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# Dropout Analysis of Veterans VR&E Program Using 2007 Veterans Employability Research Survey

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# DROPOUT ANALYSIS OF VETERANS VR&E PROGRAM USING 2007 VETERANS EMPLOYABILITY RESEARCH SURVEY

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Title: Dropout Analysis of Veterans VR&E Program Using 2007 Veterans Employability Research Survey

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This study assessed the types of disabled veterans most likely to drop out of the Vocational Rehabilitation and Employment (VR&E) Program. The research examined veterans who were enrolled in the program between January 2004 and November 2005 using the 2007 Veterans Employability Research Survey (VERS).

Logistic Regression was used to examine dropout rates. Analyzed variables included previous occupation types, health, self-efficacy, marital status, number of children, gender and race.

The analysis illustrates that the characteristics of program dropouts vary at different stages. Groups most likely to drop out of the program include black and male veterans. Blue collar and other non-white collar workers are more likely to drop out than white collar workers. Veterans with better self-reported health and higher levels of self-efficacy were more likely to finish. Married veterans had lower dropout rates than those who are separated/divorced or widowed. As the number of children increased completion rates decreased.

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# CHAPTER I

## INTRODUCTION

Many veterans have disabilities they acquired while on duty, resulting in the need for help finding employment. According to the U.S. Bureau of Labor Statistics (2012), 12.1 percent of Gulf War-Era II veterans were unemployed; the unemployment rate for all veterans was 8.3 percent. When comparing younger male (ages 18 to 24) Gulf War-Era II veterans to their non-serving counterparts, unemployment rates were higher, which were 29.1 and 17.6 percent, respectively (U.S. Bureau of Labor Statistics 2012).[1] Comparing disabilities rates between Gulf War-Era II veterans to rates of disabled veterans overall, findings demonstrate a twelve percent differential. Twenty-six percent of those from the Gulf War had a service-connected disability in 2001, whereas fourteen percent of all veterans were disabled (U.S. Bureau of Labor Statistics 2012).

To aid those needing support with employment issues it is important that the current programs available are efficacious for diverse types of veterans' needs. For instance, some have work experience prior to serving in the military and simply need help updating a resume or locating occupational position openings. Others have no prior work experience, resulting in the need for employment training and/or education to gain the necessary requirements for a new career. In yet other cases, some veterans' goals include learning to be able to work and live independently of others. Importantly, programs that include training and education are often a key factor in achieving occupational aims and, therefore, a focus on effective policy is necessary. This study examines a specific program that addresses the aforementioned goals, which is the

[1] Gulf War-Era II veterans are those who have served anywhere in the world since September 2001 (www.bls.gov/news.release/vet.t09.htm).

Vocational Rehabilitation and Employment (VR&E) Program, and focuses on what characteristics contribute to veterans' attrition from the program.

It must be noted that attrition does not always indicate program failure. In fact, withdraw from voluntary programs could be a matter of rational choice. For example, there are veterans who may find jobs on their own and discontinue the program because they no longer require its benefits. Data on the VR&E program does not include information on the reasons why participants leave, yet what does exist can be used to draw some tentative conclusions about the choices participants make at the time they make them. My analysis is intended to draw awareness to a set of preexisting variables that are related to the choice to drop-out, so further analyses can be conducted to potentially improve chances of success for all participants.

## BACKGROUND: THE CREATION OF THE VR&E PROGRAM

Since the implementation of the Vocational Rehabilitation Act of 1918 U.S. government programs have assisted disabled veterans acquire the essential skills and knowledge necessary for succeeding in a competitive labor market. Initially, the Federal Board for Vocational Education provided these services, but is now under the purview of the U.S. Veterans Administration.

Throughout the years rehabilitation and educational programs for veterans have expanded and, merged together to what is now called the Vocational Rehabilitation and Employment (VR&E) VetSuccess Program in 1999. This was authorized by Congress under Title 38, Chapter 31 Code of Federal Regulations and aims to help veterans who have service-connected disabilities become employed, maintain employment, or achieve independence in daily living (U.S. Department of Veterans Affairs 2012). The program is administered by the Veterans Benefits Administration (VBA) of the Department of Veterans Affairs (VA) and now has the

largest out-based network of service delivery points of those in the VBA (U.S. Department of Veterans Affairs 2011). The VR&E also works with organizations such as the Department of Labor and the Department of Education.

Over time there have been revisions made to the VR&E to redefine successful rehabilitation. Prior to 1980, completion of the training program was deemed a suitable measure of success regardless of whether or not there was actual job placement. While it is now not considered to be a success until one is, in fact, employed, success is defined at 60 days of employment.

## THE FIVE-TRACK SERVICE DELIVERY SYSTEM

There are five different tracks in the VR&E Program which participants are enrolled depending on their needs, qualifications and interests. The tracks are organized in a more straightforward fashion than previously. These are the re-employment track, rapid access to employment track, self-employment track, employment through long-term services track, and the independent living services track. Tracking is determined according to the types of current skills transferrable to the workforce, the extent of disabilities, and how disabilities may potentially affect their working capabilities. In addition, vocational tests are occasionally administered in the tracking process as well.

The purpose of the re-employment track is to help veterans return to their place of employment prior to enlistment/deployment. In addition, the track offers participants the opportunity to meet with new potential employers and arrange job accommodations and job modifications. The rapid access track assists those enrolled with writing their resume and searching for employment. This is quite useful for veterans, as the relevance of the skills gained while serving can be difficult to place on their resume in terms employers can appreciate. The

self-employment track is for those whose disability limits their ability to attend a standard place of work. It provides the necessary knowledge and support, such as marketing and financial assistance, for starting a business. Upon obtaining the essential resources, veterans have the opportunity to open their own place of employment, allowing them to be more productive in a more comfortable work environment.

The employment through long-term services track provides training and/or education that is useful for those seeking long-term careers. In this program there are resources available such as apprenticeships and internships, work-study opportunities and higher education that may be necessary in particular fields of employment.

Unlike the other tracks, the independent living (IL) services track helps veterans whose disabilities are so severe that they must accomplish additional goals, and, in some cases, employment training may not even be a possibility. Areas of achievement include attaining the ability to perform daily responsibilities and development of the emotional capability strong enough to allow disabled veterans to function in the presence of others. It also offers peer control, consumer control and help making important decisions. Veterans in the IL track will also be supplied with an assortment of equipment, such as wheelchairs, that may be required for their independent physical function to occur. According to the Government Accountability Office (GAO), the independent living service was the most successful track in 2008 (U.S. Government Accountability Office 2009). The VR&E also provides comprehensive evaluation, medical referrals, subsistence allowance, tutoring, tuition and book fees, and counseling and guidance.

WHO IS ELIGIBLE FOR THE VR&E?

For veterans to be eligible for the VR&E they are required to have been in the active military or naval service after 1940, discharged under circumstances that were not dishonorable, have a disability incurred by service for which a pension is payable under laws administered by the VA and in need of vocational rehabilitation to overcome the handicap caused by such service-connected disability (Scott and Davis 2011). There are also benefits and services available to eligible family members of those in the program.

An additional condition for qualification is determined by the veterans' score on the VA Diagnostic System, in which the levels of medical and psychiatric disorders are rated to establish whether or not there is an employment handicap. A listing of conditions is prepared, such as difficulties in understanding complex commands or experience of hallucinations, which is then evaluated and ranked using the standard percentages of 0%, 10%, 30%, 50%, 70%, and 100% (Vietnam Veterans of America 2012). A minimum of 10% service-connected disability rating is required – or a memorandum rating of at least 20%. However, in some cases there is a possibility of acceptance being granted to those who do not meet these limits. Under these circumstances a Vocational Rehabilitation Counselor (VRC) must conclude that the veteran has a serious employment handicap and the extent of their disabilities is great enough to interfere with labor.

There is a twelve year time limit within which a veteran is able to utilize the service of the VR&E. This time begins from the time they are separated from their active military service or the date they were first notified by the VA of a service-connected disability rating (Scott & Davis 2011). The GAO stated that it has been determined that the average number of years

between a veteran receiving an initial disability rating and applying for VR&E services declined from 7.9 years in 2002 to 6.1 years in 2007 (Veterans Benefits Network 2009).

For those who do not meet the enrollment criteria a VRC counselor will inform them and provide information on other possible options such as their right to appeal, and furnish them with lists of additional useful programs including the State Vocational Rehabilitation programs and the Department of Labor's Disabled Veterans' Outreach Program (Scott & Davis 2011).

## STATEMENT OF THE PROBLEM

Veterans returning from duty, especially those with physical and/or mental disabilities, often have numerous difficulties including finding steady employment. This includes veterans whose disabilities are so severe that working is not an option and the goal is to achieve living independently. Veterans have served our country and it is only reasonable that they receive reliable assistance when needed. Programs such as the VR&E are often a key in acquiring employment that matches their needs, qualifications and interests. The VR&E is significant for those with no work experience prior to enlisting in the military. One reason research in this area could be beneficial is that it could provide insight into specific types of additional counseling for completion.

## PURPOSE OF THE STUDY

This study aims to identify predictors of dropping out of the Vocational Rehabilitation and Employment Program. With the use of data from the 2007 VERS Survey, veterans enrolled in the VR&E between 2004 and 2005 will be analyzed to determine probabilities of dropping out of the program. This research could contribute to the improvement of the VR&E Program.

