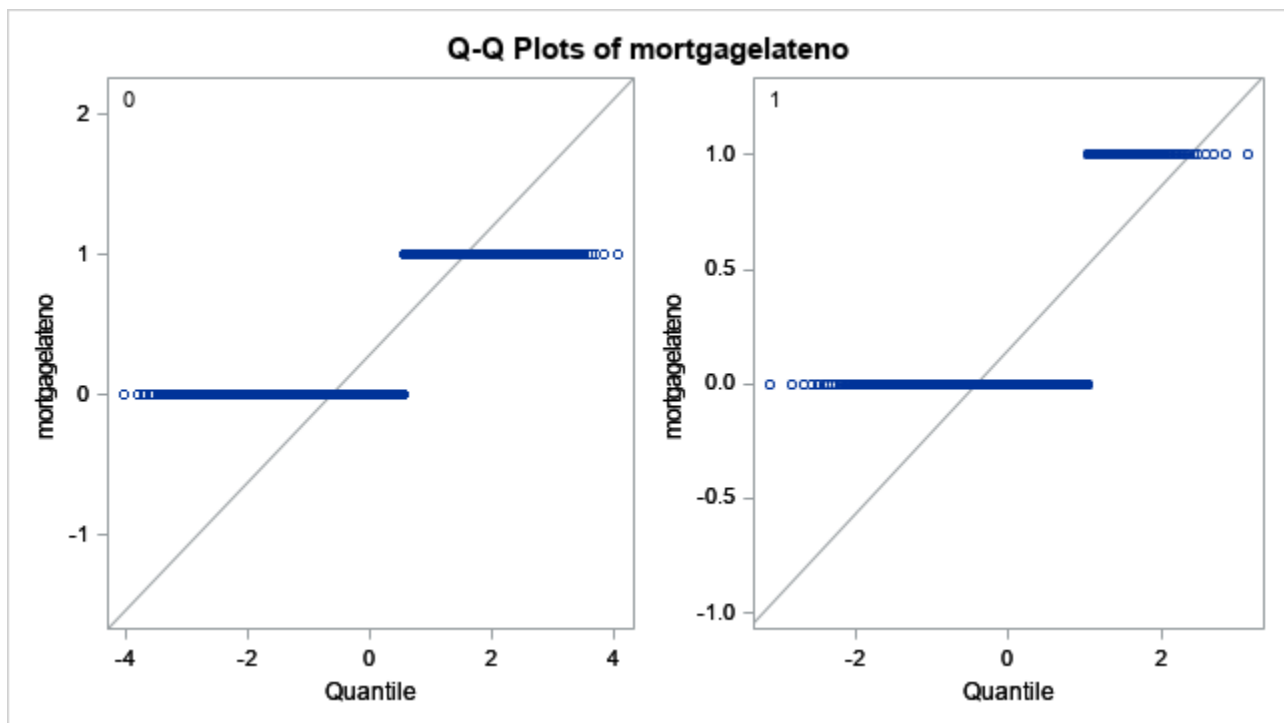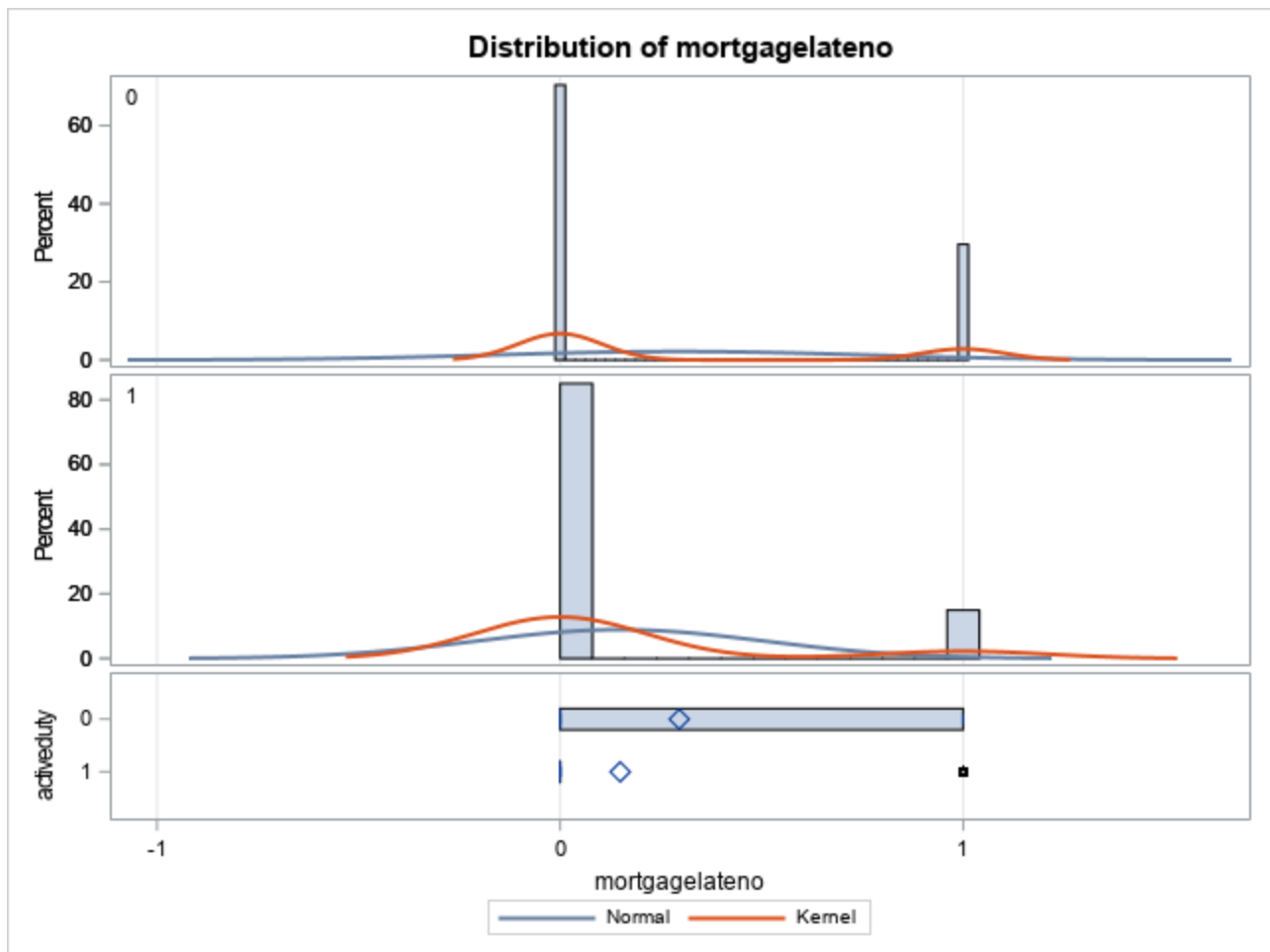
The SAS System

The TTEST Procedure

Variable: kidcollegeyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.1253	0.3311	0.00211	0	1.0000
1		716	0.6243	0.4846	0.0181	0	1.0000
Diff (1-2)	Pooled		-0.4990	0.3363	0.0128		
Diff (1-2)	Satterthwaite		-0.4990		0.0182		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.1253	0.1212	0.1294	0.3311	0.3282	0.3340
1		0.6243	0.5887	0.6599	0.4846	0.4608	0.5111
Diff (1-2)	Pooled	-0.4990	-0.5240	-0.4740	0.3363	0.3334	0.3393
Diff (1-2)	Satterthwaite	-0.4990	-0.5348	-0.4632			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-39.14	<.0001
Satterthwaite	Unequal	734.46	-27.37	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	2.14	<.0001

