

**The Relative Importance of Selected Variables on the
Employment Consistency of Virginia Ex-Offenders**

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(Abstract)

To decrease the steady rise in the prison population, we must deter ex-offenders from re-offending and recidivating, once they have been released. For ex-offenders, finding employment is critical to successful post-release re-integration which can help reduce the chances of them recidivating. Ex-offenders who are consistent in their employment patterns are less likely to return to a life of crime. This study investigated the relative importance and significance of 11 selected variables on four separate levels of employment consistency. The selected variables were chosen based on what has been identified in the literature as effecting employment patterns of ex-offenders and the general population, and what data was reliable and available. The study group consisted of 2,314 male Virginia ex-offenders released in fiscal year 2001. The results revealed that the variables of time served, career and technical education program completions, educational level, age at release, race, and being convicted of a violent offense were positive predictors of employment consistency. On the other hand, having a record of minor infractions and being a repeat offender were associated with decreasing employment consistency in the analysis. The findings of the study suggest that it is important for offenders to make changes in the ways they think and their attitudes. This can be accomplished by taking advantage of opportunities in prison to participate in rehabilitative services and educational programs. In addition, as offenders get older they tend to abandon criminal ways of thinking, and once released they are more apt to stay employed. Furthermore, the influence of the race variable did not affect the study group of ex-offenders as anticipated.

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“Zip It Up, and Zip It Out”

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CHAPTER 1

Introduction

The American prison population has increased over the years and continues to grow exponentially. Reported numbers from 2006 alone showed that an estimated 2,385,213 people were incarcerated in the United States (Sabol, Couture, & Harrison, 2007), representing a 60 percent increase from 1990 (Etters, 2002). Statistics from August 2007 for Virginia revealed that the average number of Virginia state offenders incarcerated in Department of Corrections (DOC) institutions was 32,326. This constitutes a 1.4 percent increase from the 31,893 average inmate population in custody in the previous month, July 2007, and a 4.4 percent increase from the average population (30,956) recorded one year earlier (Virginia Department of Corrections, 2007).

Consequently, finding effective ways of reducing the number of people incarcerated has become a major concern. A major reason for the increase in the prison population is that many ex-offenders fall victim to what Daniel and Anderson (2003) refer to as the “revolving door” ; they return to prison after being released. The prison population is composed of two types of persons: Those incarcerated for the first time, and those returning to prison after being previously released. Offenders who are released from the custody of the department of corrections, only to return to prison due to a new crime or violation of parole, are known as recidivists.

Increased populations in prisons engender other problems. For instance, incarcerating an individual is an expensive proposition for taxpayers, who are burdened with paying the bulk of the associated costs of housing inmates.

Figures directly associated with incarcerating an individual vary across the United States from approximately \$8,000 to \$44,000 per year with a national average of \$23,000 per year (Stephan, 2004). In the Commonwealth of Virginia the reported per capita cost of housing offenders was \$21,248 in fiscal year 2005, up 4.2 percent from fiscal year 2004 (Virginia Department of Corrections, 2007). A significant reduction in the number of persons returning to prison following release would result in savings of public money, leaving funds available for other public priorities. To accomplish this, however, effective means must be devised.

Employment Consistency

Employment can be part of the solution. "A key element of successful reintegration into society after release is believed to be employment in the legitimate mainstream economy" (Kling, 2006, p. 2). Moreover, research has found that obtaining employment after release is predictive of post-release success for ex-offenders (McCollum, 1999; Etter, 2002; Albright & Denq, 1996; Uggen, 2000; Saylor & Gaes, 1997; Kling, 2006; Solomon, Travis, Johnson, & McBride, 2004; Zhang, Roberts, & Callanan, 2006). Employment has been linked to decreasing the chances that an ex-offender will commit a crime, by providing an opportunity to increase skill levels, secure job experience, and earn income that may help them become financially stable, therefore reducing the chances of re-offending and recidivating. Researching ex-offender employment can thus elucidate what promotes favorable employment outcomes for such individuals. This, in turn, will help provide effective assistance to offenders while they are incarcerated, which will aid them to secure successful employment upon release, thus increasing their chances of not re-entering the prison system.

Employment is a good way to deter ex-offenders from engaging in criminal activities. However, merely obtaining a job is only the beginning of the solution. Much of the research provides generic information about employment as it relates to post-release outcomes of recidivism (Uggen, 2000; Heinrich, 2000; Freeman, 2003; Zhang et al., 2006). But the idea of employment as just obtaining a job is inadequate. For ex-offenders, obtaining post-release employment is important, but the ability to be consistent in that employment and secure a stable income often prevents ex-offenders from returning to the criminal justice system (Heinrich, 2000). Maintaining consistent employment is also a signal that an ex-offender has made a commitment to change their illegal lifestyle. Few studies have observed employment consistency (Morrissey, Ogle, & Lichtenberger, 2005; Sabol, 2007), and fewer have used it as the focus of a study. Employment consistency was focused on because it is believed that the more consistent employment ex-offenders have, the more likely they will be able to stay legally employed and earn a stable income which would allow them to provide a living for themselves. This would, in turn, help to prevent them from resorting to illegal sources of income, and potentially re-offending or recidivating.

In this study, the employment consistency of a select population of Virginia ex-offenders was explored. To measure employment consistency, four employment consistency levels were developed and observed (see Table 1). These levels of employment consistency resemble variables constructed in previous research studies (Sabol, 2007; Kling, 2006). The first level is the most basic, and establishes the number of quarters an ex-offender was employed with any reported earnings at any time during the 17 quarters of the study period.

For ex-offenders, obtaining any employment is a basic indicator that they are on the right path towards earning a living and intending to become productive members of society. The second employment consistency level, more sophisticated than the first, is the number of quarters with reported earnings equal to or exceeding 20 hours a week, earning at least minimum wage, during the 17 quarters of the study period. This employment consistency level establishes a minimum earnings amount that will help ex-offenders to begin establishing financial stability. If ex-offenders are earning enough income to make ends meet, they may not resort to illegal activities in an effort to make money. The third employment consistency level is the number of quarters with reported earnings equal to or exceeding 20 hours a week, earning at least minimum wage, within a single industrial sector during the 17 quarters of the study period. Individual industries are simply ways of grouping the many different types of occupations (e.g., construction) (See Table 2 for a full list of North American Industrial Classification System (NAICS) industries). This third consistency level is a better measure of an ex-offender's employment habits because it suggests a motivation to work in a specific occupation area. Ex-offenders at this employment consistency level may be thinking of a specific career path and not just having a job. The fourth employment consistency level is the most specific of the four levels. It documents the number of quarters an ex-offender was employed with reported earning equal to or exceeding 20 hours a week, earning at least minimum wage, with a single employer during the 17 quarters of the study period. Consistently working for the same employer suggests an even higher desire and motivation to sustain a career and perhaps

develop a crime-free way of life. It can be assumed that ex-offenders with this pattern of employment consistency have more stable earnings and better potential for advancement in their employment. This is the best measure of employment consistency that was available for this study. Furthermore, one could also assume that if there is a pattern of consistent employment with a single employer, the employer is satisfied with the performance of the individual.

Table 1

Employment Consistency Levels

Employment Consistency Level	Employment Consistency Level Description
Consistency Level 1	The number of quarters with reported earnings any time during the study period.
Consistency Level 2	The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period.
Consistency Level 3	The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, within a single industrial sector.
Consistency Level 4	The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, with a single employer.

Table 2

NAICS Industrial Sectors of Employment

Industry Titles

Agriculture, Forestry, Fishing and Hunting

Mining

Utilities

Construction

Manufacturing

Wholesale Trade

Retail Trade

Transportation and Warehousing

Information

Finance and Insurance

Real Estate and Rental/Leasing

Professional, Scientific, and Technical Services

Management of Companies and Enterprises

Administrative and Support, Waste Management, and Remediation Services

Educational Services

Health Care and Social Assistance

Arts, Entertainment, and Recreation

Accommodation and Food Services

Other Services (except Public Administration)

Public Administration

(U.S. Census Bureau, 2007)

Predictor Variables

Previous literature indicates that numerous variables affect an individual's employment and potentially impact employment consistency. These variables are predictive of employment outcomes for both the general and the ex-offender populations. But when a person is a member of the ex-offender population, the predictive variables have a greater impact on the employment of that population because of the existence of a criminal record, low skills and literacy, poor work histories, and/or behavioral and health issues (Sabol, 2007). Eleven variables have been selected as possible predictors of employment consistency. These variables were observed in the study to determine the effects and the importance of the effects each one has on the four different levels of employment consistency.

The first variable is race. Studies have shown that race is predictive of employment outcomes for the general population (Diebold, Neumark, & Polsky, 1997; Neumark, Polsky, & Hansen, 1999), and the ex-offender population (Morrissey et al., 2005; Lichtenberger & Ogle, 2005; Uggen, 1999). In addition to challenges associated with spending time in prison, it has been noted that being a minority can have a devastating impact on employment opportunities for ex-offenders due to racial stereotypes (Johnson & Neal, 1998; Western, Kling, & Weiman, 2001).

The next predictive variable is educational level. Researchers have found a connection between the amounts of education, crime, and employment (Steurer, Smith, & Tracy, 2001). Higher education levels, of course, tend to promote better employment situations (Uggen, 1999). Having little education

places males at a higher risk of unemployment or low-paying substandard employment (Bushway & Reuter, 2002). It is well-documented that offenders have lower levels of formal education, compared to the general population (Sabol, 2007; Solomon et al., 2004). In 1997, 41 percent of state and federal inmates and 31 percent of probationers had not completed high school or its equivalent. McGee (1997) stated that problems associated with poor academic achievement have always provided barriers to employment. For the ex-offender population already faced with the stigma of a criminal record, poor education compounds the problem.

The third predictor is whether an ex-offender completed a career and technical education (CTE, formerly vocational education) program while incarcerated. This is linked to the idea that possessing employability skills and training in specific occupations will lead to better employment outcomes. CTE is education for the workforce, and is the vehicle used to achieve specific job skills. In prisons, CTE programs (see Appendix G for available CTE prison programs) are intended to be tools for success for increasing trade specific skills for post-release employment (Bouffard, Makenzie, & Hickman, 2000; Imel, 1986). Being trained and certified may tip the scale in favor of an ex-offender when seeking and maintaining employment. This may also counteract an ex-offender's difficulty in obtaining employment because of the presence of a criminal record. Being trained for a specific trade is thus vital.