## RESEARCH QUESTIONS

Because approximately two-thirds of those in the VR&E will never complete the program and obtain employment, participant characteristics will be analyzed to determine if there are patterns for those who do and do not succeed at different stages in the program. Findings will be analyzed according to rational choice theory, which assumes that people make choices that maximize their benefits and minimizes costs. My research intends to answer the following questions: Does type of occupation affect attrition and drop-out of the Vocational Rehabilitation and Employment Program? Does self-reported health play a role in program completion? Does self-efficacy impact success? Does marital status affect completion? Does number of dependent children impede success? Is gender related to completion of the program? Does race influence whether or not a participant is successful?

## HYPOTHESES

My first hypothesis is that white collar workers will have a greater tendency to complete the program than blue collar workers. My second hypothesis is that veterans with better self-reported health from injuries will be more likely to succeed. Next, I hypothesize that those with higher self-efficacy will have a greater probability of program completion. My fourth hypothesis is that veterans who are married will be more likely to complete the program than those who are separated/divorced or widowed. My fifth hypothesis is that as the number of children increases, the rate of program completion will decrease. Next, I hypothesize that there will be lower levels of attrition and dropout for females and that whites will be more likely to complete the program.

## SIGNIFICANCE OF THE STUDY

A more detailed analysis of the VR&E program may lead to better policy implementation of the program for the future. More generally, this may provide us with a greater understanding

of the social factors that lead to program dropout at different stages in the program. A thorough examination of issues such as participant health, self-efficacy, marital status and employment at the time of enrollment in the VR&E program could provide information to facilitate future studies on attrition and dropout. The VR&E was created to help disabled veterans with employment and if there are many who never reach the completion point, changes to the program may be required to fulfill the program's goals.

LIMITATIONS

The main threat to external validity was with the gender and race variables, as there were a small amount of females, "other race" and "multiple race" groups included in the survey population.

Threats to internal validity within this study stem from missing data on variables analyzed. Many questions in the VERS Survey were not answered due to skip patterns in the data. For example, if subjects answered "No" to the question "Were you employed at the time of application?" they also did not answer four following questions. However, because of the survey size and breadth, it was possible to utilize for this research.

# CHAPTER II

# LITERATURE REVIEW

This section will review previous literature regarding characteristics of veterans who are unemployed and have difficulty finding employment. Included in this review is research on previous employment, self-reported health, severity of physical pain, education, marriage, children, gender and race that may impact dropout. Rational choice theory will be employed to theorize why some veterans will be more likely to complete the program than others. More specifically, use this review of the literature to theorize how social location creates rational choices for individuals that are not rational for the system. I set the stage for a focus on social location's impact on the decision of rational actors to dropout, which differs from the prominent focuses on programs found in existing literature. This review also provides information concerning inadequacies of the Abt. Associates VERS survey, and a task force created to evaluate VR&E productivity and determine possible areas in need of improvement. Difficulties such as post-traumatic stress disorder that veterans are faced with upon returning from duty are also presented.

## VR&E PROGRAM EVALUATION TASK FORCE

The Vocational Rehabilitation and Employment Program provides veterans with vocational counseling and evaluation, case management, education and training, job placement assistance and independent living services. A task force was structured in 2004 by the Secretary of Veterans' Affairs to assess the progress of the VR&E and provide recommendations to Congress and the GAO. Many have argued that the VR&E is not a priority of the Veterans' Benefits Administration (VBA) and more needs to be done to make sure it is as productive as possible (U.S. Government Accountability Office 2005). While the VR&E acknowledges that

there are many future improvements that should be made, their reported outcome rates are not far from the annual goals set by the program in spite of the dilemmas currently impairing its total possible achievement. The reported rates and annual goals are, respectively, 62% and 67% for FY 2004; 63% and 66% for FY 2005; 73% and 69% for FY 2006; 73% and 73% for FY 2007; 76% and 75% for FY 2008 (U.S. Government Accountability Office 2009).

There had been suggestions by the GAO that not enough concentration was paid to employment, as education was the main focal point of the system (U.S. Government Accountability Office 2005). Making sure that the veterans enrolled succeed in a timely manner was also stressed (U.S. Department of Veterans' Affairs 2011). It was also complained that tuition, subsistence and other expenses were provided to those enrolled in the education and training section, whereas there were no special incentives offered to participants in the employment section (U.S. Department of Veterans' Affairs 2011).

The task force operated by performing fact-finding sessions, field visits and analyses of previous studies and reports on the VR&E Program; program staff was also encouraged to give comments (VA Vocational Rehabilitation and Employment Task Force 2004). While there is room for advancement, the task force did observe many encouraging things within the VR&E when performing their studies. For example, it is believed that this program does a great job with their limited amount of supplies and leadership.

When the task force began its inspections there were three service tracks offered, which were rehabilitation and employment services; job ready services; and independent living services. The task force advised the GAO that the VR&E would be more productive if a new structure was developed, which is when the five-track service delivery system was introduced. It was agreed that the program does need more supervision in the central office, and 54 percent of

all 57 regional offices in the country declared that they did not have enough VRC counselors and 40 percent said they have fewer employers than needed (U.S. Government Accountability Office 2009).

The time between when a veteran applies for VR&E services and when their training and education actually begins is another area believed to be unacceptable. This is due to the fact that a considerable amount of information must be processed, followed by many additional tasks. Validation of entitlement, assessment of needs, skills and interests of the applicant and authorization of the training or education program are among some of information gathered (Neulicht 2010). This is upsetting to members of the VFW, who have stated that upon being deemed eligible a veteran should immediately be entered into the program; their skills and interests could be used later while completing their track to help direct them toward the right area of employment, and not act as a pre-qualifier (Neulicht 2010).

Another problem discovered by the task force is the average amount of time veterans are in the Job Ready status, which is how long it takes them to find employment after program completion and become stable in their job for at least sixty days; this was 198 days (U.S. Department of Veterans' Affairs 2011). It has been mentioned that to help servicemembers find jobs faster, concentration should be placed on veterans' abilities, rather than their disabilities (VA Vocational Rehabilitation and Employment Task Force 2004).

## DIFFICULTIES UPON RETURN

Most veterans will have an assortment of matters they must deal with upon their return and for years following, including physical and health complications such as post-traumatic stress disorder (PTSD). These problems are prevalent in the men and women who have completed their service in Operation Enduring Freedom (OEF) in Afghanistan and Operation

Iraqi Freedom (OIF) in Iraq. Studies of 289,328 OEF/OIF veterans from April 1, 2002 to March 31, 2008 illustrated that 14.6% were diagnosed with PTSD within one year of returning; after two years, this number increased to 20.3% and after four years the number had nearly doubled (27.5%) from that of one year (Seal et al. 2009). It was noted that this study was limited in that it included only those who use the VA health care system; however, because the number of those enrolled has increased to over 40%, this may assist with the accuracy of these statistics (Seal et al. 2009). Other issues that veterans with disabilities must deal with include low pay when they are able to find employment, poor access to public facilities and transportation, inadequate health insurance and the inability to work as many hours as their non-disabled counterparts (Schartz, Schartz and Blanck 2002). The Vocational Rehabilitation and Employment Program is one of the most valuable resources a veteran can utilize under these circumstances, making it important that it is closely analyzed to guarantee it is as effective as possible.

## RATIONAL CHOICE THEORY

Rational choice theory proposes that individuals will act in ways which they believe will be beneficial to them and refrain from doing things that may produce negative outcomes (Scott 2000). According to this theory, all action is rational and people weigh the outcomes of diverse courses of actions they may be able to take and determine which may be the most beneficial for them (Scott 2000). It can be reasonably theorized that some applicants will believe the VR&E program will be more beneficial to them than others, providing greater motivations for them to finish. This supports the suggestion that attrition and dropout rates will be lower for veterans that believe the program will be more advantageous. Similarly, our knowledge of stratification suggests that a program's benefits will differ, in perception and in material objectivity, for

different groups. Therefore, we can assume that patterns of dropout will emerge according to different social locations.

While rational choice theory seems fairly straightforward and this should be exactly what every person follows, there are some issues that make it appear somewhat unclear. For instance, while people may gather and evaluate information concerning personal choices before they make them, this does not indicate that their planning is always logical and rational, resulting in decisions regarding that may not be the best for them (Paternoster and Pogarsky 2009). Similarly, it can be noticed that people engage in activities that benefit organizations that may or may not benefit themselves, which seems to go against what rational choice implies, and this seems to fall under collective action (Miller 1992). Finally, people make decisions that benefit themselves, but undermine the organizations or institutions that they belong to. This social dilemma is most clear in the example of individual exploitation in the tragedy of the commons.

Rational choice theory may be able to help understand the participants' completion rates in relation to the types of their occupations. The theory claims that constraints on the amount and type of resources available motivate to people affects the choices they make (Ermakoff 2010). Veterans who experience constraints due to structural issues such as those stemming from gender and level of disability may have greater difficulties finding employment without assistance from the VR&E and be more likely to continue in the program. Similarly, social groups with fewer constraints, such as men and employed, on a satisfying outcome in their search for employment may positively impact dropout rates. People seeking work in some professions may believe that attending a training program for a short time is all they need to get the necessary benefits out of it (Paul 2002). For instance, it is a possibility that in addition to those who are unemployed, blue and other non-white collar workers may feel that staying until they finish would not be worth

their time; opting to stay in the program only until they can transition jobs. In this way rational choice theory could also explain why veterans who are healthier may be better able to perform the necessary duties and responsibilities of the program, resulting in greater probabilities of success. Participants who are not as healthy may find the program too overwhelming and completion may not be an option. Studies have shown that there are numerous factors for those who are disabled which affect whether or not they reach the finish line, such as the type and severity of their disability and their cognitive function (Yonghong & Martz 2009).