Distribution of kidcollegeyes

Q-Q Plots of kidcollegeyes
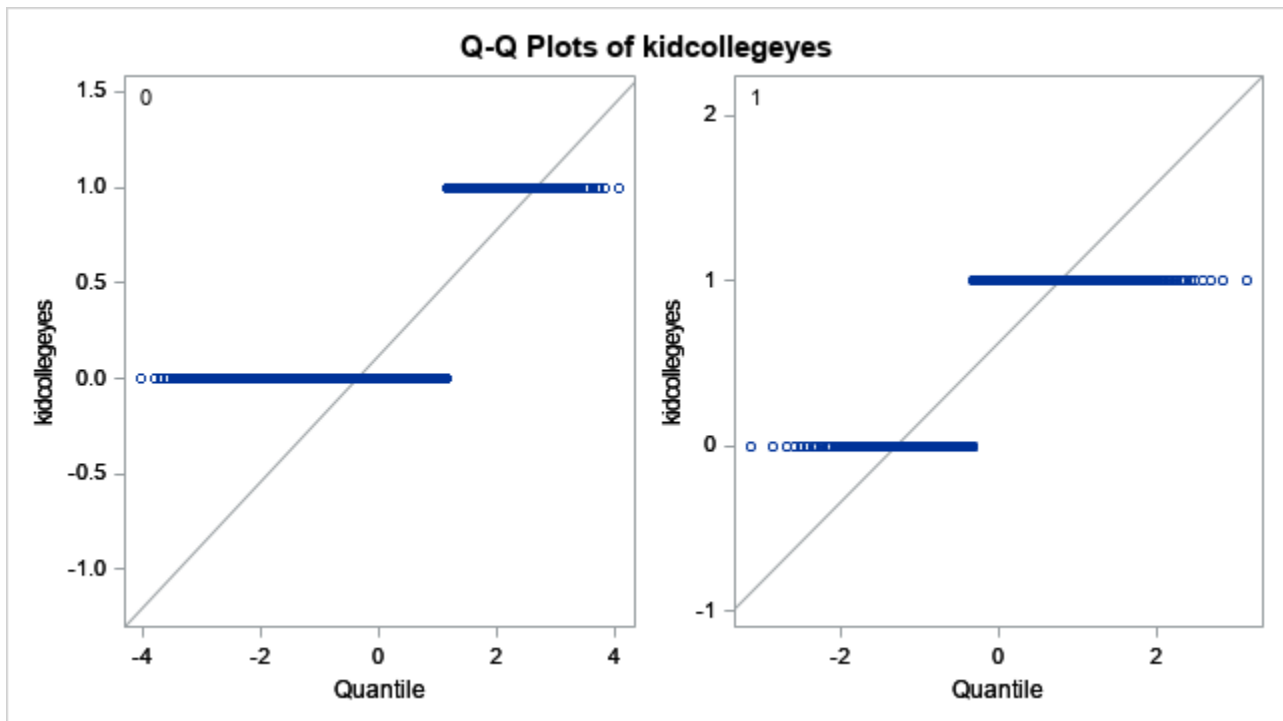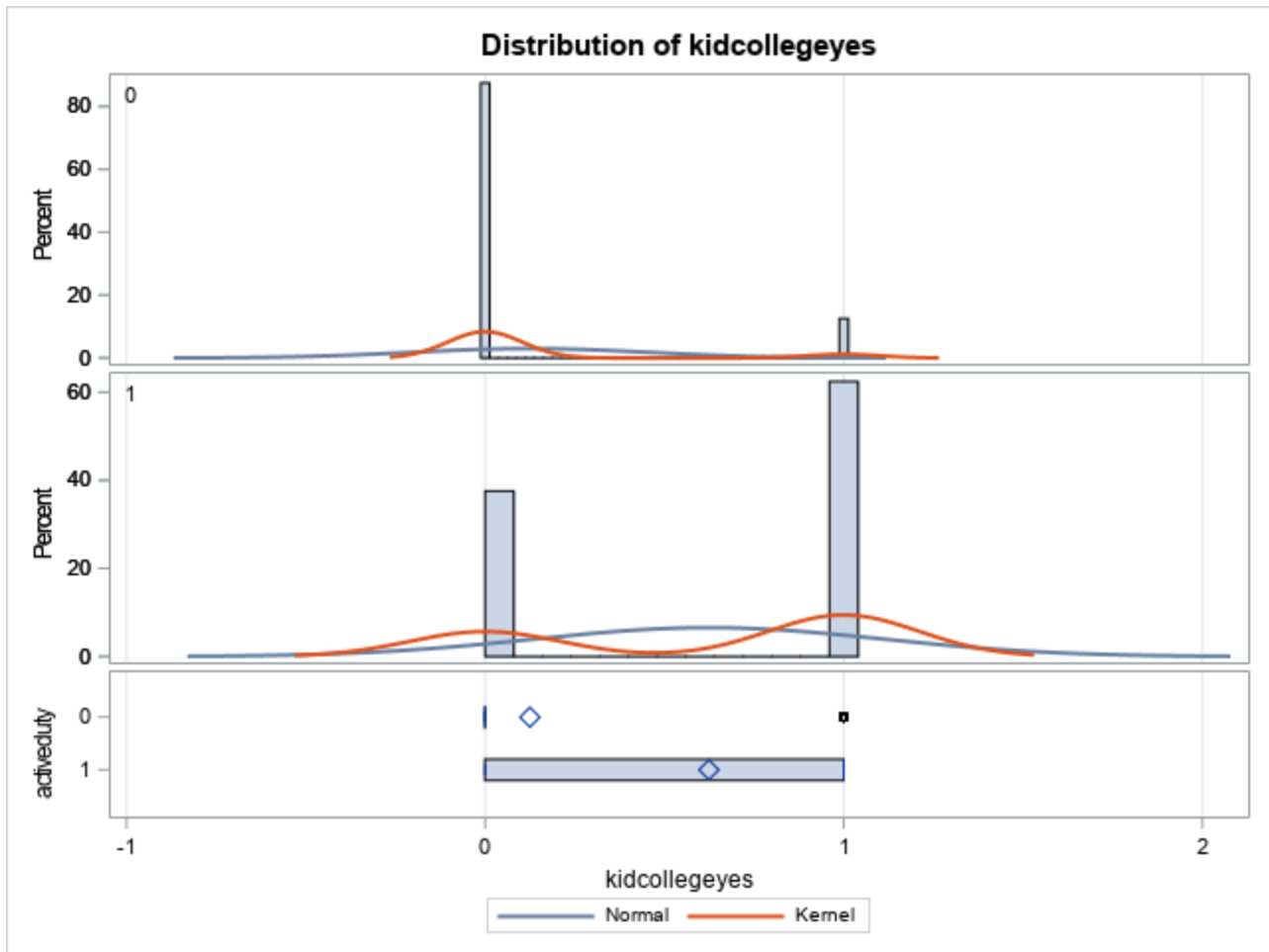
The SAS System

The TTEST Procedure

Variable: studentloansyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.2503	0.4332	0.00276	0	1.0000
1		716	0.7095	0.4543	0.0170	0	1.0000
Diff (1-2)	Pooled		-0.4592	0.4338	0.0164		
Diff (1-2)	Satterthwaite		-0.4592		0.0172		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.2503	0.2449	0.2557	0.4332	0.4294	0.4371
1		0.7095	0.6762	0.7428	0.4543	0.4319	0.4791
Diff (1-2)	Pooled	-0.4592	-0.4914	-0.4269	0.4338	0.4301	0.4376
Diff (1-2)	Satterthwaite	-0.4592	-0.4929	-0.4254			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-27.92	<.0001
Satterthwaite	Unequal	753.15	-26.70	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	715	24715	1.10	0.0692

