

The Conditions Affecting Military Enlistments

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ABSTRACT

The purpose of this study is to determine whether or not there is a difference in the rate of military enlistments by state, and if so, to identify the conditions that lead to this difference. The theory behind this study is that states with fewer opportunities for youths will have higher military enlistment rates when compared to states with more opportunities for its youths. Economic reviews from academe, and data provided by the Departments of Defense and Veteran Affairs support this theory. Results from this study suggest that states with fewer opportunities for higher education, higher poverty rates, and higher percentages of veterans, increase a state's military enlistment rate. When the United States goes to war, those risking their lives on the front line are young men and women who are recent military enlistees; they are also children, siblings, and parents to countless Americans left at home, waiting and worrying. This study is important because military action involves many influential stakeholders, among them the American public, Congress, Department of Defense and Executive Branch; and given our state of affairs at present, there is no greater focus on, or concern for, military enlistees than now, during the war on terrorism.

Introduction

The purpose of this study is to determine whether or not there is a difference in the rate of military enlistments by state, and if so, to identify the conditions that affect military enlistment rates. Enlisted recruits are between the ages of 17 and 35; however, this study will examine only the rate of 18-24 year olds that enlist in the military because at this age, youths are making their first choices regarding careers and education. The theory behind this study is that states with fewer opportunities for youths will positively affect the rate of military enlistment, as compared to states with more opportunities for youths. This analysis is also driven by the theory that civic culture and feelings of patriotism will have a direct and noticeable impact on the proportion of a state's 18-24 year old population that choose to enlist in the military.

The literature reviewed focuses on many variables that affect military enlistment, utilizing either state or county level data. Four studies that seek to understand the variables influencing military enlistment rates will be examined to provide context to this study. Population representation within the military is a public policy issue and because of this, the Department of Defense's Navy Recruiting Command examined who serves in the military and how socio-demographics come into play. In their study, "Socio-demographics and Military Recruiting: The Role of Veterans," the Navy points out that there is historic competition between the military services for recruits in addition to the competition of universities and the work force. Using 1990 county level data, the study investigated enlistment behavior; it found that median family income and unemployment (two traditional economic factors), education, and especially the percent of population that was comprised of veterans under the age of 65, impacted military enlistment. The study concluded that "other factors which are not typically included in other studies prove to be at least as important as economic factors, notably veteran population...the presence of veterans under age 65 is perhaps the single most important factor for explaining enlistment behavior".¹ The Department of Defense conducts studies every year to determine if the population is effectively represented in the military services. It consistently finds that the military force "is diverse [but] the military way of life is more attractive to some members of society than to others" and that "there is a continuing need to track demographic changes".² This study takes the DoD and Navy's findings into account and attempts to identify variables that accurately reflect the demographic characteristics that impact military enlistments.

The DoD is not the only organization that looks at military enlistments. Having access to analytic tools, and most importantly, data sources, RAND studied military enlistments and published a report in 1999, titled "Variables Influencing Enlistment Supply." County level data were used to increase "the variability in the observed values of several variables relative to that obtainable with more aggregated geographical areas used in previous studies."³ It analyzed variables used to define the abstract concept of "youth opportunities," testing the theory that youths are more likely to join the military if they live in a county with a combination of low civilian opportunities but attractive alternate opportunities such as the military. The main economic factor considered by

RAND was the difference in civilian to that of military salaries and fringe benefits. Findings suggest that the "richness of career and schooling opportunities available" are significant and impact military recruitment and enlistment in a way that military pay and benefits do not.⁴ RAND's choice of variables contributes to the variables used in this study.

Building on RAND's examination of civilian versus military pay, the 2003 study "Gender and Racial Differences in Military Enlistment," suggests that blacks and women are more "responsive to increases in the ratio of military to civilian pay".⁵ It takes a closer look at who is enlisting in the military, and breaks down these enlistees by gender and race. The study also uses unemployment rates by race and gender as variables to operationalize the abstract concepts of economic opportunities. Results of the study show that "group-specific unemployment rates...are not significant in determining military accessions".⁶ Insignificant findings in this study create opportunities to try and define abstract concepts such as economic opportunities and patriotism using more relevant variables.

Taking the above literature into account, this study is important because military enlistments involve many influential stakeholders, among them, the American public, Congress, Department of Defense, and the Executive Branch. As military personnel are deployed to dangerous locations throughout the world, the American public places the Executive Branch and Congress under greater scrutiny, as more and more lives are at stake. When voices are raised in the halls of Congress, arguing that too many soldiers are dying in war, the voices that are the loudest will most likely be those representing states with a large proportion of military enlistees and a past history of strong military involvement. Additionally, now that the draft is no longer instituted by the Department of Defense, it is becoming increasingly imperative to recruit effectively. The DoD could better steer its efforts if it knew which states are most likely to possess the positive conditions that affect military enlistment. And in an effort to be more representative of the entire United States, the DoD may choose to focus on those states that have a lower rate of enlistment, and determine what policy changes must be made to encourage youths to enlist in the military rather than to pursue other career paths.