Self-efficacy can also be examined through the lens of rational choice theory as it impacts the choice making process. When searching for work, generally, a person with higher self-efficacy will be more likely to persist in efforts to find employment. Similarly, the further along a participant makes it in the VR&E program, the more likely they will be to finish, as it proposes that behavior is performance-based and successful performance replaces symbolically based experiences as the main means of change (Bandura 1977). In addition, individuals with higher self-efficacy are more likely to obtain employment with higher wages than those who have lower self-efficacy (Hogue, DuBois and Fox-Cardamone 2010).

Rational choice theory can be used to examine the effects of marital status on completion rates for the VR&E program. There are many aspects that marriage has on a person's life, such as financial issues and the amount of time available to be spent on training. Maturity levels can also be related to marital status, as those who are single are often younger and therefore, less mature and have fewer resources, which can impact program completion. Studies have also shown that students who are married also have higher learning objectives (Lynn, Robertson-Backmon 2006).

The number of dependent children that participants have can be incorporated into a rational choice explanation for their reasoning on whether or not they complete the program. Today, more parents are going back to school because of accessibility of education and resources such as childcare opportunities in their areas. As the number of children increases, the financial needs of these parents likely increases as well which may increase the incentive for completion. Conversely however, despite the resources that daycare centers provide, other constraints of parenting may still adversely impact program completion.

Rational choice can be used to theorize why women may be more likely to finish the training programs, as they add greater weight to the value of training programs in their search for a successful career. For instance, women often earn less than men for the same positions and have lower levels of career employment. A study by Reaney (2012) showed that women employed in industry received smaller project assignments than men, which is what determined employee advancement in the positions studied. Men were also more likely to oversee larger teams, have roles with greater critical responsibility and manage larger budgets (Reaney 2012). A survey performed on 439 senior women executives in 1992 found that 93% of them believed that there is a glass ceiling for women in the workplace who are trying to become employed in upper management (10 Surprising statistics on women in the workplace 2012). Women who want to advance may view training programs as a critical benefit in advancement in comparison to men.

Race is another characteristic that can be looked at using rational choice theory when examining the completion rates of participants. This is often a factor that those searching for jobs take into consideration when deciding the types of occupations and places of employment they will be able to become hired and will be happy with. Although racial discrimination is a

violation of the Civil Rights Act of 1942, 42 U.S.C. § 2000e (U.S. Equal Employment Opportunity Commission n.d.), it happens frequently enough that it can have an effect on whether or not numerous people get as high as they expect throughout their career.

## WHY PARTICIPANTS TEND TO DROP OUT OF SOCIAL SERVICE PROGRAMS

Attaining employment is one of the most essential elements that will determine the stability and satisfaction with returning veterans' lives, among many other areas. The decision to leave a program such as the VR&E may seem irresponsible. To some, it could look as if those who dropout are careless and should have put more effort into their training. Others may believe that program participants feel that the program is unproductive and they would do better on their own. For those enrolled, dropping out of the VR&E should be a very difficult decision to make, as the end result could have a large impact on the quality of the rest of their lives. Choosing to participate in the VR&E program can indicate that a veteran is a responsible person willing to make an effort to find employment. However, there are many factors that influence whether or not fulfilling this obligation is possible that are invisible to VR&E counselors, as well as outsiders who simply see these participants leaving the program.

## SOCIAL LOCATION AND RATIONAL ACTORS

Many studies and literature address the fact that more should be done to help the current veterans' assistance programs. While it has previously been mentioned that there may be reasons for dropout that may not be due only to problems within the programs, these discussions have been minimal. For example, although the U.S. Government Accountability Office has mentioned that some veterans may not finish a program because of personal problems such as medical disabilities; little has been done about it (U.S. General Accounting Office 1992). When it came time for evaluation and revision of the VR&E program the Secretary of Veterans Affairs

focused on improving relations with the Department of Labor, state rehabilitation agencies and private rehabilitation agencies to increase the outcomes of success (U.S. General Accounting Office 1992). These efforts were done at the expense of focusing attention on how individuals' interactions with programs impact their choices of dropout. Having data and research available on the relation between program and individual may make more beneficial program changes that increase in completion rates. In reviewing performance standards, it could be advantageous to include the demographic information of these participants to discover possible similarities between those who finish and those who do not.

Currently, there are no studies of the VR&E program that conceptualize participants as rational actors that focus on social location as a predictor of dropout. The following sections review different indicators of social locations in regards to rational choice in the VR&E program.

TYPE OF EMPLOYMENT

Finding employment in the United States since the recession of 2008 can be difficult for anyone, but especially veterans with mismatched, little, or no experience, skills, or education. Due to issues such as globalization and mechanization, unskilled labor, such as manufacturing, has moved overseas (Fisman 2012). This makes it difficult for blue collar or other occupation workers to find employment when so few opportunities exist. In today's job market a growing number of occupations require higher levels of education than ever before. Of the 1.5 million to 2 million jobs created since the economy began recovering, most of these have been "high-skilled" and some employers complained of not being able to find the right talent (Hirsh and Johnson 2011). This makes the Vocational Rehabilitation and Employment program particularly valuable to those veterans with disabilities who have never worked before serving in the military. Assistance for veterans with no prior employment experience can be the first step in getting a

job, regardless of what type of position they are looking for, and the VR&E can be valuable for veterans in all fields. Attention to the previous employment status of veterans who successfully complete the VR&E program may help direct curriculum and services that will impact the success for a greater number of veterans.

## SELF-REPORTED HEALTH

A veteran's physical condition can be a component in determining whether or not they are able to work. Of veterans with a serious service-related injury, approximately half stated that their health status was either "only fair" or "poor" compared to only about one-third of non-injured veterans (Morin 2011).

This research also showed the likelihood for getting and keeping a job decreased as the severity of veterans' disabilities increased (Morin 2011). Understanding how self-reported health impacts program completion in the VR&E program may provide direction on increasing program success.

## MARRIAGE

Marriage is considered to be a strong form of social support (House, Umberson and Landis 1988). For instance, speaking with one's spouse about their individual goals can be psychologically helpful (Holmes 2011). Similarly, ties to the family provide motivation and maturity finishing educational pursuits (Yess 1981). Additionally, latent financial factors of marital status, such as a second income, likely influences employment choices. By looking at the effects of marital status on VR&E completion, this could be useful for future research on these topics to decrease the attrition and dropout rates.

NUMBER OF CHILDREN

For veterans who are also parents, ensuring that their children are cared for is a task that takes time, effort and financial resources, which can strain on educational and employment aspirations. It is expected then that veterans with more dependent children would have less resources available to complete the VR&E program. Child rearing can be especially problematic for women veterans, as societal trends still demonstrate that they are burdened with the lion's share of child rearing. When women have young children, they often work less paid hours than fathers do, as 40% of mothers are not in the paid labor force at all, 17% work part-time, with less than four percent of comparable fathers working part-time (Webber and Williams 2008). Because of this, it is assumed that the duties and tasks of the VR&E program would interfere with the numerous responsibilities of parenting, leading to greater attrition and dropout rates for those with higher numbers of dependent children.

Having a first child can cause some women who are already employed to exit the labor force. For instance, Hotchkiss, Pitts, and Walker (2010) found that the birth of a child was the reason for roughly one-third of women exiting the labor force. Their research also shows that women who are married and have a college degree are more likely to quit their jobs than those who are single or only have a high school degree (Hotchkiss, Pitts and Walker 2010). Children could be a factor that improves completions for some parents who enter the VR&E, as they may be looking to gain training and/or education after exiting the labor force in the past. Yet, it may also be that children are a factor for non-completion, as they place a strain on time and resources needed for completion. Children are a large part of their parents' lives, and, may require a large amount of their resources. In providing these to their children, this may take away from what they have available to themselves, making their employment and/or education difficult.

Learning whether or not this is problematic could be advantageous to determine if there is anything that could be done to assist veterans enrolled in the VR&E to assure that more who are enrolled will be successful.

GENDER

Gender difference in norms can impact veterans' search for employment and education. For instance, gender is often seen as a quality affecting many elements of employment, such as type, income, and whether or not a probable employee gets hired at all. The 2010 Census reports show that women's earnings were 77.4% of men's earnings in 2010 and 77.0% in 2011 (National Committee on Pay Equity 2012). Women are also more likely to complete other sources of schooling such as college, which was observed in a study by the National Center for Education Statistics, showing that in the 2003 freshman class at four-year colleges, 60 percent of women, vs. 55 percent of males graduated within six years (Aliprantis, Dunne and Fee 2011). As for the types of degrees, women are more likely to succeed in receiving degrees in all three of the higher-education categories – associate's, bachelor's and graduate (Aliprantis, Dunne and Fee 2011). With completion results of these educational services, it should be expected that a higher number of female veterans will finish programs such as the VR&E, as well.

Despite their higher achievements in education, females are less likely to be employed than men, make less income, and are more likely to work part-time jobs (Leonesio et al. 2012). Yet, many of the jobs lost during the recession are in divisions that employ a higher quantity of males, such as in the goods-producing area, making the VR&E a resourceful program for male veterans previously employed in these areas, as well (Morris et al. 2010). Examining variations in the VR&E due to gender could be useful to discover areas where there may be issues with

completion, as it can be seen that there are many reasons suggesting that limiting the amount of attrition and dropout rates for female veterans would be very beneficial for them.