Distribution of studentloansyes

Q-Q Plots of studentloansyes
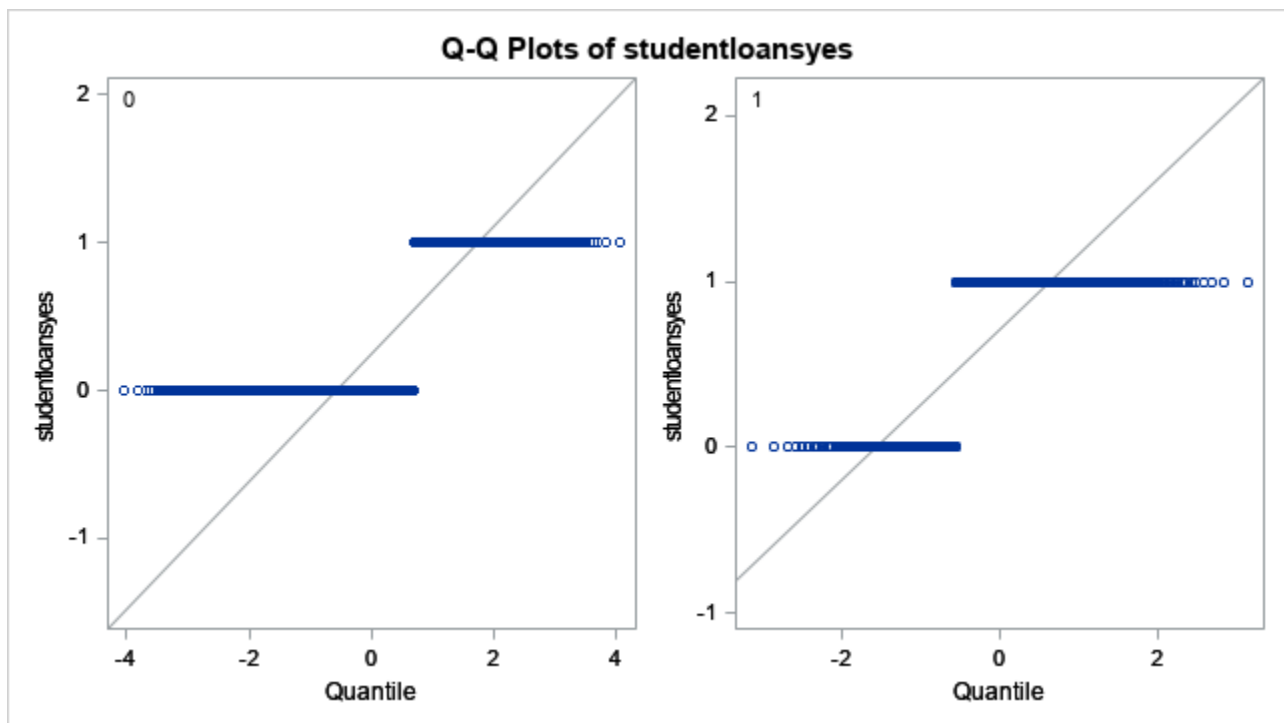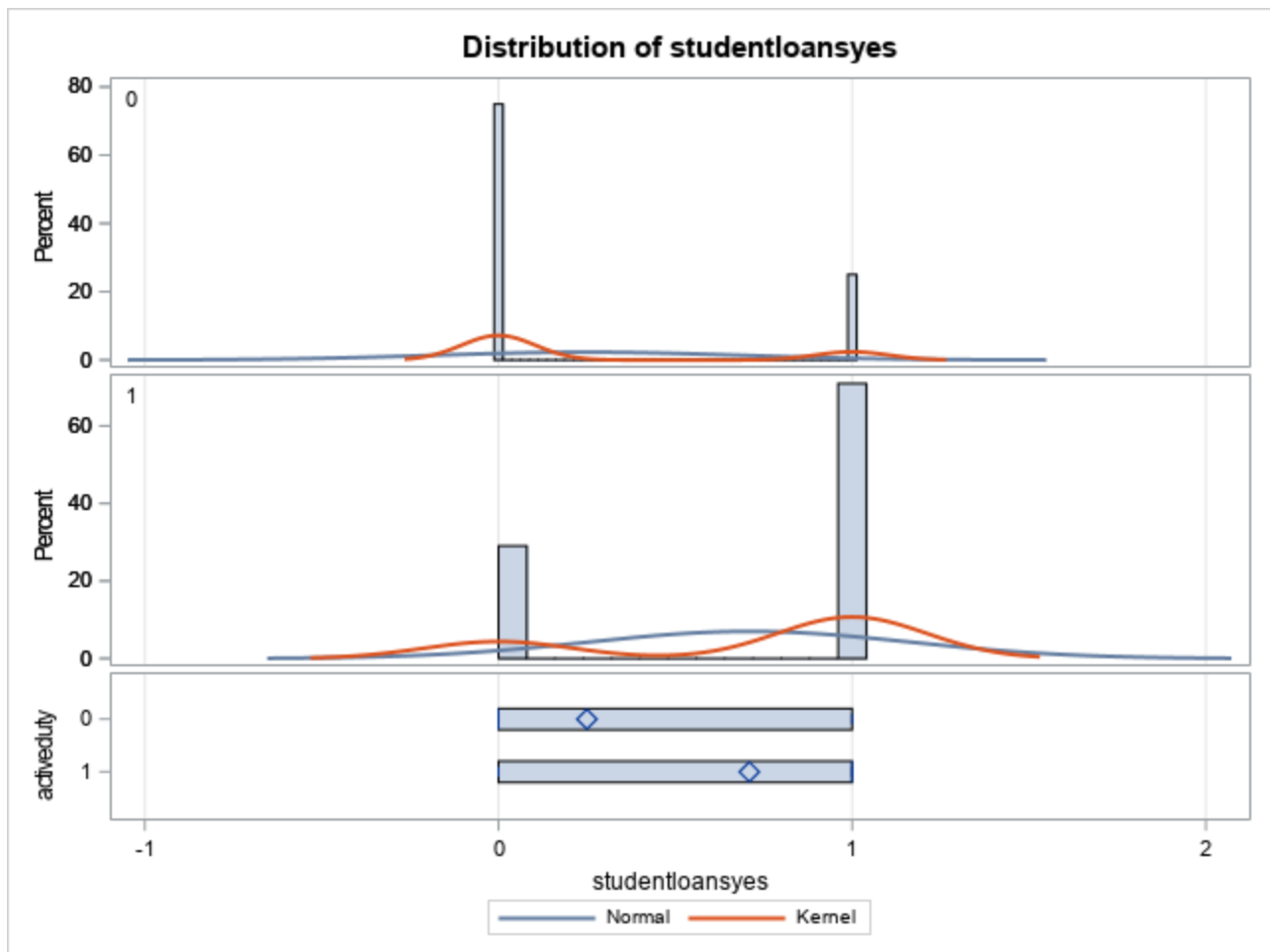
The SAS System

The TTEST Procedure

Variable: emergencyyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.5022	0.5000	0.00318	0	1.0000
1		716	0.8017	0.3990	0.0149	0	1.0000
Diff (1-2)	Pooled		-0.2995	0.4974	0.0189		
Diff (1-2)	Satterthwaite		-0.2995		0.0152		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.5022	0.4960	0.5084	0.5000	0.4956	0.5045
1		0.8017	0.7724	0.8310	0.3990	0.3794	0.4208
Diff (1-2)	Pooled	-0.2995	-0.3365	-0.2625	0.4974	0.4932	0.5018
Diff (1-2)	Satterthwaite	-0.2995	-0.3294	-0.2696			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-15.88	<.0001
Satterthwaite	Unequal	781.48	-19.64	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.57	<.0001

Distribution of emergencyyes

Q-Q Plots of emergencyyes
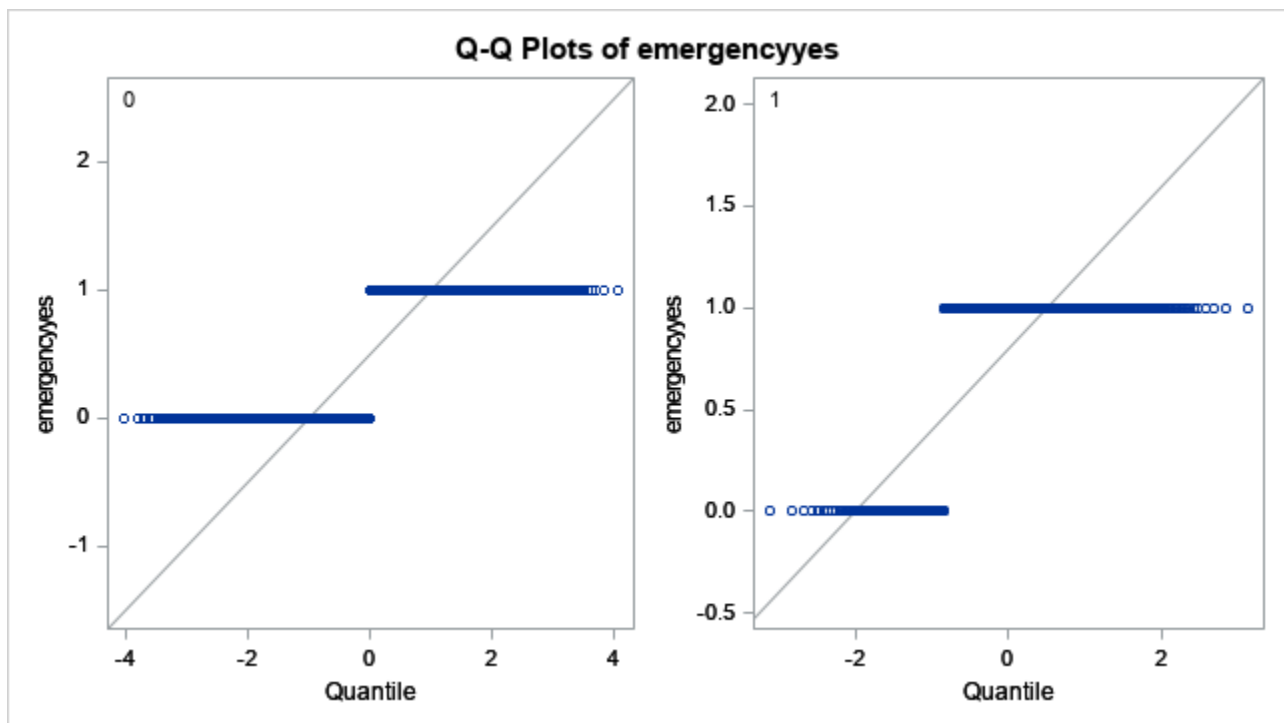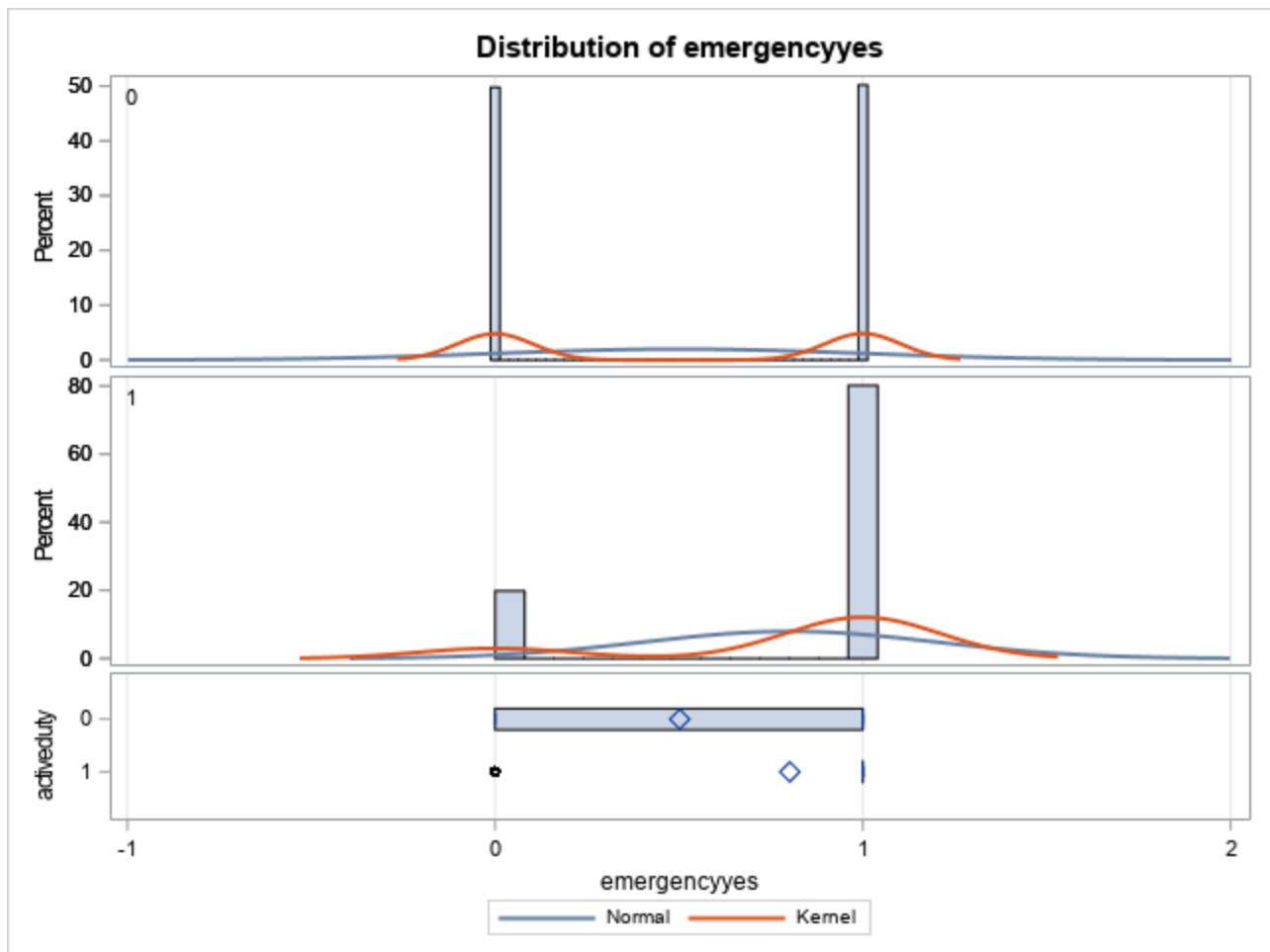
The SAS System