The next two predictor variables are whether a person has a history of illegal drug use or heavy alcohol use. Both of these conditions can worsen a person's chances of securing and maintaining a job. Specifically, alcohol abuse

and illegal drug use contribute to employment difficulties (Bushway, 1998) by decreasing the probability of success in employment situations for the general population (Freeman, 2003). This is worse for ex-offenders who are also battling the negativity associated with having a criminal record and other hardships associated with reintegration into society. Ex-offenders themselves have reported that substance abuse negatively impacted their post-release employment (Heinrich, 2000).

The next predictor is age at release. A person's age is predicted to have a major affect on employment in the future (Dudley & Nutter, 2006). Generally the older a person is, whether they are a part of the general or ex-offender populations, the more likely they are to have a higher degree of employment consistency (Uggen, 2000; Diebold et al., 1997; Neumark et al., 1999), because criminal behavior becomes less likely with age (Harrison and Schehr, 2004). Age was measured as age at release in the study.

In addition to the variables that affect both the general and ex-offender populations, there are some factors specifically related to predicting the employment patterns of ex-offenders. The ones used in this study were: the type of offense committed, time spent incarcerated, being a repeat offender, and having behavioral problems while incarcerated. The type of offense an offender is convicted of has been found to be related to post-release employment (O'Reilly & Asche, 1998; Lichtenberger & Ogle, 2005). Some employers prefer not to employ people convicted of certain crimes.

Time spent in prison has a direct effect on ex-offender employment because while they are incarcerated they cannot be employed and earning

wages in the labor market. Time spent in prison limits the availability for employment and leaves gaps in employment history. Moreover, time served in prison contributes to the erosion of human capital of ex-offenders and impairs the acquisition of job skills and job experiences, compared to people who were continuously employed (Sabol, 2007; Kling, 2006; Western et al., 2001; Waldfogel, 1994). For jobs that require training or specific capabilities, time spent in prison reduces competence in relevant areas. Moreover, spending time incarcerated promotes a negative stigma that employers view as unfavorable. There is a possible upside, however. Time spent in prison can allow an offender time to complete CTE or rehabilitative programs that can increase their post-release employment capacity (Kling, 2006). In addition, offenders are older at release, as a result of spending longer periods in prison. And as time passes, there is more of a chance for the erosion of former bonds associated with a life of crime.

Being classified as a repeat offender means that a person has spent time in prison, prior to the current sentence, so they have been unavailable to work already at certain times. Therefore, if a person has a conviction record prior to the study, their limited work availability is compounded. Sabol (2007) stated that males who have a history of incarcerations can find career employment inaccessible. Having a previous conviction record in this study was measured as repeat offender status.

Finally, if an ex-offender had behavioral problems while incarcerated, they will most likely have them on the job after release. Incarcerated behaviors that offenders adopt for survival are likely to be inconsistent with work routines

outside of prison in the labor market (Irwin & Austin, 1997), thus creating problems when attempting to maintain employment. In this study evidence of behavior problems was measured as the number of major and minor infractions.

Problem Statement

An important issue, which is widely debated, is how to best help released offenders become productive members of society and prevent them from recidivating. What seems to be clear is that for many ex-offenders, employment consistency can be the solution. Eleven variables were identified as having an influence on the employment of ex-offenders. What is not known, and needs to be determined, is the relative importance or the significance of the 11 predictor variables on increasing the level of employment consistency. Determining this will help in developing more effective and efficient methods of preparing inmates for life after prison. Parkinson and Steurer (2004) stated that programming inside correctional facilities greatly affects what happens once inmates are released. Knowing the effect of the predictor variables on ex-offender employment consistency can allow for better placement of offenders in programs or providing services that are most likely to meet individual offender's needs. Dealing with the most important need(s) of an individual offender can lead to better chances of post-release employment and higher levels of employment consistency.

Research Question:

What is the importance of age at release, race, education level, drug use, alcohol abuse, the completion of CTE programs, offense type, number of days served, number of major infractions, number of minor infractions, and being a repeat offender in predicting the: 1) number of quarters with any reported earnings, 2)

number of quarters with reported earnings equal to, or exceeding, 20 hours a week at minimum wage, 3) number of quarters with reported earnings equal to, or exceeding, 20 hours a week at minimum wage within the same industrial sector, 4) number of quarters with reported earnings equal to, or exceeding, 20 hours a week at minimum wage with the same employer? An ex-offender working for minimum wage at a minimum of 20 hours a week would earn \$1339.00 in a quarter.

Significance of Study

This study identifies variables of ex-offenders in specific employment consistency levels and the relative importance of the selected variables to each specific employment consistency level as measures of employment consistency. Knowing to what degree a variable is important to employment consistency may promote better planning and more effective intervention programs for inmates. Since inmate time in prison varies, prison administrations need to make the best use of the available time they have with each inmate to implement interventions. To accomplish this, prison officials will need to provide for them the program(s) that would most greatly help them achieve post-release success, a major aspect of which is maintaining employment consistency. Thus, identifying and prioritizing resources, services, and programs for inmates will better prepare them for post-release employment and increased consistency in their jobs and society.

At the very least, the outcomes of this study can provide more information on ex-offenders and what affects their employment consistency. This can result in a more informed public with a better understanding which promotes better

decision making, better investments, and more support for strategic action in Virginia prisons specifically. In addition the study can help in developing individual correctional education plans for inmates based on personal characteristics. This pursuit could ultimately help to reduce recidivism and save states from spending tax dollars on the costs of housing prisoners.

Definitions

Recidivist: For the purposes of this study a recidivist is an offender, who after release from prison, is re-incarcerated in a Virginia state correctional facility (Daniel & Anderson, 2003).

Quarter: A thirteen week, three month, period, as defined by the Virginia Employment Commission for earnings and tax report purposes.

Earnings: Reported wages in Virginia during the study period

Study Period: The beginning and ending times for the information gathered and analyzed about the population. The period includes fiscal year 2001 through fiscal year 2005 (Calendar year July 1, 2000 through June 30, 2005). Each ex-offender's available study period will be 17 quarters, beginning with the quarter of release.

Industrial Sector: The different groupings of occupations. There are 20 of them in this study – see table 2.

Fiscal Year: Calendar year July 1, through June 30 of the next year

Minimum Wage: Equivalent to earning \$5.15 per hour worked (United States Department of Labor, 2009).

Employment Consistency: The level of the regularity of working

Limitations

- Used pre-existing data from the Virginia Department of Corrections (VADOC) and the Virginia Employment Commission (VEC) that have been filtered and compiled by the Center for Assessment, Evaluation and Educational Programming (CAEEP).
- No control as to which data were collected or how they were collected
- Some demographic self-reported information is included
- Reported earnings in Virginia
- Recidivism information for the state of Virginia

Delimitations

- The study population consists of males released from Virginia state institutions in fiscal year 2001.
- Only those who had reported earnings in Virginia for at least one quarter during the study period were examined.
- Ex-offenders in the 2001 cohort having complete information on the variables of the study were used.
- Only non-recidivists were studied.
- Only ex-offenders in the 2001 cohort that had served a minimum of 365 days in prison were included.
- Only available earnings data, for each member of the study population from the first 17 quarters following release were used, beginning with the quarter of release.

CHAPTER II

Review of Literature

Introduction

The purpose of this chapter is to review literature on the effects the following have on employment: age, race, education level, drug use, heavy alcohol use, career and technical education program completion, offense type, time served, repeat offender status, and infractions. These variables have been identified in the literature as having some type of influence on employment for the general and/or ex-offender populations. Though the overall dynamics of ex-offenders are different from those affecting members of the general population, it is just as important to take note of the above factors that influence the employment patterns of the general population because those factors also influence the ex-offender population. It is important to bear in mind that the ex-offender population will have specific influential variables that are limited to their special population. Understanding how all these variables affect employment will help to better understand how ex-offenders' employment consistency will be influenced.

Effect of Race on Employment

Discrimination remains a fundamental factor of a complex pattern of racial inequality in the labor market (Pager & Western, 2005). White males seem to fare better in the labor market than their black counterparts (Western & Pettit, 2000). Western and Pettit found that even when unemployment among white men fell, with the overall decrease of the unemployment rate, the unemployment

of black men continued to increase. Some researchers suggest that there are significant differences in the characteristics of white and minority groups that can potentially affect labor market outcomes (Tyler & Kling, 2006), while other researchers indicate persistent discrimination as the reason for the labor market struggles of African Americans.

Diebold et al. (1997) reported that race had an influence on stable employment. They discovered that African Americans had lower employment and retention rates than whites. In a corresponding study, Neumark et al. (1999) results demonstrated that blacks experienced significant declines in job retention, whereas whites had higher job stability. Needels (1996) unearthed similar trends through her research, concluding that whites had higher employment rates and higher earnings than blacks.

What might be the reason for the racial trends of the labor market? Is there employment discrimination against non-white individuals, or are the trends a result of the general characteristic differences between blacks and whites? Stolli, Raphael, and Holzer (2004) observed that black applicants were less likely to be hired by white hiring agents. They suggested that because of racial discrimination and potential hostile work environments, black applicants would be more apt to apply for employment where there was some sort of black authority present.

Pager and Western (2005) measured the extent to which race/ethnicity reduced employment opportunities among equally qualified applicants. They additionally observed how evidence of felony conviction influenced some of the applicants' employment opportunities. Comparing the matched teams of testers,

the outcomes suggested that blacks were almost less than half as likely to be considered for employment compared to equally qualified white applicants. Even more disturbing was their determination that white applicants with a felony conviction had better employment outcomes than their black counterparts with no criminal background. Furthermore, the authors concluded that blacks were more consistently passed over in favor of whites for the most basic kinds of low-wage employment.

Race is a strong influencing factor on employability for ex-offenders (Harrison & Schehr, 2004). Minorities in the general population already experience labor market discrimination, as do minority ex-offenders. But this latter population also faces barriers associated with being ex-offenders, when seeking employment ([Johnson & Neal, 1998](#)). In their 2000 study, Western and Pettit combined data from surveys to estimate employment-population ratios for black and white men. In addition, they adjusted for the incarceration population and reported that white males fared better in the labor market than their black counterparts. Black male employment rates decreased by five percentage points compared to a one percentage point reduction for white males.