## RACE

Racial discrimination of African Americans and Hispanics in the United States can make many matters more difficult in obtaining employment. This can be seen by the unemployment rates for 2009, which were 15.4% for African Americans, 12.4% for Hispanics and 8.6% for Whites (Atufunwa 2010). Particular causes for this can be due to employers soliciting applications only from sources in which most of the probable candidates for the open positions are of the same race, requiring specific educational backgrounds not necessary for job performances and testing applicants for knowledge, skills or abilities that are irrelevant for the position applied for (U.S. Equal Employment Opportunity Commission 2008).

In addition to obtaining a job, once an African American or Hispanic veteran finds a job, there is the possibility that they will have problems with discrimination at work. In 2009 the U.S. Equal Employment Opportunity Commission reported that there were 34,137 charges that were race-based (Burford 2010). Minority veterans must deal with issues of racism in employment markets and it may be the case that completion of the VR&E ensures that these find a job. Conversely, discrimination may be a factor within the program as well, which could negatively impact completion rates for minorities.

## INADEQUACIES OF THE VERS SURVEY

While the Abt. Associates acknowledges particular limitations in the study constraints section of their report, such as utilization of data from 2004 and 2005, nothing is mentioned regarding issues such as insufficient data collection in areas such as race of participants, which did not allow for accurate statistical analysis. For example, question S12Q02 in the VERS

survey allowed subjects to select one or more choices to obtain their race. The options included White, Black or African American, American Indian or Alaska Native, Asian, Native Hawaiian, Other Pacific Islander, HISPANIC/MEXICAN, and OTHER. Permitting subjects to select more than one of these options prevented precise percentages of participant race to be calculated in assessment. To solve this problem, White, Black, Other Race, and Multi-Race variables were analyzed with collinearity diagnostics in my study to evaluate participant race information.

My first hypothesis is that white collar workers will have lower attrition and dropout rates than blue collar workers. My second hypothesis is that veterans with better self-reported health will have greater probabilities of program completion. Next, I hypothesize that those with higher self-efficacy will be more likely to succeed. The fourth hypothesis is that veterans who are married will be more likely to complete the program than those who are separated/divorced or widowed. My fifth hypothesis is that as the number of children increases, attrition and dropout rates will increase, as well. Next, I hypothesize that there will be lower levels of attrition and dropout for females and that whites will be more likely to complete the program.

# CHAPTER III

# METHODS

The 2007 Veterans Employability Research Survey (VERS) conducted by the Abt. Associates Inc., for the Department of Veterans' Affairs was used for testing the hypotheses in this study. The logic for choosing the VERS survey to perform this research is its strong relation to the hypotheses. Several questions in this survey allow for appropriate operationalization of the variables, making the data practical for testing my hypotheses. The large sample size helps offset any challenges with random error, and also allows for complete multivariate analysis. A description of this secondary data set is provided below to illustrate the information that was selected for the study. Information regarding the dependent and independent variables and data analyses will also be discussed.

## INSTITUTIONAL REVIEW BOARD APPROVAL

Because a survey was used in this research it was necessary to obtain authorization from the Indiana University of Pennsylvania Institutional Review Board (IRB) for the Protection of Human Subjects. This was done because the university observes federal regulations when research includes human subjects. An application was sent to the IRB including information regarding the purpose of this study, the methods and procedures that would be used, and it was stated that there would be no potential risks in this study. It was also mentioned that this study may be beneficial in that it could lead to better policy implementation for the VR&E program. The VERS survey is publicly available secondary data and permission to use the data was granted by the IRB and it was expedited.

## RESEARCH DESIGN

The 2007 VERS survey was performed at the request of the VA to discover issues that may influence veterans' employability resulting from their participation in the VR&E, and the differences between those who dropout and those who complete the program. (Abt. Associates Inc. 2007). This survey was also to be used to revise the National Survey of Veterans, as well as raise the number of participants who are able to finish the VR&E (Abt. Associates Inc. 2007). Information from VERS final report on subject selection is listed below:

> The [nationwide] sampling frame of 82,981 individuals was limited to veterans who had a disposition of completed, interrupted/discontinued, or actively participating in the VR&E Program between January 2004 and November 2005, as specified by the VA. The three eligible dispositions were identified by the Veterans' Administration and Abt. Associates. The 23-month time period ending in November 2005 was selected by the Veterans' Administration and Abt. Associates to allow sufficient time for veterans to complete or terminate their participation in the VR&E Program before the conduct of the survey in 2007. (U.S. Department of Veterans Affairs 2008:25)

The nationwide sampling frame contained 80,875 veterans after the duplicate data records, deceased veterans and veterans not residing in the United States were removed from the data files by Abt. Associates (U.S. Department of Veterans Affairs 2008). Telephone interviews were performed on 5,000 sampled veterans, with 1,000 interviews for each cohort; veteran names, addresses and phone numbers were provided to Abt. by the VA (U.S. Department of Veterans Affairs 2008). The VA sent advance letters informing participants of the intentions of the survey and what the collected data would be used for, as well as a letter from Abt. Associates to give details on the methods that they would utilize for contacting veterans; two screener questions (confirmation of name and date of birth) were asked to ensure that the interviewer was speaking with the sampled veteran (U.S. Department of Veterans Affairs 2008).

Pre-notification letters were sent to the sample, providing information such as the purpose of the survey and how much time this voluntary interview would take, as well as toll-free telephone numbers these veterans could call for additional information (U.S. Department of Veterans Affairs 2008).

## INSTRUMENTATION

There are two main sections of the survey, one of which is based on cohorts, and the other on sets of variables regarding personal experiences and background characteristics that are relevant to all cohorts; depending on which cohort the veteran last completed is the deciding factor on which questions they will be asked (U.S. Department of Veterans Affairs 2008).

The questionnaire was divided into sections as follows: introduction; current status in VR&E Program; application process; evaluation process; planning phase; rehabilitation and training; job preparation and placement; overall experience; reasons for discontinuing program; military/employment background and status; health status; self-efficacy; demographic (U.S. Department of Veterans Affairs 2008).

## POPULATION OF THE STUDY

The population of the study is 5,031 veterans throughout the United States who were enrolled in the VR&E between January 2004 and November 2005. The age of these veterans was 18 and older. Categories of Ethnicities in this study are White, Black, "other race" and "multi-race." Because of the low number of respondents in categories other than White or Black, the "other" and "multi" classes were created, which included participants from groups with low representation. Both male and female subjects were included.

MEASURES

There were many questions from the 2007 VERS survey related to the focus of this study. I used the questions in the following section because they gave me the least operationalization of the variables to test my hypotheses.

*Dependent Variables*

*Self-reported completion.* Completion of the program was measured by response to the question, "Did you complete the VR&E Program?" (Abt. Associates Inc. 2007:B-9). I coded it as 0 = dropout and 1 = complete.

*Dropout at application stage.* Dropout at application stage is a binary variable created for those respondents who were determined to have ceased attendance before first meeting with VR&E program service provider. I coded the variable as 0 = No Dropout and 1 = Dropout.

*Dropout at evaluation stage.* Dropout at evaluation stage is a binary variable created for those respondents who were determined to have ceased attendance during the evaluation stages with VR&E program service provider. I coded the variable as 0 = No Dropout, 1 = Dropout and excluded responded who dropped out in previous stage.

*Dropout after evaluation but before rehabilitation.* Dropout at after evaluation but before rehabilitation is a binary variable created for those respondents who were determined to have ceased attendance after completing the rehabilitation evaluation but before the respondent began rehabilitation with VR&E program service providers. I coded the variable as 0 = No Dropout, 1 = Dropout, and excluded responded who dropped out in previous stages.

*Dropout at rehabilitation stage.* Dropout at rehabilitation is a binary variable created for those respondents who were determined to have ceased attendance during rehabilitation with

VR&E program service providers. I coded the variable as 0 = No Dropout, 1 = Dropout, and excluded responded who dropped out in previous stages.

*Independent Variables*

*Type of occupation.* Type of Occupation was a binary level variable that was represented by three dummy variables: White collar (0 = no; 1 = yes); blue collar (0 = no; 1 = yes); other occupation (0 = no; 1 = yes).

*Self-reported health.* Self-Reported Health was measured as two binary variables, which measured physical health and mental health. Each variable was coded as either as a 0 for no limiting mental or physical health problems or a 1 for physical or mental health limitations.

*Self-efficacy.* Self-Efficacy was created by summing how strongly participants rated to each of the following two statements. "It is easy for me to stick to my aims and accomplish my goals." (Abt. Associates Inc. 2007:B-54). "When I am confronted with a problem, I can usually find several solutions." (Abt. Associates Inc. 2007:B-54). For each variable responses were coded as strongly disagree (1); somewhat disagree (2); somewhat agree (3); strongly agree (4). Summed score ranged between 2 and 8.

*Marital status.* Marital status was a binary level variable that was represented by a set of dummy variables as follows: non-married (0); married (1); non-separated/divorced (0); separated/divorced (1); non-widow (0); widow (1); non-single (0); single (1).

*Dependent children.* Number of dependent children was coded as the actual number ranging from 0 to 10. Don't know (97) and Refused (98) were set as missing.