The TTEST Procedure

Variable: retirecalcyes

activeduty	Method	N	Mean	Std Dev	Std Err	Minimum	Maximum
0		24716	0.3212	0.4670	0.00297	0	1.0000
1		716	0.7877	0.4092	0.0153	0	1.0000
Diff (1-2)	Pooled		-0.4665	0.4654	0.0176		
Diff (1-2)	Satterthwaite		-0.4665		0.0156		

activeduty	Method	Mean	95% CL Mean		Std Dev	95% CL Std Dev	
0		0.3212	0.3154	0.3270	0.4670	0.4629	0.4711
1		0.7877	0.7577	0.8177	0.4092	0.3891	0.4316
Diff (1-2)	Pooled	-0.4665	-0.5011	-0.4319	0.4654	0.4614	0.4695
Diff (1-2)	Satterthwaite	-0.4665	-0.4971	-0.4359			

Method	Variances	DF	t Value	Pr > |t|
Pooled	Equal	25430	-26.44	<.0001
Satterthwaite	Unequal	769.93	-29.94	<.0001

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	24715	715	1.30	<.0001

Distribution of retirecalcyes

Q-Q Plots of retirecalcyes

The SAS System

The LOGISTIC Procedure

Model Information

Data Set	WORK.DISDATA
Response Variable	retirementyes
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	71 6
Number of Observations Used	71 6

Response Profile

Ordered Value	retirementye s	Total Frequency
1	1	531
2	0	185

Probability modeled is retirementyes=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	820.181	594.539
SC	824.755	727.176
-2 Log L	818.181	536.539

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	281.6422	28	<.0001
Score	274.6895	28	<.0001

| | | Wald | 170.3409 | 28 | <.0001 | |

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-3.9441	0.6692	34.7351	<.0001	
male	1	0.1212	0.2652	0.2089	0.6477	0.0272
age25_34	1	-0.3307	0.3392	0.9507	0.3295	-0.0909
age35_44	1	-0.1558	0.3891	0.1602	0.6890	-0.0371
age45over	1	-0.3697	0.5178	0.5099	0.4752	-0.0520
white	1	-0.0509	0.2483	0.0420	0.8375	-0.0140
married	1	-0.5972	0.2734	4.7723	0.0289	-0.1647
somecoll	1	0.1700	0.4295	0.1567	0.6922	0.0469
bachelors	1	-0.3430	0.5182	0.4382	0.5080	-0.0687
grad	1	0.7525	0.6603	1.2988	0.2544	0.1396
workfinedyes	1	-0.1152	0.2507	0.2110	0.6460	-0.0311
subfinknow	1	0.2448	0.0881	7.7159	0.0055	0.1919
objfinknow	1	0.4438	0.0961	21.3280	<.0001	0.3087
confidenceyes	1	0.8411	0.3901	4.6502	0.0311	0.1286
children	1	-0.2982	0.3714	0.6449	0.4219	-0.0711
income_25_50	1	-0.1215	0.4284	0.0805	0.7767	-0.0219
income_50_75	1	-0.1342	0.4351	0.0951	0.7578	-0.0251
income_75_100	1	0.5766	0.4122	1.9564	0.1619	0.1565
income_gt100	1	0.1148	0.4419	0.0675	0.7951	0.0261
guardianedsomecoll	1	-0.4865	0.4187	1.3503	0.2452	-0.1340
guardianedbachelors	1	-0.5152	0.4733	1.1851	0.2763	-0.1096
guardianedgrad	1	-1.1778	0.6005	3.8477	0.0498	-0.2185
overspend	1	0.1143	0.2515	0.2065	0.6495	0.0306
ccbeh	1	-0.0445	0.0702	0.4009	0.5266	-0.0431
mortgagelateno	1	0.4325	0.3337	1.6798	0.1949	0.0851
kidcollegeyes	1	1.4006	0.3382	17.1538	<.0001	0.3742
studentloansyes	1	0.7349	0.2486	8.7419	0.0031	0.1841
emergencyyes	1	0.7538	0.2874	6.8768	0.0087	0.1658
retirecalcyes	1	1.2237	0.2710	20.3918	<.0001	0.2761

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
male	1.129	0.671	1.898
age25_34	0.718	0.370	1.397
age35_44	0.856	0.399	1.835
age45over	0.691	0.250	1.906
white	0.950	0.584	1.546
married	0.550	0.322	0.940
somecoll	1.185	0.511	2.751
bachelors	0.710	0.257	1.959
grad	2.122	0.582	7.742
workfinedyes	0.891	0.545	1.457
subfinknow	1.277	1.075	1.518
objfinknow	1.559	1.291	1.882
confidenceyes	2.319	1.080	4.981
children	0.742	0.358	1.537
income_25_50	0.886	0.382	2.050
income_50_75	0.874	0.373	2.051
income_75_100	1.780	0.793	3.993
income_gt100	1.122	0.472	2.667
guardianedsomecoll	0.615	0.271	1.397
guardianedbachelors	0.597	0.236	1.510
guardianedgrad	0.308	0.095	0.999
overspend	1.121	0.685	1.835
ccbeh	0.957	0.834	1.098
mortgagelateno	1.541	0.801	2.964
kidcollegeyes	4.058	2.091	7.873
studentloansyes	2.085	1.281	3.394
emergencyyes	2.125	1.210	3.733
retirecalcyes	3.400	1.999	5.782

Association of Predicted Probabilities and Observed Responses

Percent Concordant	88.1	**Somers' D**	0.762
Percent Discordant	11.9	**Gamma**	0.762
Percent Tied	0.0	**Tau-a**	0.292
Pairs	9823 5	**c**	0.881

The SAS System

The LOGISTIC Procedure

Model Information

Data Set	WORK.DISDATA
Response Variable	retirementyes
Number of Response Levels	2
Model	binary logit
Optimization Technique	Fisher's scoring

Number of Observations Read	2145 7
Number of Observations Used	2145 7

Response Profile

Ordered Value	retirementyes	Total Frequency
1	1	6937
2	0	14520

Probability modeled is retirementyes=1.

Model Convergence Status

Convergence criterion (GCONV=1E-8) satisfied.