Some employers who hire ex-offenders have been noted to discriminate, in their hiring practices, due to race. Pager (2003) observed a 64 percent reduction in job offers for black ex-offenders. Weiman (2007) also documented that in his study employers showed signs of racial profiling that hindered the employment of black male ex-offenders.

There have been studies whose results reflect more favorable labor market outcomes for black ex-offenders than their white counterparts

(Lichtenberger & Ogle, 2005; Morrissey et al., 2005). These studies noted CTE completions as the reason for their results, as it has a stronger effect on black ex-offender employment. Nonetheless, the basic trend seems to be that whites generally have better employment outcomes. Whether this is a result of characteristic differences between white and black people or labor market discrimination, race seems to overtake all else in determining employment opportunities (Pager & Western, 2005). Ex-offenders should be aware of these issues when seeking post-release employment.

Incarceration Effects on Employment

The offense committed influences the time served in prison, which in turn, affects an offender's age at release. Usually the more serious the offense, the longer the sentence length and time served in prison. The longer a person spends in prison, the older they will be when released. In this section, these three variables will be discussed as literature has found them to be related to employment. It is important to bear in mind the influential cause and effect relationship between these variables. Although offense type, time served, and age at release are related, they each have separate effects on employment outcomes for ex-offenders. These variables can affect employment in two ways. They may personally influence an individual's attitude towards employment, or they may affect employer attitudes towards hiring them.

Offense Type

Non-violent and drug offenses tend to be habitual crimes involving some type of financial gain. Violent offenses are often spur of the moment reactions, or

crimes of passion or emotion. They are less likely to be associated with financial gain.

Results from Lichtenberger and Ogle (2005) revealed that violent offenders had higher employment rates than non-violent and drug offenders. Petersillia (1987) also conducted a study that observed a sample of ex-offenders during their probation period. Successful probationary periods consisted of obtaining and maintaining legal employment and refraining from illegal activity. The study found that non-violent property offenders had higher probation failure than violent and drug offenders. Regression analyses identified property offenses as having the highest rates of recidivism. Naturally, if an ex-offender tends to recidivate, this will impair their ability to be employed.

There is evidence in the literature suggesting that employers are more reluctant to hire ex-offenders depending on the offense for which they were convicted. Holzer et al. (2003) discovered through employer surveys that employers were less apt to hire ex-offenders convicted of a violent offense. Similar results were also noted in Albright and Denq's (1996) study.

O'Reilly and Asche (1998) conducted research to identify expectations of employers when they considered hiring formerly incarcerated people, focusing particularly on whether these expectations were different from those they had for the general population. A sample of 496 employers was identified from a dataset provided by the Virginia Employment Commission (VEC). The dataset listed over 180,000 employers in nine different categories based on the number of employees. Forty-five subjects were randomly selected from each category. A

questionnaire was mailed to each selected employer, three attempts were made to obtain a response, and there was a 57% overall return rate.

O'Reilly and Asche found that employers had hiring concerns that were specific to the ex-offender population. Noted as particularly important was the nature of the crime a person had committed and the potential for danger to other employees. It was also noted that the type of crime committed was most often used to eliminate a person from being considered for certain jobs.

Alternatively, research results also exist that indicate offense type to have no significant effect on post-release earnings (Needels, 1996). This suggests that ex-offenders' employment is not necessarily disadvantaged based on the crime they committed. Overall, though, most studies have found that the type of offense can affect post-release employment in the following ways: as it pertains to an individual's crime habits, where violent offenders tend not to be repetitive offenders and non-violent offenders do, or as it pertains to the hiring practices of employers, with violent offense convictions being red flagged and typically used as a reason for not offering employment.

Time Served

Studying the effects of incarceration on labor market outcomes of ex-offenders is difficult because of the unevenness of prior research (Western et al., 2001). Nevertheless it has been determined that time spent incarcerated is problematic for persons seeking post-release employment (Solomon et al., 2004) because it represents periods of loss of potential contact and job networks. It also tends to cause the erosion of job skills, work habits, and current technical knowledge.

Sabol (2007) examined the relationship between the labor market and ex-offender employment. He observed how long ex-offenders needed to obtain employment and tracked their employment experience for two years after release. He found that time spent in prison made ex-offenders unattractive for entry-level jobs that required trust, impaired access to career employment in the skilled trades or public sector, and promoted unwillingness of employers to invest in developing specific skills required for long-term employment.

Offenders on a panel indicated that being incarcerated did have an adverse effect on the possibility of post-release employment (Waldfoegel, 1994). Waldfoegel observed that serving prison time resulted in a five percentage point drop in employment rates and as much as a 30 percent decrease in earnings. In addition to lost experiences, Waldfoegel also determined that time served in prison limited future legal employment and earnings opportunities. Employers had negative feelings about an individual who had spent time incarcerated, and they were less likely to offer employment. Freeman (1991) found similarly that spending time in prison was associated with a 15 to 30 percentage point reduction in the employment probability of ex-offenders.

In a 2001 review of literature Western et al. identified three causal mechanisms that linked serving prison time to post-release employment and earnings outcome. Having spent time incarcerated created the negative stigma of conviction, eroded job skills, and negatively affected social and human capital. These researchers also indicated that time spent in prison could disqualify employment in licensed or professional occupations, health care, skilled trades, and some public sector employment. Despite all of its negative effects, Western

et al. nevertheless concluded that time served in prison did not necessarily diminish post-release employment.

Similar findings were achieved by Kling (2006). Using data from the Florida prison system, the California federal judicial system, and earnings information reported through the Unemployment Insurance System (UI), Kling examined incarceration length and its effects on post-release employment and earnings. The results of his analysis indicated that there was no substantial evidence of negative effects of incarceration length on post-release employment and earnings. Furthermore, in the short term (one to two years), longer incarceration time was associated with increased employment. Kling attributed this outcome to participation in academic pursuits, CTE, substance abuse treatment, or work release programs while in prison. Other studies have reported similar findings (Needels, 1996).

Moreover, it has been noted in the literature that by effectively using the incarceration period, prison officials can address deficiencies with respect to: education, career and technical skills, and employment history (Solomon et al., 2004). From this standpoint, the more time served in prison, the more opportunity an offender has to participate in and be helped by some of the available correctional programs. Finding ways to use time served in prison more effectively is thus critical to helping ex-offenders locate and sustain gainful post-release employment.

Age at Release

Age was predicted to have a major effect on the future workforce in Virginia (Dudley & Nutter, 2006). Literature suggests that the older a person, the

more likely they are to have more stable employment (Uggen, 2000; Diebold et al., 1997; Neumark et al., 1999). Stable employment is believed to decrease the likelihood of an ex-offender's returning to prison.

Diebold et al. (1997) studied job stability in the United States. Data was obtained from Current Population Survey (CPS) tenure supplements, which are issued periodically by the Census Bureau. Demographic characteristics obtained from the CPS were also utilized (procedures used to examine changes in job retention rates were based on previous research). Retention rates for 1973, 1978, 1981, 1983, 1987, and 1991 were compared as a measure of job stability. The data compiled from this study revealed that age, among other factors, had an effect on stable employment. People 40 years of age and older were found to have significantly better employment patterns than people aged 18 to 39.

In a similar study, Neumark et al. (1999) also used Current Population Survey data to provide a look at job stability through the mid 1990s. Because they used two separate sources, the 1980s CPS and 1995 CPS data tenure supplements, information had to be adjusted to achieve comparability. By examining changes in individual retention rates over the specified period of time, Neumark et al. tracked changes in job stability. The information was disaggregated by sex, race, and age, therefore revealing a specific look at changes among specific groups. Notably their results demonstrated that people in the 40 to 54 age group had significant increases in retention rates compared to the 18 to 39 age group who experienced declines in retention rates. These results infer that older individuals have more stable employment than their younger counterparts.

In a 2000 article, Uggen investigated whether an experimental employment program (The National Support Work Demonstration Project), which provided employment to ex-offenders, served as a turning point in their offending careers. To test the effects of employment on recidivism, Uggen analyzed the data collected from the experimental employment program. He developed three effect categories for the treatment administered (work): assignment, participation, and eligibility. The first encompassed the overall impact of being in the program, long-term and short-term. The second referred to the immediate impact of actually being employed, and eligibility effects were limited term measures of treatment impact during periods when those assigned to a program could have worked in program jobs. During the study period, over 3000 people from nine United States cities participated in the National Support Work Demonstration Project. The control and experimental groups were similar in demographic characteristics and were randomly assigned to the treatment (employment) or control group. Both treatment and control group members reported work, crime, and arrest information at nine month intervals for three years. Results indicated that employment seemed to be a turning point in the lives of ex-offenders over the age of 26. This implied a relationship between age and employment because as Uggen noted, the results from the experimental program suggested that older offenders were more open to employment interventions than the younger ones.

Being older does not always translate to positive employment outcomes, however. In a 1996 study of ex-offender recidivism, employment, and earnings patterns, Needels reported lower employment rates among the older men sampled. She stated that this outcome was most likely caused by such factors

as: underground economies, unreported earnings, out-of-state employment, or death. Being older could also limit the type of employment to which ex-offenders were usually channeled. Harrison and Schehr (2004) noted that many low-skilled labor intensive jobs that employers were more apt to hire ex-offenders for would be more difficult for older ex-offenders to obtain.

Overall, the literature indicates a positive relationship between age and employment; as age increases, positive employment outcomes increase. Older people tend to have better employment patterns, whether they are ex-offenders or not. This may be because older people tend to be more focused or more responsible, and more aware of the need to earn a sustained and legitimate living compared to younger individuals.

Effects of Education on Employment

In our society education is a key factor in obtaining well paying jobs. Formerly incarcerated individuals often find that their search for employment is hindered by barriers such as lack of educational credentials (Carter, 2007). Most prison administrators agree that education programs for inmates that consist of academic skill, and career and technical training are worthwhile. This section will explore the literature on the effects of education level and CTE on employment, specifically the effects on ex-offender employment.