Method

Referring to Table 1 below, titled "Descriptive Statistics," five independent variables have been chosen to explain the dependent variable, state military enlistment rates; they are: percentage of 18-24 year olds pursuing higher education, poverty rate, percentage of veterans, unemployment, and voting rate. These variables have been operationalized to measure abstract concepts. There are two abstract concepts that are the focus of this study: opportunities and civic duty. "Opportunities" is a concept defined by three main variables—pursuit of higher education, unemployment, and poverty rate. The rate of 18-24 year olds pursuing higher education (bachelor's degree or higher) is used to define the amount of educational opportunities available to a state's youth. Unemployment rates are used as a variable to find out if individuals join the military

because they need a job and lack opportunities to obtain one within their state. The poverty rate is used as a variable to see if individuals join the military as a way to provide for their basic needs such as food, clothing, and housing.

The second concept, civic duty (which can also be referred to as "patriotism"), is defined by two variables, the percentage of veterans and the voting rate. The voting rate is used to indicate a state's sense of civic duty and practice; the percentage of veterans complements the voting rate by indicating a state's social awareness of the obligation and duty one has to serve one's country. There is also an attempt to measure whether or not having a family member in the military might have an impact on military enlistment. Because this is hard to measure, the rate of veterans per state is hoped to capture some of these data. It is worth noting that this study uses the traditional definitions of the concepts of "state" and "military." "State" is an abstract concept created to indicate a particular level of government (as opposed to local or federal); and taking an international perspective, even "military" is a subjective term defined arbitrarily by each country, and can be changed at will in order to support domestic and foreign agendas.

Results

The dependent variable is the rate of 18-24 year olds that enlisted in the military in the year 2000—it is interval/ratio and continuous. Data for this variable are taken from the Department of Defense's 2000 Population Representation in the Military Services report.

Referring to Table 1, the mean state military enlistment rate is 0.69 percent; and the range of a state's 18-24 year olds that enlisted in the military in the year 2000 is 0.337 to 1.264 percent. While the mean is a small percentage number, there is enough range to allow the study to move forward. Because the unit of analysis is states, the total sample size is 50. The regression model produced would not be predictive of Washington, D.C., and therefore D.C. was excluded from the analysis.

TABLE 1. DESCRIPTIVE STATISTICS

Variable	Mean (in percent)	Std. Deviation
Enlist P	0.69	0.1922
Vet	13.59	1.6110
Edu	33.986	5.1068
Pov	57.34	6.4533
Unemp	3.904	0.9379

As noted previously, there are five independent variables being examined: percentage of 18-24 year olds pursuing higher education, poverty rate, percentage of veterans, unemployment rate, and voting rate. The level of measurement for these variables is interval/ratio and they are continuous. Data were taken from the following sources. The rate of 18-24 year olds pursuing a bachelor's degree or higher, poverty rate, and

unemployment rate are taken from the 2000 U.S. Census Report. In the year 2000, on average, 34 percent of a state's 18-24 year olds were enrolled in institutes of higher education; the average poverty rate was 11.9 percent; and the unemployment rate was 3.9 percent. The percentage of veterans by state is taken from the Department of Veteran's Affairs database. Note that this data does not distinguish between veterans under or over the age of 65 years old—it includes veterans of all ages. On average, the percentage of veteran's per state was 13.59. The voting rate by state is taken from Dave Leip's Atlas of U.S. Presidential Electives—National 2000 Presidential Election data. The state mean for voting in the last presidential election was 57.34 percent—more than half of a state's population eligible to vote, did.

This study assumes random sampling, independent subgroups, and a normally distributed population. Ordinary least squares (OLS) regression will be used to examine the hypotheses, with a rejection criteria set at alpha equal to 0.05 level (two-tailed test). The multiple regression model is:

$$\text{ENLIST P} = a + \text{EDUC} + \text{POV} + \text{VET} + \text{UNEMP} + \text{VOTE} + e$$

The hypotheses are:

1. The higher a state's proportion of 18-24 years olds pursuing a bachelor degree or higher, the less likely it is to have a high military enlistee rate.
2. The higher a state's poverty rate, the more likely it is to have a high military enlistee rate.
3. The higher a state's proportion of veterans, the more likely it is to have a high military enlistee rate.
4. The higher a state's unemployment rate, the more likely it is to have a higher military enlistee rate.
5. The higher a state's voting rate, the more likely it is to have a higher military enlistee rate.

Results to be discussed can found in Tables 2 and 3.