Model Fit Statistics

Criterion	Intercept Only	Intercept and Covariates
AIC	27009.079	19268.128
SC	27017.053	19499.369
-2 Log L	27007.079	19210.128

Testing Global Null Hypothesis: BETA=0

Test	Chi-Square	DF	Pr > ChiSq
Likelihood Ratio	7796.9510	28	<.0001
Score	6943.9015	28	<.0001

		Wald	4727.3237	28	<.0001	

Analysis of Maximum Likelihood Estimates

Parameter	DF	Estimate	Standard Error	Wald Chi-Square	Pr > ChiSq	Standardized Estimate
Intercept	1	-4.5944	0.1292	1265.1201	<.0001	
male	1	0.1727	0.0377	21.0170	<.0001	0.0462
age25_34	1	0.4017	0.0802	25.1032	<.0001	0.0831
age35_44	1	0.5395	0.0815	43.8281	<.0001	0.1126
age45over	1	0.1505	0.0760	3.9166	0.0478	0.0413
white	1	-0.0648	0.0440	2.1677	0.1409	-0.0155
married	1	-0.0958	0.0423	5.1364	0.0234	-0.0264
somecoll	1	-0.00070	0.0551	0.0002	0.9898	-0.00019
bachelors	1	0.1562	0.0629	6.1603	0.0131	0.0359
grad	1	-0.0892	0.0734	1.4791	0.2239	-0.0167
workfinedyes	1	0.3257	0.0697	21.8285	<.0001	0.0437
subfinknow	1	0.0319	0.0165	3.7257	0.0536	0.0234
objfinknow	1	0.0721	0.0130	30.5899	<.0001	0.0655
confidenceyes	1	0.2775	0.0534	27.0068	<.0001	0.0652
children	1	0.0815	0.0493	2.7342	0.0982	0.0214
income_25_50	1	1.2273	0.0806	231.9397	<.0001	0.2957
income_50_75	1	1.7854	0.0826	467.7428	<.0001	0.3918
income_75_100	1	2.0191	0.0878	529.1182	<.0001	0.3792
income_gt100	1	2.4984	0.0882	803.0438	<.0001	0.5458
guardianedsomecoll	1	0.1119	0.0506	4.8914	0.0270	0.0273
guardianedbachelors	1	0.0623	0.0560	1.2373	0.2660	0.0137
guardianedgrad	1	0.1553	0.0675	5.2918	0.0214	0.0274
overspend	1	-0.0375	0.0508	0.5442	0.4607	-0.00802
ccbeh	1	0.0725	0.0104	48.1924	<.0001	0.0921
mortgagelateno	1	0.4671	0.0393	141.5397	<.0001	0.1171
kidcollegeyes	1	0.4867	0.0629	59.8003	<.0001	0.0881
studentloansyes	1	0.1950	0.0454	18.4892	<.0001	0.0469
emergencyyes	1	0.2851	0.0434	43.2324	<.0001	0.0786
retirecalcyes	1	1.4601	0.0371	1551.6819	<.0001	0.3764

Odds Ratio Estimates

Effect	Point Estimate	95% Wald Confidence Limits	
male	1.188	1.104	1.280
age25_34	1.494	1.277	1.749
age35_44	1.715	1.462	2.012
age45over	1.162	1.001	1.349
white	0.937	0.860	1.022
married	0.909	0.836	0.987
somecoll	0.999	0.897	1.113
bachelors	1.169	1.033	1.323
grad	0.915	0.792	1.056
workfinedyes	1.385	1.208	1.588
subfinknow	1.032	1.000	1.066
objfinknow	1.075	1.048	1.103
confidenceyes	1.320	1.189	1.465
children	1.085	0.985	1.195
income_25_50	3.412	2.914	3.996
income_50_75	5.962	5.071	7.009
income_75_100	7.531	6.341	8.945
income_gt100	12.163	10.233	14.457
guardianedsomecoll	1.118	1.013	1.235
guardianedbachelors	1.064	0.954	1.188
guardianedgrad	1.168	1.023	1.333
overspend	0.963	0.872	1.064
ccbeh	1.075	1.053	1.097
mortgagelateno	1.595	1.477	1.723
kidcollegeyes	1.627	1.438	1.841
studentloansyes	1.215	1.112	1.328
emergencyyes	1.330	1.222	1.448
retirecalcyes	4.307	4.005	4.631

Association of Predicted Probabilities and Observed Responses

Percent Concordant	84.4	**Somers' D**	0.687
Percent Discordant	15.6	**Gamma**	0.687
Percent Tied	0.0	**Tau-a**	0.301
Pairs	100725240	**c**	0.844

| The SAS System |

The CORR Procedure

20 Variables: retirementyes male age white married education workfinedyes subfinknow objfinknow confidenceyes children income guardianed overspend ccbeh mortgagelateno kidcollegeyes studentloansyes emergencyyes retirecalcyes

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
retirementyes	716	0.74162	0.43805	531.00000	0	1.00000
male	716	0.79050	0.40723	566.00000	0	1.00000
age	716	2.28073	0.87911	1633	1.00000	6.00000
white	716	0.55726	0.49706	399.00000	0	1.00000
married	716	0.51536	0.50011	369.00000	0	1.00000
education	716	4.39944	1.56615	3150	1.00000	7.00000
workfinedyes	716	0.39665	0.48954	284.00000	0	1.00000
subfinknow	716	6.12430	1.42207	4385	1.00000	7.00000
objfinknow	716	2.40503	1.26189	1722	0	6.00000
confidenceyes	716	0.91620	0.27728	656.00000	0	1.00000
children	716	0.75140	0.43251	538.00000	0	1.00000
income	716	5.31285	1.78099	3804	1.00000	8.00000
guardianed	716	3.70391	3.82543	2652	1.00000	99.00000
overspend	716	0.37989	0.48570	272.00000	0	1.00000
ccbeh	716	2.49302	1.76007	1785	0	6.00000

mortgagelateno	716	0.14944	0.35677	107.00000	0	1.00000
kidcollegeyes	716	0.62430	0.48464	447.00000	0	1.00000
studentloansyes	716	0.70950	0.45431	508.00000	0	1.00000
emergencyyes	716	0.80168	0.39902	574.00000	0	1.00000
retirecalcyes	716	0.78771	0.40922	564.00000	0	1.00000

The SAS System

The CORR Procedure

20 Variables:	retirementyes male age white married education workfinedyes subfinknow objfinknow confidenceyes children income guardianed overspend ccbeh mortgagelateno kidcollegeyes studentloansyes emergencyyes retirecalcyes

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
retirementyes	21457	0.32330	0.46775	6937	0	1.00000
male	21457	0.37964	0.48531	8146	0	1.00000
age	21457	3.71058	1.63500	79618	1.00000	6.00000
white	21457	0.74899	0.43361	16071	0	1.00000
married	21457	0.52090	0.49957	11177	0	1.00000
education	21457	4.43538	1.73985	95170	1.00000	7.00000
workfinedyes	21457	0.06329	0.24349	1358	0	1.00000
subfinknow	21457	5.07452	1.33162	108884	1.00000	7.00000

objfinknow	21457	3.16591	1.64784	67931	0	6.00000
confidenceyes	21457	0.76143	0.42622	16338	0	1.00000
children	21457	0.34893	0.47664	7487	0	1.00000
income	21457	4.46404	2.07321	95785	1.00000	8.00000
guardianed	21457	4.96463	12.33934	106526	1.00000	99.00000
overspend	21457	0.18507	0.38836	3971	0	1.00000
ccbeh	21457	3.48558	2.30544	74790	0	6.00000
mortgagelateno	21457	0.29170	0.45456	6259	0	1.00000
kidcollegeyes	21457	0.12299	0.32843	2639	0	1.00000
studentloansyes	21457	0.25502	0.43588	5472	0	1.00000
emergencyyes	21457	0.48744	0.49985	10459	0	1.00000
retirecalcyes	21457	0.32274	0.46753	6925	0	1.00000

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: retirementyes

Number of Observations Read	71 6

Number of Observations Used	50 8

Number of Observations with Missing Values	20 8

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	28	10.95986	0.39142	4.73	<.0001
Error	47 9	39.64447	0.08277		
Corrected Total	50 7	50.60433			

Root MSE	0.28769	R-Square	0.2166
Dependent Mean	0.88780	Adj R-Sq	0.1708
Coeff Var	32.40490		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Tolerance	Variance Inflation
Intercept	1	0.28507	0.11539	2.47	0.0138	.	0
male	1	0.04173	0.03567	1.17	0.2426	0.88610	1.12854
age25_34	1	0.04023	0.05496	0.73	0.4645	0.22372	4.46979
age35_44	1	0.10623	0.05938	1.79	0.0742	0.23796	4.20243
age45over	1	0.03655	0.07776	0.47	0.6385	0.48486	2.06247
white	1	0.03943	0.03266	1.21	0.2279	0.61318	1.63085
married	1	-0.10725	0.03170	-3.38	0.0008	0.64923	1.54028
somecoll	1	0.02548	0.06001	0.42	0.6714	0.18334	5.45428
bachelors	1	-0.05222	0.07811	-0.67	0.5040	0.24583	4.06782
grad	1	0.09757	0.09215	1.06	0.2902	0.17906	5.58472

workfinedyes	1	-0.02264	0.02976	-0.76	0.4471	0.74429	1.34356
subfinknow	1	0.02696	0.01534	1.76	0.0795	0.60962	1.64037
objfinknow	1	0.06371	0.01402	4.54	<.0001	0.69448	1.43993
confidenceyes	1	0.06852	0.06313	1.09	0.2783	0.75943	1.31678
children	1	-0.06015	0.06779	-0.89	0.3753	0.22257	4.49302
income_25_50	1	-0.11347	0.07166	-1.58	0.1140	0.43737	2.28641
income_50_75	1	-0.09023	0.06892	-1.31	0.1911	0.31570	3.16760
income_75_100	1	-0.04915	0.06283	-0.78	0.4344	0.16512	6.05631
income_gt100	1	-0.10123	0.06710	-1.51	0.1320	0.21058	4.74887
guardianedsomecoll	1	-0.09251	0.05870	-1.58	0.1157	0.19086	5.23957
guardianedbachelors	1	-0.02292	0.07186	-0.32	0.7499	0.25075	3.98807
guardianedgrad	1	-0.13401	0.09141	-1.47	0.1433	0.20198	4.95106
overspend	1	0.00697	0.02921	0.24	0.8114	0.78719	1.27034
ccbeh	1	-0.02116	0.01046	-2.02	0.0436	0.60678	1.64804
E15_2015	1	-0.00258	0.00139	-1.86	0.0636	0.93615	1.06821
kidcollegeyes	1	0.16968	0.06217	2.73	0.0066	0.22023	4.54080
studentloansyes	1	0.05231	0.03953	1.32	0.1863	0.73473	1.36104
emergencyyes	1	0.12723	0.05277	2.41	0.0163	0.68371	1.46260
retirecalcyes	1	0.11048	0.05558	1.99	0.0474	0.69532	1.43818