Educational Level

Because global and domestic workforces are changing, there should be an increasing demand for a well-educated and well-trained workforce (Dudley & Nutter, 2006). People with more education are more attractive to employers and tend to experience lower unemployment (Sung, 2001). Therefore, educational

level has an important influence on employment, which has also been found the case in countries outside of the United States (Heisz, 2005).

Murnane, Willett, and Tyler (2000) examined the value and contrast of labor market outcomes between those having obtained a GED and those having earned the conventional high school diploma. Their results showed that on average GED recipients did not do as well in employment or earnings as conventional high school graduates. GED recipients did, however, have better employment and earnings than high school dropouts with weak cognitive skills. It was further noted that post-secondary education improved employment opportunities for both GED recipients and high school graduates. Other researchers have also concluded that graduating from post-secondary school and above is predictive of positive employment outcomes (Diebold et al., 1997), particularly in a labor market that progressively offers less well-paying jobs for people who lack post-secondary education (Bloom, 2006).

There is an established link between lack of education, lack of employment, and crime. Education levels were discovered to be low among the prison population (Smith & Silverman, 1994; Freeman, 1991; Bloom, 2006), with approximately 75 percent of inmates being functionally illiterate (Trites and Fiedorowicz, 1991). Forty percent of federal and state inmates had less than a high school education (Bloom, 2006), and 60 percent of male prisoners aged 25-34 had less than 12 years of education (Freeman, 1991). Although some research has shown that GED certificates did not increase employment rates (Tyler & Kling, 2006), and education did not guarantee employment, a minimum

of a high school diploma or the equivalent has an important influence on post-release employment.

Higher education and post-release success has a recognized positive correlation (McCollum, 1994). Tyler and Kling (2006) found that minority inmates who had obtained a GED while in prison significantly enhanced their post-release employment rates, and Marano (2003) indicated that post-secondary education for inmates increased post-release employability. Needels (1996) also found in her research that ex-offenders who had completed high school had higher employment and earnings than those who had not.

Other research has revealed that the education levels of ex-offenders have had an influence on employers. In a 1996 study of employer attitudes towards hiring ex-offenders, Albright and Denq identified factors to be taken into consideration when addressing the ex-offender employment issue. These tended to increase or decrease an ex-offender's chances of obtaining employment. Specifically, Albright and Denq observed how employer attitudes towards hiring ex-offenders were affected by: ex-offenders' education level, government incentive programs to hire ex-offenders, the type of offense committed, and the relationship of the crime to the job to be filled.

The results revealed that the willingness to hire ex-offenders was low among employers. About 12 percent of employers "strongly agreed" or "agreed" to hire ex-offenders, 42 percent "strongly disagreed" or "disagreed" to hire ex-offenders, and 46 percent were neutral. When level of education was introduced as a factor for hiring, it was found that the willingness to hire ex-offenders increased from 12 percent to 32 percent for ex-offenders with a college degree.

Educating prisoners increases the likelihood of their finding employment upon release (Anyaso, 2005; Tootoonchi, 1993). Most literature will agree that in general the higher a person's level of education, the better the employment they will have. Since a large proportion of the prison population has low education levels, increasing their levels of education would help to neutralize the negative stigma associated with the criminal record of one seeking post-release employment. In addition, perhaps ex-offenders with higher levels of education have a knowledge base that will be advantageous to them in the labor market.

Career and Technical Education Program Completion

Offenders involved in CTE programs have higher rates of employment than those that are not (Drake, 2003). Prison systems have developed these programs in an attempt to educate offenders and increase their employability skills. Possessing job skills increases the likelihood of finding post-release employment (Anyaso, 2005). It is vitally important that ex-offenders have a marketable skill or trade that makes them valuable to employers (Harrison & Schehr, 2004). CTE programs are intended to counteract the effects of poor education and low employment, commonly found among correctional populations (Bouffard et al., 2000). These programs help to provide inmates an opportunity to be skillfully trained, so that they can have a higher probability of securing work once released.

Saylor and Gaes believed that previous research on prison career and technical training outcomes had yielded insignificant results on the effects of such training. Their 1997 study, known for its sophisticated methodology, evaluated whether career and technical skill training and work in prisons could

help to overcome employment barriers that ex-offenders faced in the labor market.

The Post-Release Employment Project (PREP) was designed to evaluate the longitudinal impact of prison work experiences and CTE on ex-offender behavior and post-release outcomes of recidivism and employment. Data were collected for over 7000 offenders placed into one of three research groups: (1) those employed in federal prison industries, (2) those who successfully completed a CTE program, (3) and those who were selected to be members of the comparison group. The latter group was matched to the other two by similar characteristics.

The results of the study showed that the prison programs had a positive effect on post-release outcomes. Ex-offenders who were part of the CTE or prison industries groups had higher employment rates than the comparison group, thus demonstrating that these types of programs increase the likelihood of post-prison employment.

Drake (2003) also conducted a study using a career and technical group, and a comparison group. He found, similar to Saylor and Gaes, that the career and technical group had higher employment rates than the comparison group. Drake's regression model indicated that being in the career and technical group was predictive of obtaining post-release employment.

In a methodology-based analysis of literature Bouffard et al. (2000) assessed the empirical status of evaluation research available on the effectiveness of CTE and employment programs on offender outcomes after release. The studies they assessed derived from research completed within the

previous 15 years. Only program outcome evaluations were included in their review of literature. The research topics of the studies concerned CTE programs (job training, correctional industries, and community employment). Among the 25 research studies that were examined, 13 of them were CTE studies. Using the Maryland Scale for Scientific Rigor (The Maryland Scale), a systematic criteria ranking method, the researchers ranked the methodology of each research study and drew conclusions based on the study's ranked effectiveness.

Although some research studies found that CTE programs were associated with unfavorable post-release outcomes (Bloom, Orr, Cave, Bell, Doolittle, & Lin, 1994), Bouffard et al. (2000) concluded that CTE programs were effective tools of success for ex-offenders. They increased education and improved employability.

In two similar studies Morrissey et al. (2005) as well as Lichtenberger and Ogle (2005) studied the post-release outcomes of CTE program completers versus non-completers. Both studies found that completing a CTE program increased the stable rate of employment of ex-offenders.

In a 2006 study of Virginia ex-offenders released in fiscal year 2001, Lichtenberger used recommendations from Lichtenberger and Ogle (2005) to examine the effects of CTE on post-release outcomes of recidivism and survival probability. Lichtenberger created sub-groups for CTE program completion status--completion, not at fault non-completion, and at fault non-completion—to be compared to control groups. Using a technique from Saylor and Gees (1997), comparison groups were created for the three completion status groups. Using logistic regression, a propensity score was created using variables to match

members of the completion status group with members of the control group. Propensity scores are predictive measures used to calculate the likelihood that a non-participant has the same characteristics as those in one of the CTE completion status groups. The variables used to match the groups were: time served, marriage status, offense type, custody level, highest education level completed, race, and sex. The study found that CTE programs had more of a positive post-release effect on completers than non-completers.

The major purpose of CTE programs in correctional facilities is to teach inmates career and technical skills (Imel, 1986). There is a strong need to foster employability skills that reflect labor market needs and trends (Dirkx, Kielbaso, & Corley 1999). Equipped with career skills, ex-offenders are more likely to obtain employment that will eventually provide them with at least a living wage.

Effects of Habits and Attitudes on Employment

A person's behavior and lifestyle practices have a direct effect on their obtaining and maintaining a job. In order to better understand how habits and attitudes can affect employment, this section will focus on the literature concerning the way in which drug and alcohol use, infractions, and repeated offending influence employment outcomes.

Drug Use and Alcohol Abuse

Alcohol and drug abuse may prevent an individual's obtaining, and even more importantly, maintaining a job as a member of the general population. It stands to reason that since about 80 percent of incarcerated people have an alcohol or drug abuse problem these issues would have an influence on the prison population as well (Mukamal, 2000). A significant proportion of state

prisoners have serious substance abuse problems that may limit their ability to participate in the labor market (Solomon et al., 2004). In his 1998 study, Bushway used data from the National Youth Survey (NYS) to test for the relationship between criminal behavior, arrest, and stable employment. Involved were 1,725 participants aged 11 to 17 at the time of initial interview in 1977. The participants were interviewed annually until 1980, and then at three year intervals beginning in 1983. The study focused upon first arrests during the period from 1983 to 1986.

Women were excluded from the study because there were few (4 out of 191) that satisfied the criteria to be included in the analysis which would have skewed the estimation of the separate impact of arrest on employment for women. African American men were also excluded due to the inconsistencies between their self-reported information and their official records.

After these exclusions, 178 white males out of school remained in the workforce in both periods and without an arrest record by 1983. Stable employment was measured by job length (number of weeks worked at the major source of employment over the last year) and job stability (working one job in the year for 40 weeks or more, or working more than one job, but having a full year of employment at a single job). The sample was split into two groups of people: those who had never been arrested and those who had been arrested for the first time between 1983 and 1986. Bushway found that being in contact with the criminal justice system directly damaged employment prospects. He also concluded that alcohol abuse may have contributed to employment difficulties for

participants during the study period. This implies that employment can be affected by alcohol use or abuse.

Heinrich (2000) used focus groups and secondary literature to obtain information on ex-offender employment and to report the findings to increase awareness of the barriers ex-offenders face when seeking employment. Inability to secure stable employment and income tends to push ex-offenders back into the criminal justice system. Heinrich facilitated three separate focus groups. Two of these consisted of Chicago employers in the printing industry, and the third consisted of male ex-offenders. All focus groups addressed and discussed the issues surrounding ex-offenders and employment. A number of issues were identified as being influential on ex-offender employment. The taking of substances (drugs/alcohol) was noted as having a significant impact on ex-offender employment. As a matter of fact, Heinrich found that substance abuse (drugs/alcohol) was the major cause of poor job attendance and low job retention.

Freeman (2003) used data from previously conducted surveys as well as existing administrative data to examine questions and issues pertinent to ex-offenders including: employment, recidivism, and medical issues. Of particular interest was the most widely publicized medical problem that inmates have--drug and alcohol abuse. Criminal justice systems must address medical issues (drug/alcohol illness) among offenders if they wish to reduce recidivism and improve employment prospects of ex-offenders.