*Gender.* Gender was a dichotomous variable that was coded as either 1: (female) or 0: (male).

*Race.* Race was a dichotomous variable that was coded as 0: non-White or 1: White; 0: non-Black or 1: Black; 0: non-other race or 1: other race; 0: non-multi-race, 1: multi-race.

## DATA ANALYSIS

Examining the variables that may affect attrition and dropout rates among veterans enrolled in the Vocational Rehabilitation and Employment Program is the basis of this research. Collinearity diagnostics will be utilized to analyze the data obtained from the 2007 VERS survey in order to test the hypotheses of this study. The predictions for these variables, which are based on hypotheses stated in the previous section, are as follows: participants who are white will be more likely to complete the program than black and non-black minority participants; women will be more likely than men to complete the program; married participants will be more likely than separated/divorced, widowed and single participants to complete the program; participants with fewer children will be more likely to complete the program; white collar workers will be more likely to complete the program in comparison to blue collar workers and other collar workers; those with better self-reported mental and physical health will be more likely to complete the program; and those with greater self-efficacy will be more likely to complete the program.

I ran ordered least squared regressions and collinearity diagnostics on self-reported completion, dropout at application stage, dropout at evaluation stage, dropout after evaluation but before rehabilitation, and dropout during rehabilitation stage, using SPSS 19 software. In addition, univariate statistics were computed for each of the independent and dependent variables.

# CHAPTER IV

## FINDINGS ON ATTRITION AND DROPOUT RATES

This chapter thoroughly describes the research performed on the hypotheses of my study. The research questions of this study include the following: Does type of occupation affect attrition and dropout of the Vocational Rehabilitation and Employment Program? Does self-reported health play a role in program completion? Does self-efficacy impact success? Does marital status affect completion? Does number of dependent children impede success? Is gender related to completion of the program? Does race influence whether or not a participant is successful? Univariate analysis will be used to review the results of my study. In the next chapter the outcomes of this study will be discussed in greater detail.

### UNIVARIATE ANALYSES

#### *Dependent Variables*

Table 2 of the Appendix displays descriptive statistics, which show the mean frequencies of participant information. Self-reported program completion was achieved by 24.3% of veterans in the VR&E Program. Whites will be compared to blacks and other non-white races; females will be compared to males; comparisons of the number of dependent children will be made; married participants will be compared to those who are single, separated/divorced or widowed; participants who stated that they are limited because of their physical or mental health will be compared to those who stated they are not; white collar workers will be compared to blue collar workers and those in other occupations; self-efficacy comparisons will be made.

#### *Independent Variables*

Sample means are shown in Table 2 of the Appendix for characteristics of program participants. The mean score of black participants was 24% and other races had a mean of 16%.

The mean number for female participants was 16%. The mean number of dependent children that those in the program had was 1.22 (SD=1.30).

76% of participants self-reported physical health limitations 76% and 33% self-reported mental health limitations. Unemployed enrollees comprised 58%, while blue collar and other collar workers comprised 15% and 17% respectively. The mean number for self-efficacy was 6.68.

My first hypothesis is that white collar workers will have higher completion rates than blue collar workers. My second hypothesis is that veterans with better self-reported health will have lower attrition and dropout rates. The third hypothesis is that higher levels of self-efficacy will result in greater levels of program completion. Next, I hypothesize that participants who are married will be more likely to successfully complete the program than those who are separated/divorced or widowed. My fifth hypothesis is that attrition and dropout rates will increase as the number of dependent children increase. Last, I believe that there will be lower levels of attrition and dropout for females and whites will be more likely to succeed.

## LOGISTIC REGRESSION ANALYSIS

I tested my hypotheses of the preexisting factors that may impact institutional dropout of the VR&E program using five logistic regression models that represent differing time-ordered programmatic stages of the rehabilitation process. Models 1-3 correspond with early stages of the program whereby participants are evaluated by VR&E specialists to determine the appropriate rehabilitation track they will pursue. These models (Model 1) "Applied," (Model 2) "Left During Eval," and (Model 3) "Completed Eval Then Dropped" are interpreted as corresponding to progressive ordinal time measures within the evaluation stage of the program with Model 1 being the earliest stage and Model 3 being the latest stage where dropout occurs. Model 4 ("Left

During Rehab") and Model 5 ("Self-Reported Completion") correspond with later stages of the program whereby participants are expected to progress and successfully complete the goals (e.g. education, employment training, independent living) for the track which they have been assigned. It is also important to note that there are qualitative differences between stages with high odds of impacting the effects of the independent variables on the dependent variables. For instance, it is probable that evaluation stages will require less effort, time, and resources on the part of the program participant/applicant than rehabilitation stages.

In addition to the models described in this paper, I tested for mediation and moderation of independent variables by sequentially entering them in using a block entry approach for each model. Although this was an important step in determining whether relationships between independent variables existed, I found no additional information of importance for testing my hypotheses. Thus, I present only full models in these results.

I also tested for multicollinearity by running ordered least squared regressions and collinearity diagnostics for each model. I used variance inflation factor (VIF) scores which indicated what variables in the model were most problematic (VIF > 2). Earlier models violated this assumption and an educational status variable was found to have VIF scores higher than advisable (VIF = 14). To remedy this problem I decided to remove this variable from my analysis. The removal of the educational variable does not impact the ability to adequately test my hypotheses because the variable was to be used as an indicator of social class, of which occupational status fits as well.

*Model 1 Applied but Dropped Out Before Initial Appointment*

In model 1 (Applied), the dependent variable indicating dropout at application stage was regressed on all variables within the analysis including race (white referent category), gender

(male referent category), marital status (married referent category), number of dependents, occupation (unemployed referent category), physical health problems, mental health problems, and self-efficacy. The goodness of fit was the lowest of the five models, Cox & Snell pseudo $R^2$ =.011. In comparison to whites, blacks dropped from the program at this point at similar rates. However, non-white minorities had about 30% lower odds than whites of dropping out of the program at this point (OR=.765, SE=.111). In comparison to married individuals, single individuals had about 32% higher odds to drop from the program (OR=1.321, SE=.119). However, no such difference existed in dropout rates between married, separated/divorced, and widowed individuals. Mental and physical health problems did not impact dropout rates at this stage. Employment did have some effects, with decreased odds of dropout for white collar workers of about 25% (OR=.751, SE=.141) in comparison to unemployed participants. No significant difference in dropout rates between unemployed participants and blue collar and other collar workers were found. In addition, for every increase in respondents score in self-efficacy corresponded with a decrease in odds of dropping out by 2.9% (OR=.971, SE=.027).

*Model 2 Left Program During Evaluation Process*

In model 2 which excludes all participants who dropped out during the application stage (Left During Eval), the dependent variable indicating dropout during evaluation was regressed on all variables within the analysis including race (white referent category), gender (male referent category), marital status (married referent category), number of dependents, occupation (unemployed referent category), physical health problems, mental health problems, and self-efficacy. The goodness of fit was increased from the previous models Cox & Snell pseudo $R^2$ =.014. Marital status did have some impact on completion. In comparison to married individuals, those who are separated/divorced had 20% lower odds (OR=.806, SE=.098) to drop

from the program. Blue collar workers had 26% lower odds (OR=.742, SE=.120) to drop from the program and other collar workers had 63% higher odds (OR=1.630, SE=.102) to dropout at this stage than unemployed participants. For every increase in participant's self-efficacy scores, there was a decrease in odds of dropping out at this stage by 56% (OR=.439, SE=.228).

*Model 3 Completed Evaluation Then Dropped Out*

In model 3 which excludes all participants who dropped out during the application stage and during the evaluation process (Completed Eval Then Dropped), the dependent variable indicating dropout after completing evaluation was regressed on all variables within the analysis including race (white referent category), gender (male referent category), marital status (married referent category), number of dependents, occupation (unemployed referent category), physical health problems, mental health problems, and self-efficacy. The goodness of fit was increased from the previous models Cox & Snell pseudo $R^2$ =.039. Gender had an impact on dropout rates at this stage, as females had 33% lower odds of dropout (OR=.674, SE=.116) than males. There was 8% lower odds of dropping out (OR=.923, SE=.033) for every dependent child participants had. The effects of employment were that white collar workers had 45% lower odds of dropout (OR=.547, SE=.149), blue collar workers had 30% lower odds to dropout (OR=.696, SE=.121) and other collar workers had 48% higher odds of dropping out (OR=1.478, SE=.117) than their unemployed counterparts. As respondents' scores in self-efficacy increased there was a 5% decrease in the odds of dropping out (OR=.951, SE=.031).

*Model 4 Leaving During Rehabilitation*

In model 4 which excludes all participants who dropped out during the application or evaluation stages (Left During Rehab), the dependent variable indicating leaving during rehabilitation was regressed on all variables within the analysis including race (white referent

category), gender (male referent category), marital status (married referent category), number of dependents, occupation (unemployed referent category), physical health problems, mental health problems, and self-efficacy. The goodness of fit was the best of the five models Cox & Snell pseudo $R^2$=.116. Race had an impact at the rehabilitation stage, as blacks had 62.5% higher odds of dropping out (OR=1.625, SE=.121) and other non-white minorities had 37% higher odds of dropping out (OR=1.370, SE=.135) than whites. Gender was another variable with effects, as females had 43% lower odds to dropout (OR=.567, SE=130) than males. Participants who were separated/divorced had 42% higher odds of dropping out (OR=1.416, SE=.122) and widowed had 90% higher odds of dropping out (OR=4.902, SE=.541) than those who are married, whereas there was not a statistically significant difference between single and married participants at this stage. Health issues were also a factor for completion of this stage, as veterans with limited physical health had 77% higher odds of dropping out (OR=1.772, SE=.111) and those with limited mental health had 81.5% higher odds of dropping out (OR=1.815, SE=.124) than participants who did not have health problems. Type of employment also had an impact, as white collar workers had 27% lower odds of dropping out (OR=.729, SE=.151) and other collar workers had 55% higher odds of dropping (OR=1.548, SE=.155) than those unemployed. There was not a statistically significant difference between unemployed participants and blue collar workers. For every increase in the respondents' scores in self-efficacy, there was 22% decrease in the odds of dropping out (OR=.783, SE=.041).