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: retirementyes
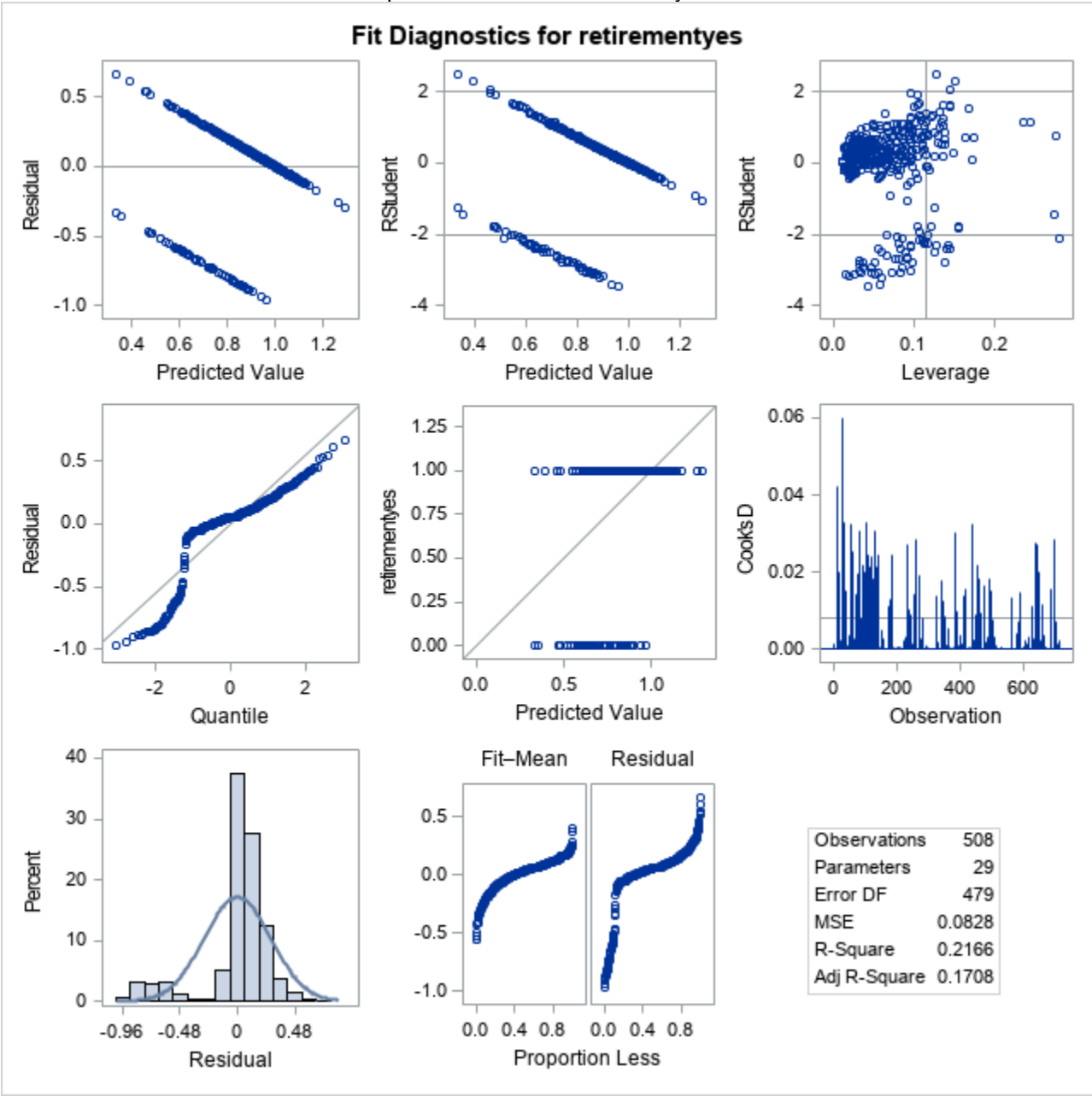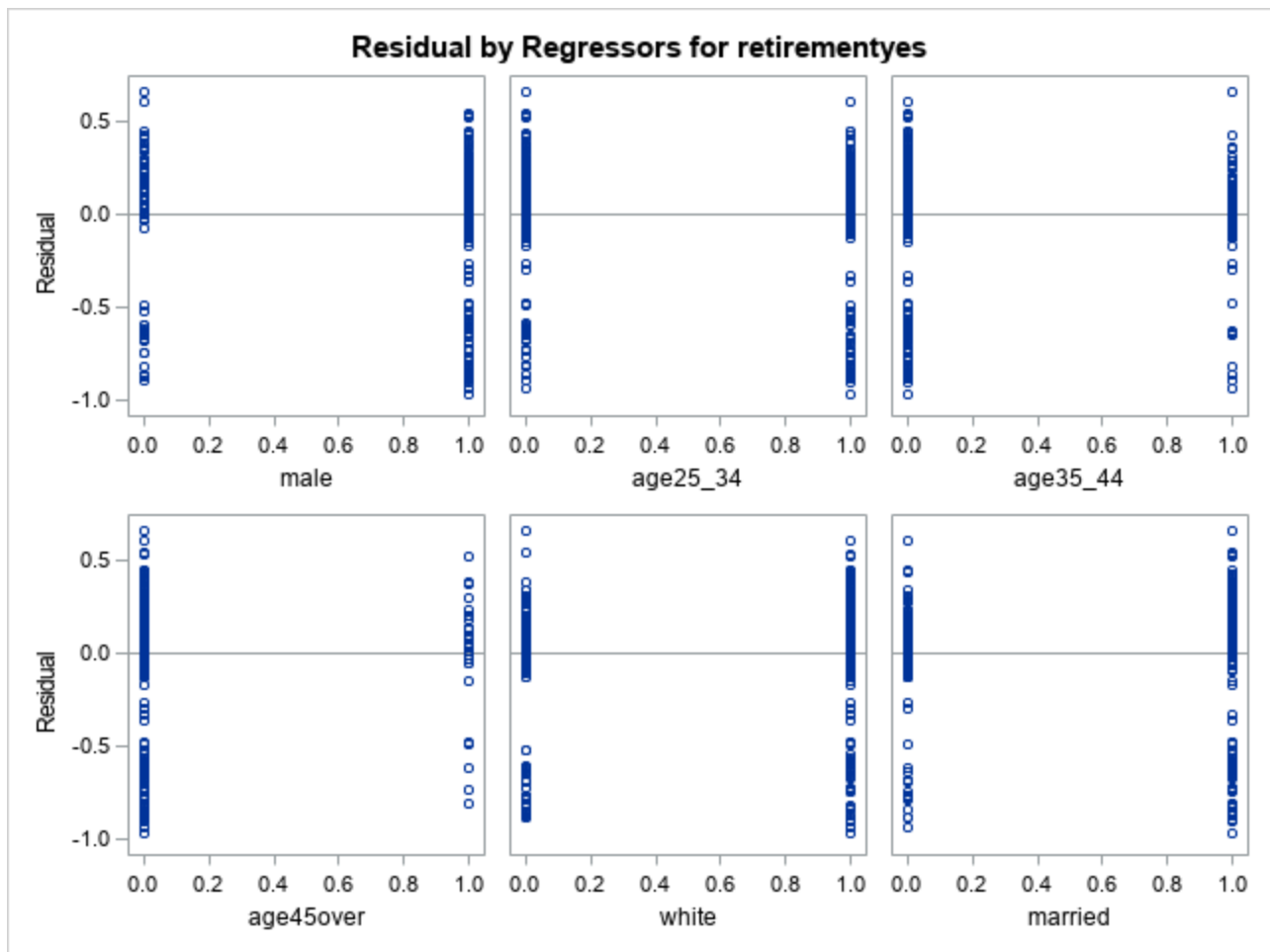