For Freeman's study, the total population of ex-offenders was 4.7 million persons. Males averaged 87 percent of the population, blacks averaged 40

percent of the population, and people between the ages of 18 and 34 averaged 66.6 percent of the population. Through examining and analyzing the data and surveys, Freeman's statistics suggested that drug and alcohol illness of inmates could impair their success in the job market. He stated that before training inmates for employment, medical and mental issues (drug and alcohol abuse issues) had to first be addressed. Improvement on these was necessary to promote more positive employment outcomes--a person's ability to secure and maintain legal employment.

Infractions

There is very little literature on infractions (major or minor) and employment, thus leading to the conclusion that this topic has not been extensively researched yet. That being said, infractions are included in this study because they are believed to represent an influence on behavioral patterns within prison which may have an effect on post-release employment. Previous literature indicates that infractions are related to offenders' attitudes while incarcerated. Behavior issues that exist while in prison may also exist outside of the correctional facility.

Drake (2003) conducted a study to determine how an offender's involvement in a correctional employment program, at the Washington State Department of Corrections, affected infractions during incarceration, post-prison employment rates, post-prison wages earned, and recidivism. Drake used a test group and a comparison group, the former consisting of offenders who were involved in Class I industries at some time during incarceration (those contracted through a private sector business and the DOC), the latter comprising those who

did not participate in Class I industries. The two groups were selected from a cohort of offenders who were released from prison sometime between 1992 and 1996. The groups were composed so as to be similar in demographic variables: sex, offense type, age, race, and number of years incarcerated.

Drake's study found that within three years of release, a higher percentage of the test group had infractions (57%) compared to the control group (46%). In addition, Drake found that approximately 69 percent of the test group obtained employment within one year after release compared to 58 percent of the comparison group. Furthermore, results of the regression model indicated that being in the test group was predictive of obtaining employment. It was noted that the test group had a higher percentage of infractions because they were under closer supervision. Being a part of the Class I industries, allowed more opportunities for offenders to commit infractions. The data suggest that having higher infraction rates while incarcerated may be predictive of more positive post-release employment outcomes because of participation in rehabilitative programs.

Repeat Offender Status

Entering the prison system, being released, and then entering it again for another crime or for violating parole conditions is a major problem that prison officials currently face. Employment helps prevent ex-offenders from committing crimes after their release, therefore reducing the number of people that re-enter the prison system after release. But how does repeated offending influence ex-offender employment situations?

Being incarcerated affects availability for employment. An offender who is serving time in prison will not be able to find and secure employment until they are released. Also, having been previously incarcerated suggests a potential habit of offending. Prison administrations strive to develop programs that will facilitate successful employment opportunities for ex-offenders upon their release, and, in turn, reduce repeat offending. Repeat offenders spend additional time incarcerated and have less time available to be employed. Even when a repeat offender does obtain employment, their history of repeated incarcerations can decrease their post-release earnings (Needels, 1996). Therefore, repeated offending restricts employment opportunities and has a negative effect on employment for ex-offenders.

On the other hand there is a possibility that spending more time in prison can result in a positive outcome. Sabol (2007) reported that offenders with prior incarcerations had an increased likelihood of finding post-release employment, while being a first-time offender lowered the probability of securing employment. Sabol concluded that this might be due to the fact that ex-offenders with prior incarcerations are more likely to be supervised, and post-release supervision seems to increase the likelihood of positive post-release employment outcomes.

Also, as with the time-served variable, the more time an offender spends in prison the older they are and the more opportunity they have to participate in and complete prison education and rehabilitative programs, which have been noted in literature as having a very positive effect on the post-release employment of ex-offenders. In this light, repeated offending could possibly put

an offender in a better position to secure employment and better employment consistency.

Review of Literature Summary

The purpose of this chapter has been to review the literature on employment and its relationship to specified variables: age, race, education level, drug use, alcohol abuse, career and technical education completion, offense type, time served, repeated offending, and infractions.

Unemployed ex-offenders are three times more likely to return to prison than ex-offenders who have jobs (Houston & Moore, 2001). Legitimate employment can reduce the economic incentive to commit crimes and also connect ex-offenders to more positive social networks and daily routines (Bloom, 2006). Since unstable employment leads to increased offending (Bushway, 1998), knowing the variables that affect employment will help to improve preparation of offenders for post-release employment. Though employment does not automatically reduce crime (Sung, 2001), post-release employment is a good way to reduce the possibility of an ex-offender's re-offending and returning to the correctional system.

People 40 years old and older were consistently found to have better employment patterns than those younger. In general, studies showed that white people had better employment rates than blacks, and employers seemed to use race as a way to weed out undesired applicants, often blacks. The type of crime committed was found to have an influence on employment, especially where a violent crime was concerned. Though some studies have found that violent offenders have had better employment rates than non-violent offenders,

employers said that they were less likely to hire an ex-offender with a violent offense record. The more serious the crime, the more time spent in prison. The more time spent incarcerated, the less time offenders had available to be employed.

CTE programs are utilized in the general population to help prepare people for employment within the workforce. Studies found that CTE programs in prisons decreased recidivism, increased education, and improved employability of the offender population. In addition, studies have found that employers prefer to hire people with higher levels of education. There are fewer well-paying opportunities for individuals with less than a post-secondary education (Bloom, 2006) and even less employment opportunities for ex-offenders with less than a high school education.

Alcohol abuse and drug use contribute to employment difficulties and have been found to be a major cause of low job retention. Having behavior problems while in prison (infractions) may be predictive of potential behavior problems once outside of prison. These behavior issues can potentially carry over to an employment situation and will impair its success. People who continuously offend spend additional time in prison and have even less time available to be employed.

Gaining a thorough background of the literature available on the proposed influential variables of post-release employment thus secures a better understanding of the direction of this study.

CHAPTER III

Methodology

The purpose of this chapter is to explain the study's research design. It discusses the release cohort, the study population, the predictor variables, the criterion variables, data collection procedures, the use of data, and the statistical analysis employed in the study.

Research Design

The pre-existing data, for the fiscal year 2001 release cohort used for this study derive from the Virginia Employment Commission (VEC), Virginia Department of Corrections (VADOC), and the Virginia Department of Correctional Education (VADCE). From the aforementioned government agencies data was used concerning ex-offender earnings information in Virginia for fiscal year 2001 through fiscal year 2005, ex-offender demographic information as well as other ex-offender information from fiscal year 2001 through fiscal year 2005 (career and technical education program completion, age at release, race, education level, drug habits, alcohol habits, offense type, time served, major infractions, minor infractions, and repeat offender status).

Data from the VEC, VADOC, and VADCE were imported into a FileMaker Pro database program. The data were compiled and synthesized to place the needed information in FileMaker, and later the needed information was exported into an Excel spreadsheet.

The study examined the relative importance of 11 independent variables at predicting the employment consistency in terms of levels: number of quarters

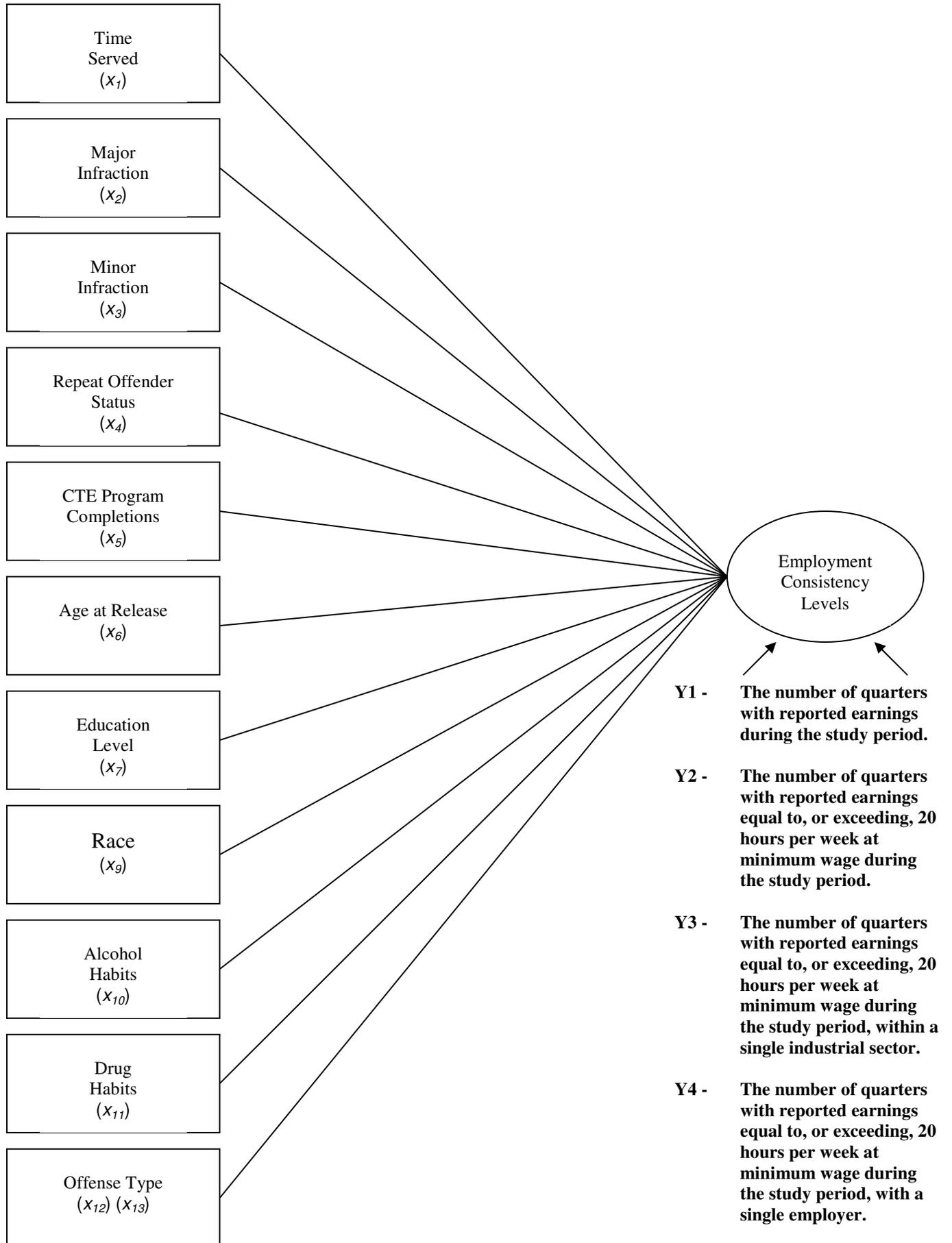
with reported earnings, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, within a single industrial sector, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, with a single employer.