*Model 5 Self-Reported Completion*

In model 5 which includes all participants who dropped out during the application, evaluation or rehabilitation stages (Self-Reported Completion), the dependent variable indicating self-reported completion was regressed on all variables within the analysis including race (white

referent category), gender (male referent category), marital status (married referent category), number of dependents, occupation (unemployed referent category), physical health problems, mental health problems, and self-efficacy. The goodness of fit was lower than the previous model Cox & Snell pseudo $R^2$=.073. In comparison to whites, blacks had 34% lower odds to complete the program (OR=.656, SE=.096), whereas the difference between whites and other non-white minorities was not as great. Females within the program had almost 70% higher odds to finish (OR=1.698, SE= .096) than males. Single participants had 26% lower odds of self-reported completion (OR=.743, SE=.131) and separated/divorced participants had 18% lower odds (OR=.815, SE=.097) of self-reported completion compared to married participants. There was not a large difference between married and widowed veterans who reported completion. Veterans with limited physical health had 39% lower odds to self-report completion (OR=.610, SE=.082), whereas participants with limited mental health had 45% lower odds to self-report completion (OR=.552, SE=.101). White collar workers had 66% higher odds to complete than unemployed (OR=1.660, SE=.113), blue collar workers had almost 24% higher odds to complete than unemployed (OR=1.235, SE=.102) and other collar workers had 53% lower odds to complete (OR=.467, SE=.123) than those unemployed. Increases in respondents' self-efficacy scores led to 24% increases on their self-reported completion (OR=1.237, SE=.034).

Table 1. Summary of Findings

| | APPLIED | LEFT DURING EVAL | COMPLETED EVAL THEN DROPPED | LEFT DURING REHABILITATION | SELF-REPORTED COMPLETION |
|---|---|---|---|---|---|
| TYPE OF OCCUPATION | Decreased odds of dropout for White collar compared to unemployed participants | Blue collar less likely and Other collar more likely to dropout than unemployed | White and Blue collar less likely to dropout, Other collar more likely to dropout than unemployed | White collar less likely and Other collar more likely to dropout than unemployed | White collar most likely to complete and Other collar least likely so succeed |
| HEALTH STATUS | X | X | X | Participants with limited physical health less likely to dropout than those with limited mental health | Participants with no reported health problems most likely to succeed, those with limited mental health least likely to complete |
| SELF-EFFICACY | For every increase self-efficacy scores, dropout odds decreased by 2.9% | Every increase in score corresponded with decreased odds of dropout by 28% | As self-efficacy scores increased, there was a 5.1% decrease in odds of dropout | For every increase in self-efficacy scores, there was a 28% decrease rate in odds of dropout | Increases in self-efficacy scores led to a 24% increase on self-reported completion |
| MARITAL STATUS | Singles dropped less than married | Sep/Div dropped less than married | X | Sep/Div and Widowed more likely to drop than married | Singles and Sep/Div had a lower odds of completion than married |
| NUMBER OF CHILDREN | X | X | 8.3% less likely chance of dropout for every child | X | X |
| GENDER | X | X | Females less likely to dropout | Females much less likely to dropout | Females most likely to complete program |
| RACE | Non-White minorites less likely to dropout than Whites or Blacks | X | X | Blacks most likely to dropout, Whites least likely to dropout | |

## SUMMARY OF RESULTS

These results demonstrate that at the time of application, non-white minorities were the most likely to dropout, as well as single participants. White collar participants were the least likely type of workers to dropout at the beginning of the program. Throughout the program, males were more likely to dropout and with increasing self-efficacy scores, dropout rates decreased, as hypothesized. Later in the program, those who were separated/divorced dropped less than married participants. Blue collar workers were less likely and other collar workers more likely to dropout than their white collar counterparts. As expected, success rates were lowered as the number of depends increased. During rehabilitation, blacks and other minorities dropped out at higher rates, as well as separated/divorced and widowed participants. Participants with limited mental health were slightly more likely to dropout at the rehabilitation stage than those with limited physical health.

The hypothesis that the success rate would be higher for whites than black and other non-white minorities was supported from these findings. Female veterans were more likely to complete the program, as expected. It was hypothesized that married participants would be the marital group most likely to finish, which was displayed by the results, and widowed were the least likely to succeed. Evidence showed that as the number of dependent children increased, the dropout rates would also increase. This study showed that as hypothesized, participants who reported themselves healthier were more likely to finish. Participants with higher self-efficacy were expected to have higher completion rates, and results demonstrated that as increases in self-efficacy scores increased, the success rates were also higher. My hypothesis that white collar workers would be the type of occupation most likely to finish was supported, and those who were unemployed had a lower success rate than those who were employed.

# CHAPTER V

# DISCUSSION

There are many participants enrolled in the VR&E who dropout and I've examined an assortment of factors that impact the likelihood of dropout. Veterans in the VR&E are faced with various complications throughout their enrollment which impact their choice to finish. Understanding what groups of program participants are more likely to dropout is essential for potentially keeping more participants in the program.

This study shows the need for administrators to regularly monitor variables of employment, health, self-efficacy, marital status, children, gender, and race for the VR&E program. Certain categories of people who are more likely to make the choice of dropout may need appropriate attention to make their chances of completion more promising. Although this is generally true for all stages in the program, it is especially true once participants enter the rehabilitation stage as indicated by increase in significance of variables and greater explanatory power for the model. For those in groups less likely to finish, it could be useful to implement programs targeting their needs more directly. Although rational choice theory can be used to explain impact of these variables on dropout, further examination of how these variables affect attrition in the program may be useful for future research.

## RESEARCH DISCUSSION

This research provides a greater understanding of participant dropout from veteran assistance programs by focusing more specifically on the demographics of participants in the VR&E program, rather than the program itself. Studies that exclusively focus evaluations on elements of programs are necessary for their improvement. Yet a variety of details of these systems cannot be covered by simply focusing on them. My study examines characteristics of

participants and, using rational choice as a theoretical framework, provides details of who drops out of programs. This type of examination is also beneficial for advancement of program goals.

There are many examples in which the analysis of participants can enrich the development of a more responsive organization. Sometimes it may be found that personal characteristics do not impact program participation. For instance, one study that examined sex offenders found that education levels, employment history, cultural background, marital status and sexual deviancy were not predictors of dropping out (Beyko and Wong 2005). In other studies, like mine, personal characteristics do matter. For example, research on the academic success of nursing students showed that participants with lower self-efficacy were more likely to dropout (McLaughlin, Moutray and Orla 2008). It was hypothesized that those with lower self-efficacy may choose to drop from the program because assignments were perceived to be too difficult to complete. Similar to that study, characteristics of participants in a diabetes self-management program for older people were predictive of choice for program continuation including those who were retired, had greater diabetes related symptoms, and higher rates of self-efficacy (Gucciardi, Demelo, Offenheim, & Stewart 2008). As can be seen from other research and in light of this study, there are common characteristics of participants that should be examined for predictive links to the frequency in dropout of various programs. These links can be theoretically conceptualized as driving factors in the rational choices for dropout and continuation made by participants. This information can be useful to better guide program changes.

Analyzing the sorts of subjects who completed the program with the 2007 VERS survey has helped illustrate the types of veterans who terminate their involvement early. By using the five models in this study it has been displayed that there are groups of veterans who dropout of

the VR&E more than others and at differing times, and plausibly, there could be a better chance for them if program modifications were made to affect choice.

Assessing the different needs of white collar, blue collar and other occupation participants could possibly provide information that would lead to a beneficial modification of the current program that would help blue collar and other occupational workers more. The results of this research show that white collar workers are more likely (OR=1.66) than their blue collar (OR=1.24) and other occupation (OR=.47) counterparts to reach completion. One difference could be that those seeking white collar professions make choices based on their value of job placement, training, and education from the VR&E. Conversely, blue collar and other occupation workers may make rational choices about the trade-off for further training for their particular area of employment and immediate employment. Future research should be performed to more specifically determine the differences between these groups and to more accurately explain the reason for this. If this could be done, there may be a possibility to show modifications or alternative programs that could be developed, making it more likely that a greater number of blue collar and other occupation workers would finish.

Participants with better self-reported health were also recognized as having a better likelihood of finishing the program (OR=1.18) so not surprisingly, it could easily be understood that those with less health problems will be less likely to dropout. The odds ratios for those with physical health (OR=.61) and mental health (OR=.55) limitations present were both negative. If one's physical and/or mental health is poor, they may not be able to carry out their necessary tasks and training, impacting their choice for dropout. For example, those with physical health problems may have difficulties attending sessions or courses because transportation is an issue. If the VR&E could better accommodate people with greater physical and mental health limitations,

more could be more successful. For instance, dropout make decrease for this population if greater efforts for handicap transportation was made available, services were offered online, and rehabilitation sessions were scheduled to not interfere with health related commitments.