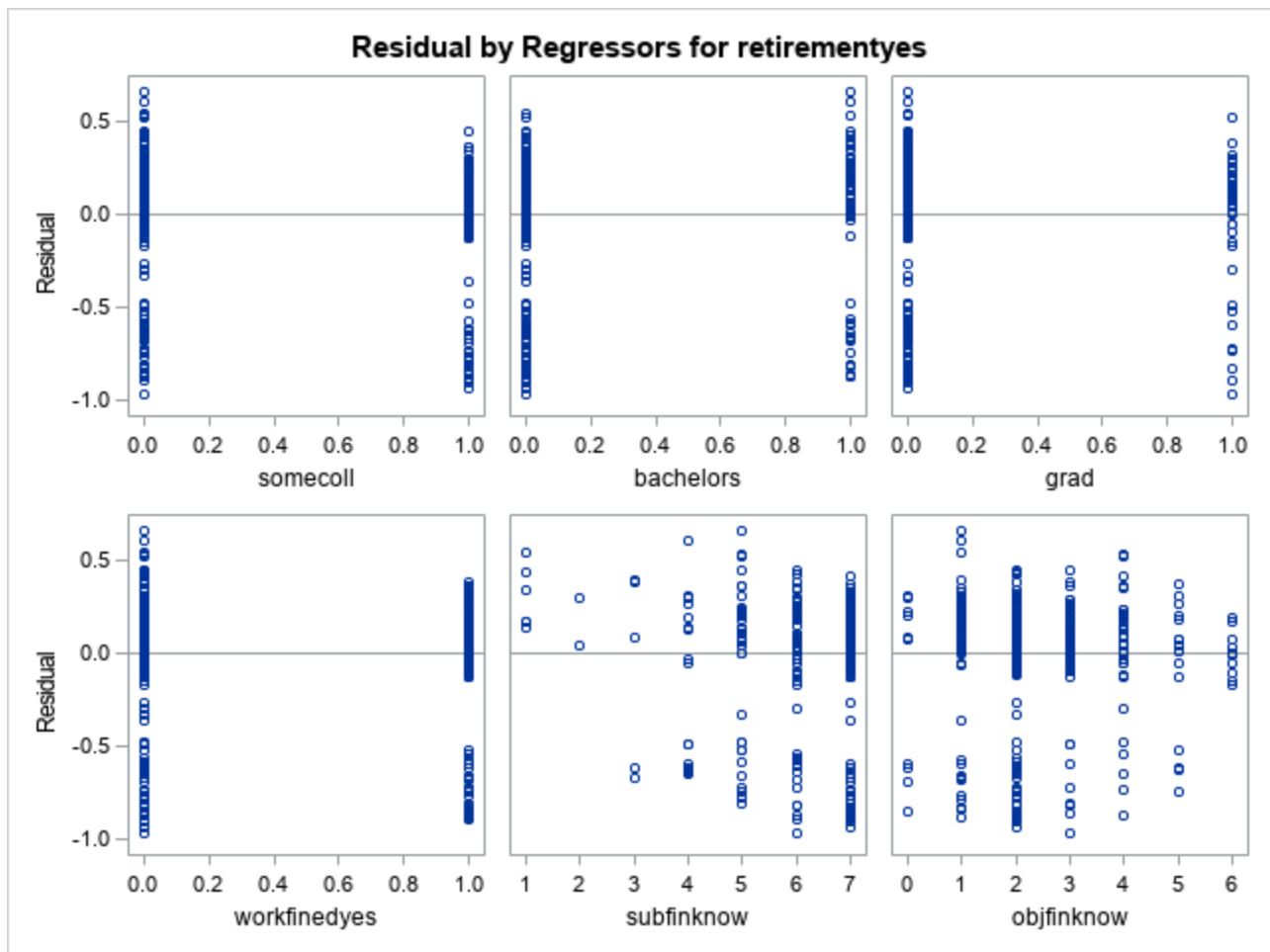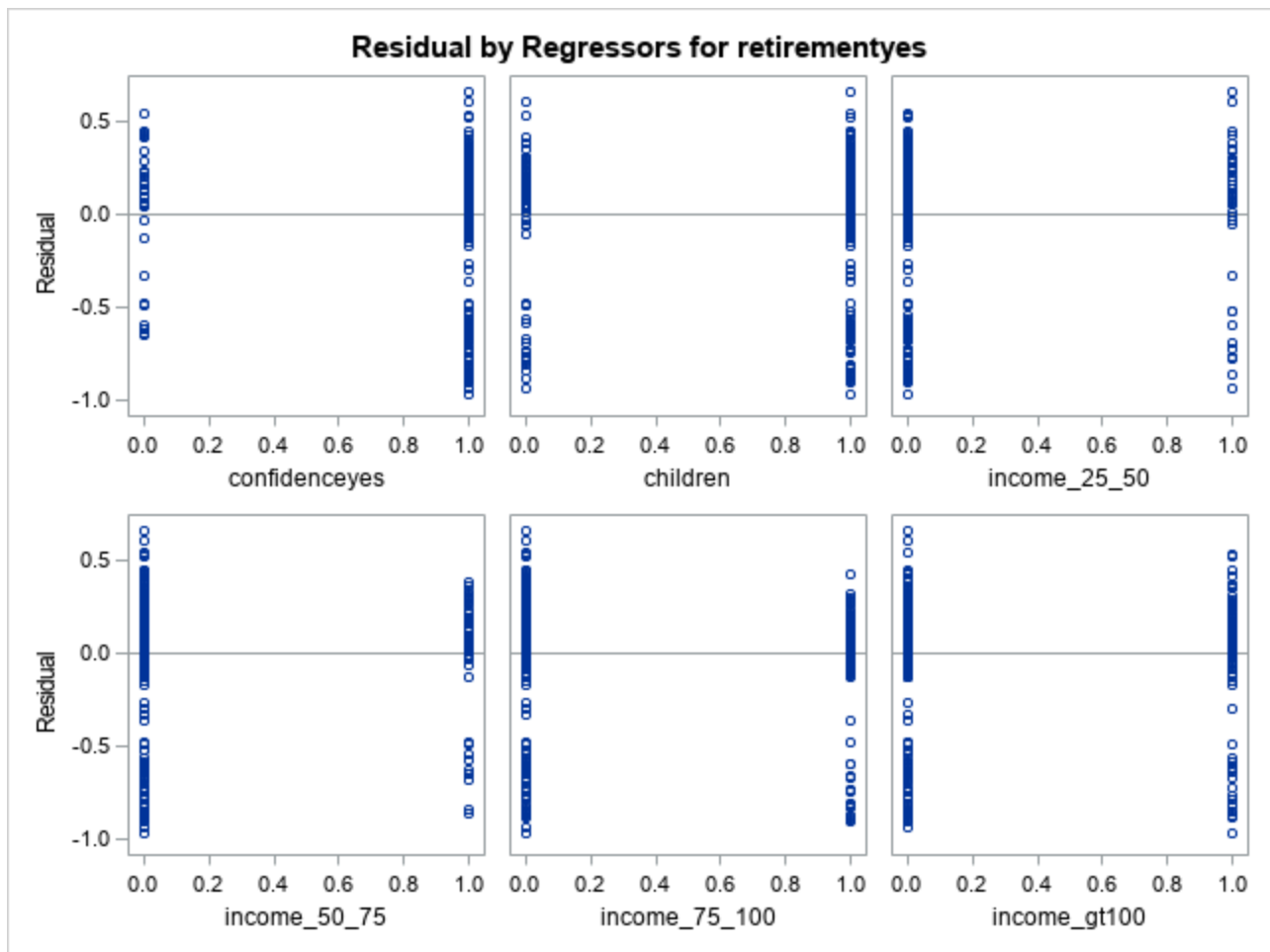
Fit Diagnostics for retirementyes