Research Model

The same model was used for the analysis of the four employment consistency levels. This was because the same set of independent predictor variables was applied for the analysis of each of the four employment consistency levels.

For the model the dependent criterion variables were the four employment consistency levels; number of quarters with reported earnings, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, within a single industrial sector, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, with a single employer. The 11 independent predictor variables were: CTE program completions, age at release, race, education level, drug habits, alcohol habits, offense type (violent, non-violent, drug), time served, number of major infractions, number of minor infractions, and repeat offender status.

Figure 1. Research Model



Population

Study Population Criteria Elimination

The source of the study population was the fiscal year 2001 release cohort. It consisted of all adult persons, 18 years of age and older, released from all security level prisons in the Commonwealth of Virginia between July 1, 2000 and June 30, 2001. This cohort did not include juvenile detention releasees. The total number of ex-offenders in the 2001 release cohort was 9,244 (see Appendix A for demographic information on total population). Individuals in the total cohort population not meeting specific criteria were excluded from the study population.

Starting with 9,244 ex-offenders in the total population, 997 females were eliminated. Because there were so few females within the release cohort (less than 11 percent of the population), it was decided that it was not worth attempting to uncover or relate any significance in or to the findings. This left a total of 8,247 males. An ex-offender had to have been incarcerated, during the commitment immediately prior to release in fiscal year 2001, for a minimum of 365 days. All of those who were incarcerated for less than 365 days were eliminated from the study group. Being incarcerated for at least a year increases the likelihood that an offender had an opportunity to participate in prison programs developed to improve success upon release, such as a CTE program. This also afforded an offender the opportunity to fully complete a program. After eliminating 1,707 people who had served fewer than 365 days from the population, 6,540 ex-offenders remained.

In the next step 2,146 individuals were eliminated from the study population because they had recidivated. Ex-offenders were considered recidivists if they returned to a Virginia prison for either parole violations or committing a new crime, during the study period. Some studies distinguish between the two, but for this study both instances were counted as recidivating. Recidivists were excluded because this study focused on ex-offenders who stayed out of the prison system. Focusing on these ex-offenders and the relative importance of variables that may affect their employment patterns provided more unambiguous findings regarding the relative importance of those variables to post-release employment. This left 4,394 people in the study population.

To be included in this study, individuals had to have reported earnings data in Virginia for at least one quarter during the study period. Ex-offenders were tracked for 17 quarters after release beginning with the quarter of release. Information was available from fiscal year 2001 through fiscal year 2005. Certain releasees may have been employed outside of Virginia, or employed within Virginia without having reported earnings information, and although they did not recidivate, they did not have any earnings data available in Virginia, and therefore were not included in the study population. This group comprised 1,373 ex-offenders and was thus eliminated. The study population at this point was composed of 3,021 ex-offenders.

Missing Data Elimination

Subjects were excluded from the study group for having information missing in any of the fields measuring the variables under study, except for repeat offender status, and the number of CTE completions. If there was no data

entered in the fields measuring these two variables, it was assumed that the ex-offender had no previous Virginia felonies served or no CTE program completions. For all the rest of the entries, without any data in the fields, there was no way to establish an accurate measure of the variable. A total of 492 people were eliminated for having missing information. In the “highest grade completed” field, there were 408 ex-offenders with blank records and 48 ex-offenders with “0” as an entry. These ex-offenders were eliminated because there was no way to determine an accurate grade level completed by them. In the “alcohol habits” field, 35 ex-offenders had blank records, and in the “drug habits” field there was one ex-offender with a blank record. These subjects were also eliminated. Removing all these people left 2,529 in the study group.

There were 33 ex-offenders coded in the data as either “Ungraded” or “Special Education” in the “highest grade completed” field. These individuals were excluded from the study group because there was no way to determine their specific grade level. Also, the ex-offenders who were reported in the “GED” group were added into the twelfth grade category. This left 2,496 ex-offenders.

Of the remaining ex-offenders in the study population, those that were not identified as “Black” or “White” in the race field were eliminated from the study group. The reason for this was because other than “Black” or “White,” the ethnic groups left in the population represented a very small percentage of the population. As a matter of fact, the combined number of people in these ethnic groups did not even total one percent of the population. After eliminating “Asians,” “Hispanics,” “Indians,” and “Unknown,” 2,476 ex-offenders were left in the study population.

Of the remaining ex-offenders in the study population, 12 were eliminated for having an entry of “NA” in the “alcohol habits” field. It was decided that such an entry did not provide enough information to determine the extent of the ex-offender’s alcohol habits. Moreover, eliminating these people reduced the risk of producing false negatives. This left 2,464 ex-offenders, of which 70 were eliminated for having an entry of “TC” in the “alcohol habits” field. Because the code “TC” means that one is eligible for intake into a Therapeutic Community, the extent of the substance (alcohol) use was unknown.

Finally, of the remaining 2,394 ex-offenders, nine were eliminated for having an entry of “NA” in the “drug habits” field. This left 2,385 ex-offenders, of which 71 were eliminated for having an entry of “TC” in the “drug habits” field. The “NA” and “TC” entries were eliminated by applying the same reasoning used to eliminate them in terms of alcohol habits. This left a final study group of 2,314 ex-offenders.

Predictor Variables

Time Served

Because all ex-offenders in the study population spent a minimum of 365 days incarcerated during the period immediately prior to release in fiscal year 2001, in this sense, time spent incarcerated was used as a criterion for being included in the study group. Time served was also used as a predictor variable and was measured by the exact number of days an ex-offender was incarcerated during the sentence prior to release in the 2001 cohort. The amount of time served may very well be an important predictor of post-release employment

patterns. The number of days in prison for the most recent commitment was calculated by subtracting the release date from the intake date.

Repeat Offender Status

Repeat offender status refers to an offender who had an incarceration record in Virginia prior to the most recent incarceration commitment that allowed him to be included in the 2001 release cohort. The number of Virginia felonies served was used to measure the repeat offender variable. Information on the number of Virginia felonies served was obtained from existing VADOC data. According to them the number (count) of Virginia felonies served is a “prior adult recidivist indicator identifying the number of times an offender has previously served a felony sentence in Virginia, excluding the current commitment” (Virginia Department of Corrections, 2003). It also excludes felonies in other states, federal prisons, and does not include any juvenile records. For the purposes of this study, if an offender in the study population had one or more VA felonies served, he was considered a repeat offender. The information is coded as the actual number (count) of previous felonies on record in Virginia. The range is zero to six. There are offenders whose records are blank for this variable, and in such cases, it was assumed that this signified no previous Virginia felonies served. The blank was recoded as a “0”.

Career and Technical Education Program Completion

Literature indicates that inmates that participate in CTE programs are more employable and more often obtain employment once released. An even better predictor of employment success is to complete a CTE program.

In Virginia the prison education system is slightly different from the traditional Virginia secondary school system. In the latter completing a CTE program usually requires an individual to complete a series of CTE courses. In the VADCE system, completing a CTE course is considered completing a career and technical education program (see Appendix G for CTE programs offenders participated in).

The VADCE data on the latest exit code for vocational program participation prior to release were used to determine CTE program completion. The exit code for fully completing such a program is “C1.” An offender received a C1 for each individual CTE program completed during the current sentence. C1 completion was coded as a “4.”

A field was then created that totaled all of the “4s” for an individual ex-offender. From that the total number (count) of full CTE program completions an offender had achieved were displayed. The number of these programs fully completed for ex-offenders in the study population ranges from zero to six.

Certain ex-offenders had blank data entries, but this was not treated as incomplete or missing information. Instead it was interpreted to mean that the ex-offender did not take any CTE courses, and therefore was coded as “0” to represent that no CTE programs had been completed.

Evidence of Negative Behavior

All offenders have the potential to manifest negative behavior that may be detrimental to employment. Whether or not they display such behavior while in prison may be predictive of similar behavior that may affect employment patterns following release. The number of infraction occurrences for the latest

commitment was used as a measure of negative behavior of an ex-offender. Infractions demonstrate an ex-offender's inability to follow rules and regulations, thus becoming a disciplinary problem. These traits may be detrimental to post-release employment. The information on infractions came from the VADOC.

The infraction count was separated into two variables, the "number of major infractions" and "number of minor infractions" (See Appendix B for description of major and minor infractions). In each field a calculation totaled the actual number (count) of each level of infractions for an ex-offender and displayed the total number. In the study population, the major infractions count ranges from zero to 92, and the minor infractions count ranges from zero to 128. The number of major infractions and minor infractions for the current sentence were then divided by the number of days served for each ex-offender in the study population. The number was thus converted into a rate for each ex-offender. With offenders spending varying amounts of time in prison, it is understandable that offenders who serve longer sentences have more opportunities to accrue infractions. So if they had a high number of infractions it would be expected that they were incarcerated for a long period of time, as opposed to an offender who has spent minimal time in prison but has high numbers of infractions. Using the exact number of infractions essentially portrays the notion that all offenders had equal opportunity to accumulate infractions. Using an infraction rate accounts for the amount of time an ex-offender was incarcerated, gives a true depiction of their habits, and allows for standardized comparison of the affect of infractions among ex-offenders.

Having a percentage rate provided a more accurate depiction of an ex-offender's negative behavior. The rate was used as the measure for the evidence of the negative behavior variable. It was hypothesized that the higher the percentage rate of an ex-offender for major infractions or minor infractions, the less likely he was to have positive post-release employment consistency, as compared to those ex-offenders with a lower infraction rate in the same infraction category.

Certain records in both the major infraction and minor infraction fields were blank. Instead of counting these instances as incomplete information, they were considered as equivalent to having no infractions. These records were recoded as "0."

Age at Release

Age was used as a predictor for employment patterns in this study because the literature states that a person's age can affect employment patterns for the general population. Studies involving ex-offenders have also found a relationship between age and ex-offender employment patterns. The source of information on age was the VADOC. The information used was date of birth and release day.

The age at release for an offender was computed by subtracting the date of birth from the release date. This furnished a number taken out to two decimal places. Age was coded as the exact number of years old an offender was at release from the VADOC. The study population had an age range from 18 to 70.