As expected, when self-efficacy rates increased, program completion rates increased, as well (OR=1.24). For those who generally felt better about themselves and had a more positive outlook on their goals it was likely they had better views of their possible employment, and abilities to complete the VR&E program successfully. Those with higher self-efficacy rates may have also had better attitudes about their participation in the program. Making greater efforts to speak to bolster self-efficacy at all stages in the program may reduce participants' choice to dropout.

I hypothesized that those who are married would be less likely for attrition and dropout than those who are separated/divorced, single or widowed, and results showed they were somewhat more likely to finish, compared to those separated/divorced (OR=.82), single (OR=.74) and widowed (OR=.49). Choice of dropout may be impacted by additional resources available to married veterans, as there is the possibility that they have extra sources of income and care for any children. Because those who are separated/divorced or widowed are so much more likely to dropout during rehabilitation, it could be useful for counselors to closely monitor non-married participants during this stage.

As hypothesized, females were found to be more likely to successfully complete the program (OR=1.70). Employment programs have the possibility of being very valuable for a number of reasons for female veterans. One probable rationale for this occurrence is the difficulties that many females face when entering into the workforce and that they frequently earn less than their male counterparts, making the VR&E a dependable means of obtaining a

career and they will not consider dropping out to be an option. Those enrolled may believe that the service and support they receive through the program will provide them with the tools necessary to get a job when they have acquired the necessary skills and knowledge for the position they desire, and will do everything they can to finish.

Attrition and dropout rates for males in the VR&E could be higher because they do not believe it will be as difficult for them to find a job on their own. It would be beneficial to inform men enrolled in the program that following through to the end will make it much more likely for them to achieve employment than without the help of the VR&E and there will could also be a wider range of job opportunities available. It may be advantageous for counselors to spend additional time with male participants to make sure they fully understand exactly all of the benefits the program has to offer. Program information could also be provided in separate pamphlets for men and women candidates.

It was also presumed that whites would be less likely to dropout than those in other racial groups, which was confirmed in this study. As can be seen from the significant and negative odds ratio for blacks that they were more likely to dropout than whites, the findings show that race has a negative impact for this group. Results show that with the VR&E, as in many institutions, black men and women are at a disadvantage which may be due to the experience of subtle forms of discrimination within the program that might impact the choice for dropping out. Because of this it could be beneficial if VR&E staff members were educated about providing extra support that may better help racial minorities complete the program. Minorities may need more guidance from their counselor because they often have difficulties in other areas of their lives, such as poverty. The VR&E could also try to create a staff that is more diverse, which could in turn positively impact the program quality for minority participants.

As previously mentioned, the VR&E has the potential to be more productive if the aforementioned variables are monitored regularly by administrators and taken into consideration when making program adjustments. My study shows that some groups of veterans are more likely to dropout than others and it is important to make sure that if the goal is to provide a program that meets the needs of all participants the needs of these groups must be further explored and addressed. Once informed there is the possibility of making adjustments to help a greater number of veterans succeed, such as when the five-track service delivery system was created.

Observations such as those performed by the Joint Work Group are also useful in updating and restoring particular practices and processes performed by the VR&E, showing those that seem to work better and how this could guide future modifications. By seeing that offices whose communications are better also had higher participant completion rates, staff members can get valuable advice to direct them to do things similar to how those in the more productive offices were doing them.

This study shows that there are groups of veterans more likely to have attrition and dropout problems in the Vocational Rehabilitation and Employment Program. Because of this, efforts need to be made so this program can be as productive as it can be, helping all of the different groups that may need it to keep as many veterans enrolled as possible to ensure that they follow through to completion and are able to successfully find employment.

# CHAPTER VI

# CONCLUSION

Veterans who are disabled deserve to be provided with programs providing adequate support for them when they need it to get a job or to reach the ability to be able to live independently of others. In addition to just lending a hand, these programs have to make sure that they are functional enough for those attending to be as successful as they can be.

The Vocational Rehabilitation and Employment (VR&E) program is designed for providing assistance to disabled veterans who need help becoming employed or living independently. This is done through the program's five-track service delivery system to provide the best methods for the participants regarding their specific needs. It is important to be aware of particular groups of veterans that may not be as likely as others to finish, making sure that as many as possible of those who begin are able to complete it.

This study provides information on the characteristics of previous participants that shows that there are a number of features shared by those who dropout early. Blacks and men had higher attrition and dropout rates, and if additional or different help could be given to these veterans perhaps these rates would go down. This could also be done with the blue collar and other occupation workers whose attrition and dropout rates are higher. Those with better self-reported health and higher levels of self-efficacy that tend to do better in the program may not need any changes. Participants with children and those who are separated/divorced or widowed might benefit from future research if it is determined that particular types of assistance may aid them throughout their enrollment in the program until they finish.

In addition to the financial aspects of employment services, the VR&E program also has the opportunity of helping with additional problems that veterans face upon return, such as

readjustment. While in the program, the opportunity to speak with fellow veterans who are members, as well as those who are counselors, allows those who are enrolled to talk with others who may have gone through similar experiences and better understand how they feel after disturbing incidents. While veterans have other resources available to help them handle the troubles they are experiencing they may not always feel comfortable approaching these particular organizations. There is also the possibility that those enrolled in the VR&E program will be more at ease speaking about their stressful situations with people they come to know better throughout their participation.

Readjustment issues include numerous troubles such as anger, depression and post-traumatic stress disorder (Sayers et al. 2009) that can be difficult to overcome. Improving from these problems is not only important for the veterans who are recovering, but their friends and family members, as well. The recovery can improve the quality of life for everyone involved, as those who know the veteran will no longer have to be as concerned about possible problems that may arise due to their readjustment.

## LIMITATIONS

Rational choice theory is just one example for why we can see the dropout of the VR&E participants but other comparable theories could also explain why variations are seen in dropout patterns. I chose rational choice theory because the law of parsimony says simplest explanation tends to be correct and rational choice theory reflects the law because it's based on one principle, the utilitarian principle. It's possible that other complex theories are needed for understanding "why" in this case.

Another limitation of this study is that the research is cross-sectional. Causations of whether or not participants finish the VR&E program can only be suggested and not completely

proven because of this. Measurements of dropout were equal within cohorts and consequently, rates of dropout per cohort could not be generalized and causes could only be proposed. By looking at dropout rates this way, the exact times at which individual participants dropped out for their particular reasons could not be observed. The actual distance in which various veterans have made it through the program may be useful to study. One way to mend these problems would be analyzing longitudinal data to demonstrate causation. Also for this study, the data set was not totally complete for the demographic variables analyzed, as there were others that could have been used that were not included, such as age. Because of the way in which data was collected with this survey by Abt. Associates Inc., educational levels of the VR&E participants were not included in this study either, even though this may have been a useful resource for getting a better look at the differences between those who finished and those who did not. A more defined analysis of physical and mental problems could have made it clearer as to exactly what particular participants were struggling with and what might have helped them, as well.

## RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

While the VR&E is not an extremely new program, there has not been a great deal of research performed on it. Future research could be done using more qualitative rather than quantitative data to collect a different variety of information about the participants who have dropped out. One of the main focal points in this research was regarding the cohorts of the Vocational Rehabilitation and Employment program. This put a boundary on what was studied, as there was no specific attention paid to each individual participant in the program, which could be beneficial for determining more precise and detailed needs of veterans that may make it more likely for them to finish. It may help if additional studies gathered information by personally interviewing their subjects rather than, or in addition to, surveying them.

I would also recommend that further research be done using different veteran programs. While the VR&E is a good program that provides a wide variety of information, it could be useful to the veteran community if data was available regarding additional programs to help make the organizations work as well as they can, which could mean less unemployment for veterans.

It could be useful if other studies had a higher number of female subjects. While the results of this study showed that females were more likely to complete the program, there was not a huge amount of females of subjects included in this study. Future studies could also be done to include races such as Asians and Native Hawaiians.

Age and educational levels of veterans can be issues that are evaluated in more detail, as the abilities of finding employment often vary with age. Looking at this through rational choice could show that the odds of completion possibly being higher for older veterans because they may believe that their job opportunities decrease with age, making it necessary that they follow through with the VR&E program to raise the number of potential employment options. They may also feel as if they are too old to attend college, making a training program more practical for them. Younger veterans could have higher attrition and dropout rates due to new discoveries of positions that require them to attend college. Those with higher confidence levels in their ability to successfully obtain a job they are satisfied with from getting a college degree, compared to their beliefs in the possible outcomes of completing the VR&E program, could decide to leave. There is also the possibility that veterans who are not as old do not fully understand the amount of benefits that come with completion of programs such as the VR&E when searching for employment. This subject could be further studied to closely identify changes with increases in age and other variables that can often change with these increases.

Disabled veterans needing assistance with finding employment and being able to live independently of others is an important issue and the programs that help with this must do their best to try to make sure those attending accomplish their goals. Keeping them up to date is one of the best ways to do this.