TABLE 2. MODEL STATISTICS

Cases (n)	R	R-squared	Adjusted R-squared	F-ratio	p<
50	0.873	0.763	0.736	28.307	0.000

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TABLE 3. REGRESSION OUTPUT

Variable	b-coefficient	Std. Error	Betawgt	t	p<
Vet	0.0619	0.0106	0.5187	5.863	0.000*
Edu	-0.0105	0.0036	-0.2788	-2.901	0.006*
Pov	0.0177	0.0056	.2849	3.149	0.003*
Vote	0.0034	0.0023	.1125	1.467	0.149
Unemp	0.0298	0.0195	.1455	1.528	0.134

*Results are statistically significant at a p-value of 0.05

The regression equation fits the data well, and the results are significant at the 0.05 level. With an adjusted R-squared of 0.736, the model accounts for 73.6 percent of the variance in military enlistments. Among the five variables in the model, three are statistically significant: percentage of veterans, pursuit of higher education, and poverty rate. The percentage of veterans per state has an unstandardized coefficient of 0.0619; and the pursuit of higher education and poverty rate have unstandardized coefficients of -0.0105 and 0.0177 respectively. Examining the beta weights of these three statistically significant variables; the percentage of veterans has the greatest influence on the model. The independent variables of voting and unemployment rates were found to be insignificant and do not impact the model. The estimated model is:

$$\text{Enlist P} = -0.310 + 0.062(\text{Vet}) + -0.010(\text{Educ}) + 0.018(\text{Pov}) + .003(\text{Vote}) + 0.030(\text{Unemp})$$

Taking the unstandardized coefficients into account, the model indicates that a one percent increase in veterans in a state will result in an average 0.60 percent increase in 18-24 year olds enlisting in the military, holding all other variables constant in the equation. A one percent increase in a state's 18-24 year olds pursuing higher education will result in an average 0.01 percent decrease in 18-24 year olds enlisting in the military, holding all other variables constant. A one percent increase in a state's poverty rate will result in an average 0.018 percent increase in 18-24 year olds enlisting in the military, holding all other variables constant.

Conclusion

The purpose of this study was to determine whether or not there is a difference in the rate of military enlistments by state, and if so, to identify the conditions that affect military enlistment. As the data suggest, there are several variables that are statistically significant in influencing the military enlistment rate by state. In particular, the percentage of veterans per state has a notable impact on the enlistment rate. The attempt to measure civic duty and patriotism was more successful using this variable as opposed to the voting rate variable. One reason for the importance of a veteran population is that it increases the exposure and knowledge of the military. If a state is continuously aware

of military history and its importance, then it can be suggested by this model that a state's youth will be more likely to enlist in the military.

Opportunities, or the lack thereof, also seem to be indicators of whether a state will have a higher military enlistment rate. For example in this study, a state's military enlistment rate decreases as the pursuit of higher education increases. The pursuit of higher education can be impacted by various constraints including financial, educational, or geographical. Peer behavior may also have an impact on the pursuit of higher education. Evidence suggests that youths are influenced by their peers, and if there is a community where a youth's peers are pursuing higher education, the norm would be to pursue higher education as well; therefore, leading to a low rate of military enlistment. If a youth's peers are pursuing higher education in smaller numbers, then looking elsewhere for opportunities, such as the military, could be one possible scenario explaining how opportunities combined with peer behavior, can impact military enlistments. In terms of poverty and unemployment, the results indicate that 18-24 year olds that enlist in the military may do so in order to obtain the basic living standards, more so that in an attempt to obtain employment only. The attempt to compare unemployment versus poverty was successful using this model, even if only one of the two variables was found to be statistically significant.

In general, every state is unique because it is made up of individuals who have different opinions on issues ranging from politics to religion, and everything in between. If each state's young servicemen and women were asked why they joined the military, their answers, based on the data presented in this study, as well as common sense, would obviously differ. However, one could argue that a feeling of civic duty and the responsibility to serve one's country is a common thread that unites most military enlistees. If civic duty can be measured in part by the percentage of veterans per state—which this study has found has a statistically significant impact—then perhaps this study comes one step closer to identifying some of the underlying conditions affecting military enlistments.

¹ Boyer, Andrea and Edward Schmitz. *Socio-demographics and military recruiting: The Role of Veterans*. U.S. Navy Recruiting Command, Office of the Assistant Secretary of Defense, 1995.

² *2000 Population Representation in the Military Services Report*. U.S. Department of Defense. <http://www.dod.mil/prhome/poprep2000/>.

³ RAND, Recent Recruiting Trends and Their Implications for Models of Enlistment Supply: Variables Influencing Enlistment Supply. <http://www.rand.org/publications/MR/MR847/>, 1999.

⁴ RAND (1999).

⁵ Cleary, Michael J. and Stephen Wu. *Gender and Racial Differences in Military Enlistment*. Published abstract, JEL Codes: J00, J15, J16. Hamilton College, Department of Economics, June 2003.

⁶ Cleary, Michael J. and Stephen Wu. (2003).