Race

A person's race is also mentioned in the literature as a factor that affects employment patterns in the general population. Data on race for the study population is available through the VADOC. The information the VADOC has on inmate ethnicity is self-reported by offenders during intake into the prison system. "Black" coded as "0" and "White" coded as "1" were the only two race categories included in the study group.

Educational Level

There is evidence in previous studies that education level is important in obtaining employment and predictive of consistent and positive employment patterns for the general population. To the extent that ex-offenders have a negative stigma attached to them due to their criminal records, it makes sense that they will look better to employers when they have achieved a certain level of education. Moreover, being educated may improve an individual's ability to consistently stay in their job.

Education level refers to the highest grade or level of education completed by an offender prior to the current incarceration sentence. The information for education level was provided by the VADOC and was based upon self-reporting by offenders during the intake process at the time of incarceration, so the level of accuracy is unknown, and at best this is a measure of school attendance not academic competence or achievement. The information was coded as a number to represent the grade completed (see Table 3).

Table 3***Grade Levels Number Codes***

Grade Level	Number Code
First Grade	1
Second Grade	2
Third Grade	3
Fourth Grade	4
Fifth Grade	5
Sixth Grade	6
Seventh Grade	7
Eighth Grade	8
Ninth Grade	9
Tenth Grade	10
Eleventh Grade	11
Twelfth Grade	12
Some College	13
College Degree	14
Graduate Work	15
Graduate Degree	16

Offense Type

The type of crime committed may have some influence or relative importance on the post-release employment consistency levels of ex-offenders. Offense type is the variable signifying the type of crime committed. The information on offense type was taken from VADOC data that were obtained during offender intake for the latest sentence being served prior to cohort release (see Appendix C for specific offense types). Offense type is not a general population employment predictor, but it is one that may have some level of significance on the special population of ex-offenders.

Offense type was derived from VADOC data on the initial most serious offense. The initial most serious offense was the offense for which the offender was committed to the VADOC. The offenses are coded using National Criminal Information Center (NCIC) codes and are grouped in three different categories: violent, nonviolent, or drug-related. For this study new categories were then recoded: violent as “1,” non violent as “2,” and drug-related as “3.” If any entries for this variable were blank they were eliminated.

In order to better interpret the three codes for “offense type” correctly in the final analysis, dummy variables were created. Instead of analyzing “offense type” as a categorical variable (violent as “1,” non violent as “2,” and drug-related as “3”), each offender would be categorized as “yes” or “no” for 1) violent, 2) non-violent, or 3) drug-related, thus making the variable dichotomous. Interpreting those results would be easier than trying to explain the change from “1” to “2” or “2” to “3” of a categorical variable.

Substance Abuse

The ability to obtain and maintain employment is negatively impacted by habitual substance abuse. Previous studies indicate offenders themselves mentioning that substance abuse had been one of the factors influencing negative post-release outcomes. Substance abuse for this study were separated into two categories, illegal drug use and alcohol abuse habits. Information for both categories was obtained through the VADOC. The data on alcohol habits and drug usage derived from offender arrest history, offender medical records, offender self-reporting, pre-sentence report/field report, or source unknown.

The alcohol habits field was coded in the VADOC database as six different extents of offender use. They were: not used=NO, heavy use=Y1, moderate use=Y2, occasional use=Y3, extent unknown=Y4, or not available=NA. For the purposes of this study only heavy use was used because it was assumed that this level would have a greater chance of impacting the employment consistency of ex-offenders. Ex-offenders in the study population were coded as heavy user, "1," or other, "0."

Illegal drug usage was coded into 11 different categories of the various types of drugs offenders used. The categories were: not used=NO, hallucinogens=Y1, heroin=Y2, opium= Y3, cocaine= Y4, synthetic narcotics= Y5, marijuana= Y6, amphetamines= Y7, barbiturates= Y8, drug type unknown= Y9, and not available=NA. While the VADOC database indicated the type of drug used, it did not provide the frequency of use. Drug use of any kind may have an effect on ex-offenders' employment consistency. For the purpose of this study,

anyone in the study population coded as “NO” was recoded as “0” for not used. All other drug users were coded as “1” for user.

Criterion Variables

Employment consistency was the focus of this study. Four employment consistency levels were observed to better determine the employment consistency of the study population. These employment consistency levels were; number of quarters with reported earnings, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, within a single industrial sector, number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage during the study period, with a single employer. These concepts represent different levels of stability of employment consistency patterns for ex-offenders. They were measured using fiscal year 2001 through fiscal year 2005 earnings data and employer information provided by the VEC. The VEC tracks earning information for individuals based on reported wages in Virginia. The VEC does not have data on earnings outside of the state that were not reported to the VEC nor earnings within the state that were not reported.

For the employment consistency levels 2, 3, and 4 a minimum quarterly earning level was established. This level represents what an individual would earn by working 20 hours per week at minimum wage for 13 weeks. The result was \$1,339. Minimum wage was the least a person working legally could make

during this study period. And 20 hours of work a week represented a significant portion of a workweek.

Employment Consistency Level 1

Employment Consistency Level 1 was coded as the actual number (count) of quarters an ex-offender had reported earnings of any amount during the study period.

Employment Consistency Level 2

Employment Consistency Level 2 was coded as the actual number (count) of quarters an ex-offender was employed earning at least \$1,339.

Employment Consistency Level 3

Employment Consistency Level 3 was coded as the actual number (count) of quarters an ex-offender was employed in the same industrial sector, earning at least \$1,339. If an ex-offender was employed in more than one sector where he earned at least \$1,339 in a quarter, the sector providing the most quarters of at least part-time employment was used.

Employment Consistency Level 4

Employment Consistency Level 4 was coded as the actual number (count) of quarters an ex-offender was employed with the same employer, earning at least \$1,339. If an ex-offender was employed with more than one employer where he earned at least \$1,339 in a quarter, the employer providing the most quarters of at least part-time employment was used.

Analysis Methodology

A regression model was used to analyze the data. Regression analysis seeks to provide answers to a very specific question such as, "What is the nature

of the relationship between a dependent variable and an independent variable?”

The relationship predicted is assumed to be linear.

Multiple regression is the statistical procedure used to predict variables on the basis of several other variables. Multiple regression analysis answers two important questions: (a) Is there a significant relationship between the criterion and predictor variables? And, if so (b) How strong, close, or reliable is the relationship? The multiple regression equation takes the form $Y = a + b_1X_1 + b_2X_2 + \dots + b_nX_n$. The “Y” is the value of the dependent variable (what is being predicted or explained), “a” (Alpha) is the constant or intercept, “b” is the slope (Beta coefficient) for “X”, and “X” is the independent variable that is explaining the variance in “Y”.

The Step-Wise method of multiple regression was used in this study to determine if the employment consistency levels 1, 2, 3, and 4 could be predicted or were influenced by career and technical education program completion, age at release, race, education level, drug habits, alcohol habits, offense type, time served, major infractions, minor infractions, or being a repeat offender. Step-Wise selection is the method of choice used when a researcher has several possible predictors and wants to narrow them to the ones that significantly contribute to the prediction of the dependent variable (Zavakos, 2006). This process excludes those independent variables that do not provide additional predictive value to the regression equation. Step-Wise regression essentially performs multiple regressions a number of times, each time removing the weakest correlated variable. At the end the variables that explain the distribution best remain.

Attempting to explain the variance in the level of one variable on the basis of the level of multiple variables is useful in predicting behavior because behavior is likely to be influenced by some combination of several factors. This type of analysis has been used in previous behavioral research studies (Bakker, Van Der Zee, Lewig, & Dollard, 2006; Zavaikos, 2006). In a multiple regression an account for the variance in the scores is what is observed. Using the Step-Wise method should ensure that the smallest possible set of predictor variables will be included in the research model, making it the most efficient model possible.

Step-Wise regression equations were used to examine how: days served (x_1), major infractions (x_2), minor infractions (x_3), being a repeat offender (x_4), the number of CTE program completions (x_5), the age at release (x_6), the education level (x_7), race (x_9), alcohol abuse (x_{10}), drug use (x_{11}), violent offense (x_{12}), and drug offense (x_{13}) predicted the number of quarters with reported earnings (Y_1); predicted the number of quarters earning a minimum of \$1,339 (Y_2); predicted the number of quarters during which a minimum of \$1,339 had been earned within the same industrial sector (Y_3); and predicted the number of quarters during which a minimum of \$1,339 had been earned with the same employer (Y_4).

Methodology Summary

This study was designed to examine the way in which predictive selected variables concerning: CTE program completions, age at release, race, education level, drug habits, alcohol habits, offense type, time served, major infractions, minor infractions, and repeat offender status affected being employed, consistent employment, industrial sector consistency, and employer consistency. Existing

data from the VADOC, the VADCE, and the VEC were used to obtain information needed on the fiscal year 2001 Virginia release cohort. Step-Wise multiple regression analysis was applied to analyze the data, using the SASS statistical program.

CHAPTER IV

Analysis and Results

Introduction

The purpose of this study was to determine the importance of selected demographic, educational, behavioral, and criminal history variables in predicting four measures of the employment consistency of former offenders. Multiple regression analysis was used to determine which combination of the predictor variables best explained each measure of employment consistency.

In this chapter the analyses and results of the investigation are presented. The dependent variables were the: number of quarters with any reported earnings (model 1), number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage (model 2), number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage, in the same industrial sector (model 3), and number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage, with the same employer (model 4). The 11 independent variables were: days served, number of major infractions, number of minor infractions, repeat offender status, number of career and technical education program completions, age at release, education level, race, alcohol abuse, drug use, offense type (violent offense and drug offense). The beginning of this chapter presents characteristics of the sample. Then the results of the Step-Wise multiple regression analysis for each employment consistency model will be discussed.

The study population represented a total of 2,314 male ex-offenders in the study population. Of these 65.47% were black/African American (see Table 4). The large number of black ex-offenders in the study population is consistent with the high percentage of blacks within the VADOC population (65.5%). In terms of race the study population is a reasonable reflection of the actual Virginia prison population.