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Appendix A

Table 2. Descriptive Statistics

| Dependent Variable | | | |
|---|---|---|---|
| | | **Non-Missing** | **% or μ** |
| Self-Reported Completion | 0,1 | 5031 | 25% |
| Applied Then Dropped | 0,1 | 5031 | 20% |
| Dropped During Eval | 0,1 | 4025 | 20% |
| Completed Eval then Dropped | 0,1 | 3019 | 20% |
| Dropped During Rehab | 0,1 | 2013 | 20% |
| | | | |
| Independent Variables | | | |
| White (Referent) | 0,1 | 5031 | 60% |
| Black | 0,1 | 5031 | 24% |
| Other Race | 0,1 | 5031 | 16% |
| | | | |
| Male (Referent) | 0,1 | 5031 | 84% |
| Female | 0,1 | 5031 | 16% |
| | | | |
| Dependent Children | | 5016 | 1.22 |
| | | | |
| Married (Referent) | 0,1 | 5031 | 65% |
| Single | 0,1 | 5031 | 12% |
| Separated/Divorced | 0,1 | 5031 | 22% |
| Widowed | 0,1 | 5031 | 1% |
| | | | |
| Physical Health | 0,1 | 5020 | 76% |
| | | | |
| Mental Health | 0,1 | 4977 | 33% |
| | | | |
| Unemployed (Referent) | 0,1 | 4944 | 58% |
| White Collar | 0,1 | 4944 | 10% |
| Blue Collar | 0,1 | 4944 | 15% |
| Other Occupation | 0,1 | 4944 | 17% |
| | | | |
| Self-Efficacy | | 4976 | 6.6809 |

Table 3.
Odds Ratios and Standard Errors for Logistic Regressions of VR&E Program Completion

| Variable | Applied | Left During Eval | Completed Eval Then Dropped | Left During Rehab | Self-Completion |
|---|---|---|---|---|---|
| Black | 1.121 | 1.135 | 1.195 | 1.625*** | .656*** |
| | (.087) | (.092) | (.100) | (.121) | (.096) |
| Other Race | .765* | 1.065 | .992 | 1.370** | .844 |
| | (.111) | (.105) | (.114) | (.135) | (.108) |
| Female | .908 | .940 | .674*** | .567*** | 1.698*** |
| | (.103) | (.106) | (.116) | (.130) | (.096) |
| NUMDependentkids | 1.031 | .959 | .923** | 1.070 | .991 |
| | (.029) | (.031) | (.033) | .039 | (.031) |
| Single | 1.321* | 1.036 | 1.022 | 1.299 | .743* |
| | (.119) | (.127) | (.140) | (.169) | (.131) |
| Separated/Divorced | 1.087 | .806* | 1.108 | 1.416** | .815* |
| | (.092) | (.098) | (.100) | (.122) | (.097) |
| Widowed | 1.097 | .527 | .764 | 4.902** | .490 |
| | (.363) | (.451) | (.408) | (.541) | (.492) |
| LimitedPhyHealth | 1.074 | 1.089 | 1.300 | 1.772*** | .610*** |
| | (.088) | (.091) | (.099) | (.111) | (.082) |
| LimitedMentHealth | 1.131 | 1.063 | 1.435 | 1.815*** | .552*** |
| | (.088) | (.093) | (.097) | (.124) | (.101) |
| WhiteCollar | .751* | .897 | .547*** | .729* | 1.660*** |
| | (.141) | (.130) | (.149) | (.151) | (.113) |
| BlueCollar | 1.238* | .742** | .696** | .943 | 1.235** |
| | (.105) | (.120) | (.121) | (.132) | (.102) |
| OtherCollar | 1.561 | 1.630*** | 1.478*** | 1.548** | .467*** |
| | (.097) | (.102) | (.117) | (.155) | (.123) |
| Self-Efficacy | .971** | .439* | .951** | .783*** | 1.237*** |
| | (.027) | (.228) | (.031) | (.041) | (.034) |
| Constant | .234*** | .439*** | .578** | 2.306** | .112*** |
| N | 4773 | 3826 | 2876 | 1933 | 4773 |
| Pseudo R2 | .011 | .014 | .039 | .116 | .073 |

* p < .05, two-tailed ** p < .01, two-tailed *** p < .001, two-tailed

Table 4. Questions and Response Categories from 2007 VERS Survey

| Variable | Question | Responses |
|---|---|---|
| Self- Reported Completion | "Did you complete the VR&E Program?" | "Yes, completed program"<br>"No, did not complete program"<br>"REFUSED"<br>"DON'T KNOW" |
| Type of Occupation | "What was your occupation at the time of application?" | "Management Occupations"<br>"Business and Financial Occupations"<br>"Computer and Mathematical Occupations"<br>"Architecture and Engineering"<br>"Life, Physical and Social Science"<br>"Community and Social Science"<br>"Legal Occupations"<br>"Education, Training and Library"<br>"Arts, Design, Entertainment, Sports and Media"<br>"Healthcare Practitioner and Technical"<br>"Healthcare Support"<br>"Protective Services"<br>"Food Preparation and Serving Relating"<br>"Building and Grounds Cleaning Maintenance"<br>"Personal Care and Services"<br>"Sales and Related Occupations"<br>"Office and Administrative Support"<br>"Farming, Fishery and Forestry"<br>"Construction and Extraction"<br>"Installation, Maintenance and Repair"<br>"Production"<br>"Transportation and Material Moving" |

Table 4. Questions and Response Categories from 2007 VERS Survey

| Variable | Question | Responses |
|---|---|---|
| Type of Occupation (cont.) | "What was your occupation at the time of application?" | "Military"<br>"Other (Specify)"<br>"REFUSED"<br>"DON'T KNOW" |
| Health | "In general, would you say your health is excellent, very good, good, fair or poor?" | "Excellent"<br>"Very Good"<br>"Good"<br>"Fair"<br>"Poor" |
| | "During the past year were you limited in the kind of work or regular daily activities you do as a result of your physical health?" | "YES"<br>"NO"<br>"REFUSED"<br>"DON'T KNOW" |
| | "During the past year were you limited in the kind of work or regular daily activities you do as a result of any emotional or mental health problems?" | "YES"<br>"NO"<br>"REFUSED"<br>"DON'T KNOW" |

Table 4. Questions and Response Categories from 2007 VERS Survey

| Variable | Question | Responses |
|---|---|---|
| Self-Efficacy | "It is easy for me to stick to my aims and accomplish my goals." | "Strongly Agree"<br>"Somewhat Agree"<br>"Somewhat Disagree"<br>"Strongly Disagree"<br>"REFUSED"<br>"DON'T KNOW" |
| Self- Efficacy | "When I am confronted with a problem, I can usually find several solutions." | "Strongly Agree"<br>"Somewhat Agree"<br>"Somewhat Disagree" |
| Marital Status | "What is your marital status? Are you:" | "Married, living with your spouse"<br>"Married, not living with your spouse"<br>"Widowed"<br>"Divorced"<br>"Legally separated"<br>"Never been married"<br>"DON'T KNOW"<br>"REFUSED" |
| Number of dependent children | "During 2006, how many children depended on you for at least half of their support?" | "DON'T KNOW" = 97<br>"REFUSED" = 98<br>ENTER NUMBER OF CHILDREN_____<br>[2-DIGIT NUMERIC, RANGE 00-10, 97, 98] |

Table 4. Questions and Response Categories from 2007 VERS Survey

| Variable | Question | Responses |
|---|---|---|
| Race | "Are you Spanish, Hispanic, or Latino?" | "YES"<br>"NO"<br>"REFUSED"<br>"DON'T KNOW" |
| Race | "Please select one or more to describe your race (CHECK ALL THAT APPLY)" | "White"<br>"Black or African American"<br>"American Indian or Alaska Native"<br>"Asian"<br>"Native Hawaiian"<br>"Other Pacific Islander"<br>"HISPANIC/MEXICAN"<br>"OTHER (SPECIFY)" |

Institutional Review Board for the Protection of Human Subjects Approval Letter

Indiana University of Pennsylvania
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August 2, 2012

Kristy Notestine
Dept of Sociology
102 McElhaney Hall

Dear Ms. Notestine:

Your proposed research project, "Attrition and Dropout Analysis of Veterans VR&E Program Using 2007 Veterans Employability Research Survey (VERS)," (Log No. 12-159) has been reviewed by the IRB and is approved as an expedited review for the period of July 31, 2012 to July 31, 2013.

It is also important for you to note that IUP adheres strictly to Federal Policy that requires you to notify the IRB promptly regarding:

1. any additions or changes in procedures you might wish for your study (additions or changes must be approved by the IRB before they are implemented),
2. any events that affect the safety or well-being of subjects, and
3. any modifications of your study or other responses that are necessitated by any events reported in (2).

Should you need to continue your research beyond July 31, 2013 you will need to file additional information for continuing review. Please contact the IRB office at (724) 357-7730 or come to Room 113, Stright Hall for further information.

Although your human subjects review process is complete, the School of Graduate Studies and Research requires submission and approval of a Research Topic Approval Form (RTAF) before you can begin your research. If you have not yet submitted your RTAF, the form can be found at http://www.iup.edu/page.aspx?id=91683 .

This letter indicates the IRB's approval of your protocol. IRB approval does not supersede or obviate compliance with any other University policies, including, but not limited to, policies regarding program enrollment, topic approval, and conduct of university-affiliated activities.

I wish you success as you pursue this important endeavor.

Sincerely,

John A. Mills, Ph.D., ABPP
Chairperson, Institutional Review Board for the Protection of Human Subjects
Professor of Psychology

JAM:jeb

xc: Dr. Christian Vaccaro, Thesis Advisor
Ms. Brenda Boal, Secretary