Observations	508
Parameters	29
Error DF	479
MSE	0.0828
R-Square	0.2166
Adj R-Square	0.1708

Residual by Regressors for retirementyes

Residual by Regressors for retirementyes

Residual by Regressors for retirementyes

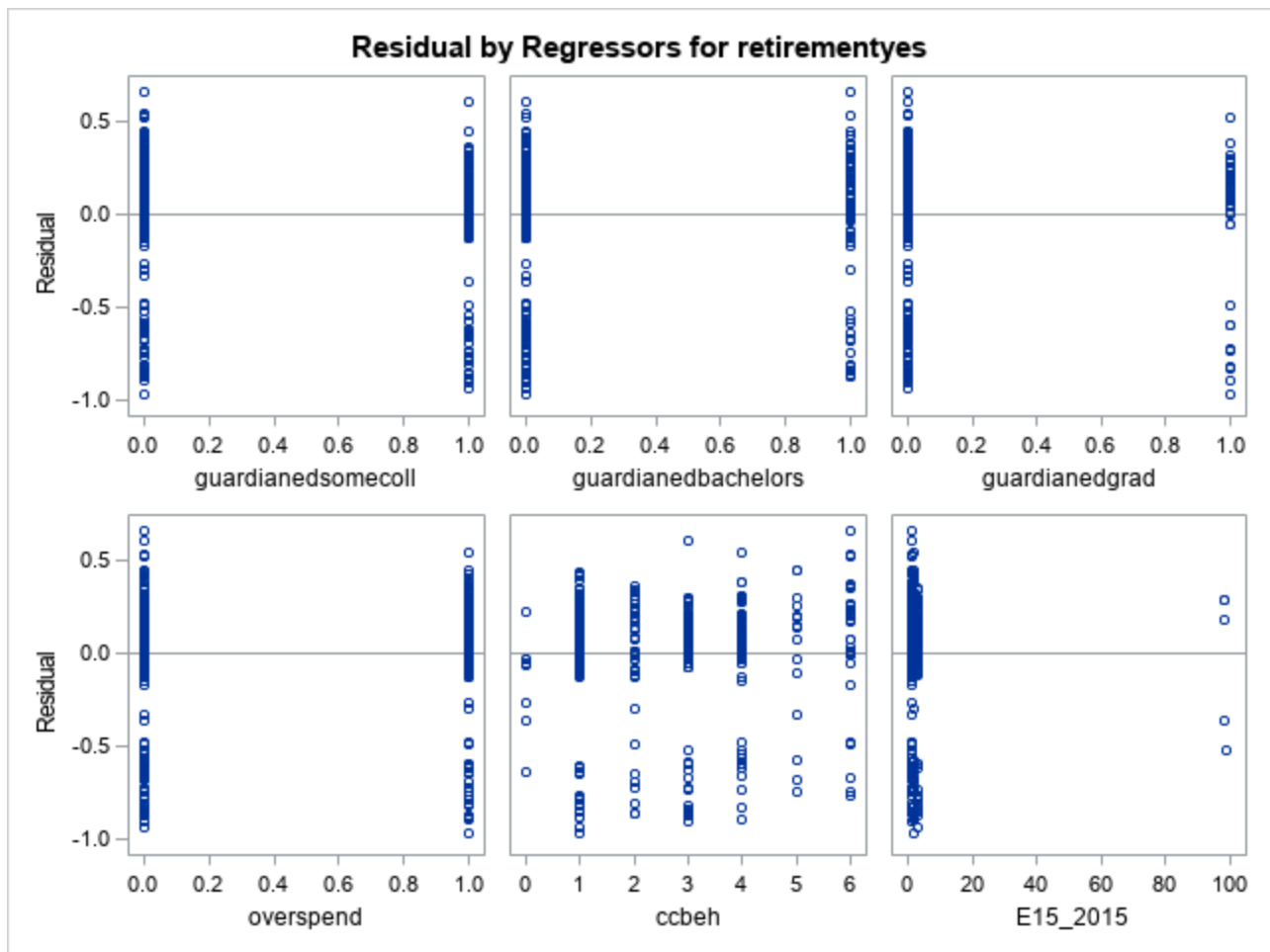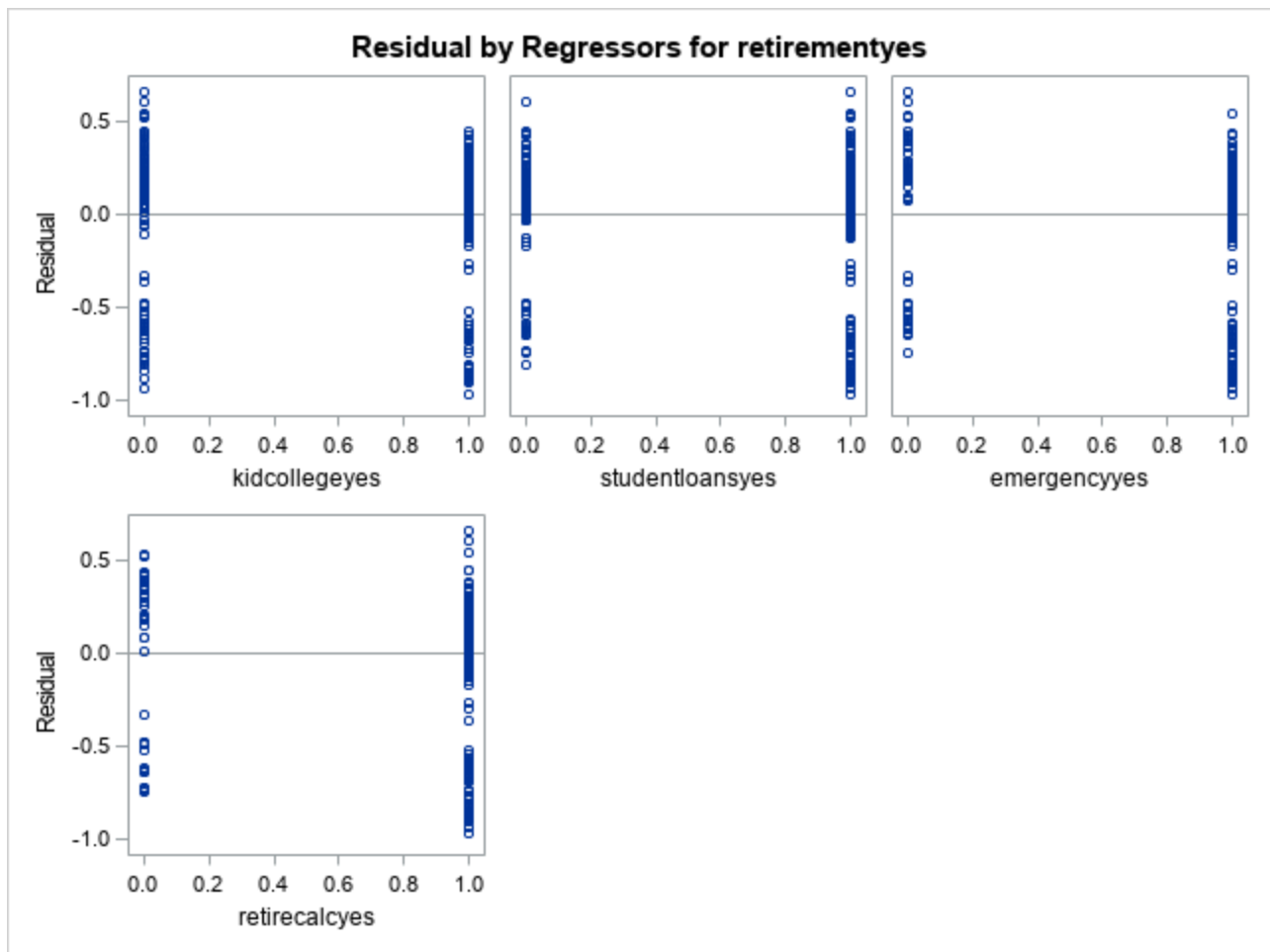Residual by Regressors for retirementyes

Residual by Regressors for retirementyes

The SAS System

The REG Procedure
Model: MODEL1
Dependent Variable: retirementyes

Number of Observations Read	2145 7
Number of Observations Used	7245
Number of Observations with Missing Values	1421 2

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	28	512.50303	18.30368	101.70	<.0001
Error	721 6	1298.6707 4	0.17997		
Corrected Total	724 4	1811.1737 8			

Root MSE	0.42423	R-Square	0.2830
Dependent Mean	0.49676	Adj R-Sq	0.2802
Coeff Var	85.39999		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Tolerance	Variance Inflation
Intercept	1	-0.10418	0.04063	-2.56	0.0104	.	0
male	1	0.03663	0.01074	3.41	0.0007	0.89689	1.11496
age25_34	1	0.05769	0.03013	1.91	0.0556	0.21186	4.72014
age35_44	1	0.07019	0.02962	2.37	0.0178	0.16236	6.15933
age45over	1	0.00741	0.02862	0.26	0.7958	0.12501	7.99917
white	1	0.00717	0.01265	0.57	0.5706	0.94625	1.05681
married	1	-0.02197	0.01255	-1.75	0.0801	0.77011	1.29852
somecoll	1	-0.01352	0.01553	-0.87	0.3840	0.45964	2.17564
bachelors	1	0.02245	0.01783	1.26	0.2082	0.39270	2.54647
grad	1	-0.02274	0.02027	-1.12	0.2620	0.41543	2.40713
workfinedyes	1	0.05173	0.01881	2.75	0.0060	0.95906	1.04269

subfinknow	1	0.00028656	0.00469	0.06	0.9513	0.82980	1.20511
objfinknow	1	0.01476	0.00380	3.89	0.0001	0.74263	1.34656
confidenceyes	1	0.05836	0.01435	4.07	<.0001	0.77787	1.28556
children	1	0.00844	0.01314	0.64	0.5210	0.57935	1.72608
income_25_50	1	0.09850	0.02367	4.16	<.0001	0.29928	3.34140
income_50_75	1	0.20670	0.02383	8.68	<.0001	0.24659	4.05532
income_75_100	1	0.25912	0.02498	10.37	<.0001	0.25470	3.92612
income_gt100	1	0.39787	0.02513	15.83	<.0001	0.17738	5.63775
guardianedsomecoll	1	0.02737	0.01410	1.94	0.0523	0.65014	1.53812
guardianedbachelors	1	0.00305	0.01567	0.19	0.8454	0.57239	1.74706
guardianedgrad	1	0.03789	0.01873	2.02	0.0430	0.60101	1.66385
overspend	1	-0.01011	0.01384	-0.73	0.4653	0.90612	1.10360
ccbeh	1	0.00551	0.00307	1.79	0.0730	0.70384	1.42079
E15_2015	1	-0.00153	0.00045653	-3.36	0.0008	0.95767	1.04420
kidcollegeyes	1	0.08862	0.01573	5.63	<.0001	0.62958	1.58837
studentloansyes	1	0.02961	0.01234	2.40	0.0165	0.84113	1.18888
emergencyyes	1	0.06329	0.01187	5.33	<.0001	0.71155	1.40539
retirecalcyes	1	0.27578	0.01085	25.42	<.0001	0.85276	1.17266

The SAS System

The FREQ Procedure

E15_2015	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	7422	82.43	7422	82.43
2	734	8.15	8156	90.58
3	734	8.15	8890	98.73
98	95	1.06	8985	99.79
99	19	0.21	9004	100.00

Frequency Missing = 16428

The SAS System

The FREQ Procedure

E15_2015	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	107	21.06	107	21.06
2	205	40.35	312	61.42
3	191	37.60	503	99.02
98	4	0.79	507	99.80
99	1	0.20	508	100.00

Frequency Missing = 208

The SAS System

The FREQ Procedure

E15_2015	Frequency	Percent	Cumulative Frequency	Cumulative Percent
1	6259	86.39	6259	86.39
2	425	5.87	6684	92.26
3	464	6.40	7148	98.66
98	83	1.15	7231	99.81
99	14	0.19	7245	100.00

Frequency Missing = 14212