Table 4
Demographic Characteristics of the Sample Population – Race

Race	Number of Ex-offenders	Percentage of Population
Black	1,515	65.47%
White	799	34.53%
Sample Total 2,314		

The study population consisted of ex-offenders ages 19 years and above (Table 2). Within the study population 55.27% were between the ages of 26 and 40, with a study population mean age of 35.57 (Table 5). This mirrors the VADOC inmate population in which the majority falls within the same age range category. Most of the study population was convicted of a non-violent crime: 42% were non-violent offenses and 23.34% were drug-related offenses (Table 5). This better explains the high concentration of ex-offenders serving two years or less prison sentences. Because the less severe the offense the lesser amount of time a person will spend incarcerated.

Table 5
Incarceration Characteristics of the Sample Population

Type of Conviction	Number of Ex-offenders	Percent of Population
Violent	802	34.66%
Non – Violent	972	42.00%
Drug Related	540	23.34%
Days Served		
365 – 730	677	29.26%
731 – 1,095	416	17.98%
1,096 – 1,460	263	11.37%
1,461 – 1,825	211	9.12%
1,826 – 11,531	747	32.28%
Age at Release		
Under 25	384	16.59%
26 to 40	1,279	55.27%
41 and over	651	28.13%

Sample Total 2,314
 (See Appendix D for frequency count for Age at Release)

It is noteworthy that the vast majority (79.47%) of the study population were not heavy alcohol users (Table 6), but almost the same percentage of ex-offenders (71.56%) reported using some type of drug prior to incarceration for the current sentence. Moreover, 67.89% of the study population served their first Virginia felony as part of the 2001 release cohort. Ex-offenders in this study

population had minimal behavioral problems while incarcerated. Among them only 54.67% had one or fewer minor infractions (Table 6), with a mean of 4.20 infractions (Table 8). Following the same trend, 92.01% of the study group had one or fewer major infractions (Table 6) with a median of zero (Table 8). The low numbers of infractions may also be due to the higher concentration of people that served two years or less in prison because the less time spent incarcerated, the fewer opportunities there were to misbehave.

Table 6***Negative Habits/Behavior Characteristics of Sample Population***

Alcohol Abuse	Number of Ex-offenders	Percent of Population
Heavy User	475	20.53%
Non Heavy User	1,839	79.47%
Drug Use		
User	1,656	71.56%
Non-User	658	28.44%
Number of Previous VA Felonies		
0	1,571	67.89%
1 - 5	743	32.11%
Number of Minor Infractions		
0 – 1	1,265	54.67%
2 – 128	1,049	45.33%
Number of Major Infractions		
0 – 1	2,129	92.01%
2 – 92	185	7.99%

Sample Total 2,314

See Appendix B for frequency count of minor infractions

See Appendix B for frequency count of major infractions

See Appendix E for frequency count of Virginia felonies

Approximately 73 percent of the study population completed some level of high school (see Table 7). Of those that completed high school, 35 percent were high school graduates, 8.47 percent completed some college, 1.43 percent graduated from college, 0.30 percent completed some graduate work, and

another 0.30 percent earned a graduate degree (see Appendix F). Among the study population the mean highest grade completed was the tenth grade.

Table 7

Education Characteristics of the Sample Population

Highest Grade Completed	Number of Ex-offenders	Percentage of Population
Elementary (1 to 5)	22	0.95%
Junior High (6 to 8)	352	15.21%
High School (9 to 12)	1,698	73.38%
College (any)	229	9.90%
Graduate School (any)	14	0.60%
CTE Program Completion		
Completer	360	15.56%
Non-Completer	1,954	84.44%

Sample Total 2,314

See Appendix F for frequency count by grade level

Looking at the descriptive statistics of the criterion variables (see Table 9), the mode of the fourth consistency level at first glance seems questionable. It is important to keep in mind that the “1.00” signifies the most frequently occurring value (number of quarters) that occurred in the fourth consistency level’s distribution. This simply means that ex-offenders in the study group more frequently had one quarter of earnings information that met the criteria for this employment consistency level. This value does not necessarily have to follow any specific pattern.

Table 8***Selected Characteristics of the Sample Population***

Characteristic	Range	Mean	Median	Mode
Number of Previous VA Felonies	0 – 5	0.47	0.00	0.00
Age at Release	19.24 – 71.75	35.57	34.73	22.61
Days Served	365 – 11,531	1769.49	1175.50	616.00
Minor Infractions	0 – 128	4.20	1.00	0.00
Major Infractions	0 – 92	0.55	0.00	0.00
Number of CTE Completions	0 – 6	0.19	0.00	0.00

Table 9***Descriptive Statistics on Dependent Variables***

Characteristic	Range	Mean	Median	Mode
The number of quarters with reported earnings	1 – 17	9.42	10.00	17.00
The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage	0 – 17	7.25	6.00	0.00
The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage, within a single industrial sector	0 – 17	5.80	5.00	0.00
The number of quarters with reported earnings equal to, or exceeding, 20 hours per week at minimum wage, with a single employer	0 – 17	4.95	4.00	1.00

Variable Selection

To prepare to use the Step-Wise method, the output from PROC (Procedure) GLM (General Linear Model) was viewed. PROC GLM generated a list of variables for potential inclusion in the regression equation for each model (see Appendix I for correlation matrix). From these generated lists, for each model all variables with a p-value less than α (.15) were included in the respective model. Due to the nature of the study and the homogeneity of the study population, the significance level was set at 0.15. Since this is an exploratory study, it is important to maximize inclusion of as many variables and to examine as many potential effects as possible. In this study it would be better to include all potential effects, than to exclude any potential effects.

The PROC GLM output did list interactions between variables. These were included in the regression only if they were significant. In order for an interaction to be significant all variables within it had to be significant by themselves (p-value less than 0.15). After the variables had been selected, the second step was to run PROC REG (regression) with the significant variables selected for each model. The regression produced interactions in which all variables in the interaction were not significant by themselves. So those interactions were removed from the model and PROC REG was run a second time. The estimates, t-values, and p-values from the second run were reported.

Both parameter estimates (b) and standardized estimates (β) were reported in the analysis because they were important in understanding the complete effect or influence of the predictor variables on the criterion variables. The b value is in the same metric as the original variables, and it reports the

change in the criterion variable due to a change of one interval of the predictor variable. The β value provides a standardized measure of how strongly each predictor variable influences the criterion variable. The benefit of β is that values of different predictor variables (which are in different metrics) are directly comparable since everything is standardized. Thus, allowing for estimating the relative contribution of different variables to the variance in the dependent variable.

The Models

In each model the employment consistency levels were measured using different criteria. The first model attempted to predict employment consistency as the number of quarters with any reported earnings during the study period. The second model attempted to predict employment consistency in terms of the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period. The criterion for the third model's employment consistency was the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period, within the same industrial sector. And finally, the criterion for the fourth model employment consistency was the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period, with the same employer. All variables included in each model were selected using a variable selection technique in SAS with PROC GLM and a significance level of 0.15.

Model 1

The variables that were found significant through SAS program were: the number of days served in prison, the number of minor infractions, repeat offender status, the number of CTE program completions, and violent offenses.

According to the results of the regression analysis, this model was composed of five predictor variables (see Table 9). Three of the five variables had a positive effect on the criterion variable, and two had a negative effect on the criterion variable. The number of quarters with any reported earnings decreased by 0.03 of a quarter (about 3 days) for every minor infraction an ex-offender committed while incarcerated for the current conviction. Moreover, for every felony conviction an ex-offender had, prior to the current conviction, the number of quarters with any reported earnings decreased by 0.47 of a quarter (approximately 43 days). On a positive note, for every CTE program an ex-offender completed during the current sentence, the number of quarters employed increased by 0.48 of a quarter (about half a quarter). Although CTE program completion influenced a positive change in the dependent variable, its predictive strength in this model was of the lowest among the predictor variables. Violent offense accounted for the greatest change in the dependent variable, and it was the strongest predictor in the model. If an ex-offender was incarcerated during the current sentence, for a violent offense, his number of quarters in this model increased by approximately one hundred twenty-two days.

Table 10***Model 1 Statistics***

Variable	Parameter Estimate (b)	Standardized Estimate (B)	Standard Error	t – value	p – value
Intercept	8.98		0.18615	48.25	< 0.0001
Time Served	0.00013	0.04	0.00007633	1.75	0.0795
Minor Infractions	-0.03177	-0.06	0.01254	-2.53	0.0114
Repeat Offender	-0.47030	-0.07	0.13627	-3.45	0.0006
CTE Completions	0.48990	0.05	0.22729	2.16	0.0312
Violent Offense	1.33874	0.12	0.24926	5.37	< 0.0001

$R^2 = 0.0319$

Model 2

The variables that were found significant through the SAS program were: the number of days served in prison, the number of minor infractions, repeat offender status, the number of CTE program completions, the age at release, the education level, and violent offense.

Among the seven predictor variables in this model, five had a positive effect, and two had a negative effect on the dependent variable (see Table 10). According to the analysis for every minor infraction an ex-offender committed during the current sentence, the number of quarters employed on average decreased by 0.05 of a quarter (approximately 5 days). Similarly, for every Virginia felony conviction, prior to the current conviction, the number of quarters in this model decreased by 0.58 of a quarter (about 53 days). In this model the predictive strength of these two negative predictors was relatively high, signifying

that these variables had a strong influence on employment consistency as measured by this model.

The educationally-related variables increased an ex-offender's employment consistency in this model. For each CTE program completed during the current sentence, the number of quarters with reported earnings above the cutoff increased by 0.56 of a quarter (about 51 days), and for every grade level completed, the number of quarters in this model increased by approximately 24 percent of a quarter (approximately 22 days). The predictive strength of education level was fairly high, but CTE program completion was the weakest predictor variable in the model.

Age at release in this model was a fairly strong predictor. This variable increased employment consistency in the model by 4.73 percent of a quarter (about 4 days) for every year older than 19 years of age an ex-offender was at release. Days served influenced the least amount of change in the dependent variable in this model, but if looked at collectively, days served could potentially increase employment consistency to a high degree for ex-offenders in this model. For every day served beyond 365 days, the number of quarters in model two increased by 0.02 days. Violent offense was thus again the strongest predictor in this model. It accounted for the most change in the dependent variable, increasing employment consistency by approximately 120 days.

Table 11
Model 2 Statistics

Variable	Parameter Estimate (b)	Standardized Estimate (B)	Standard Error	t – value	p – value
Intercept	2.58241		0.79507	3.25	0.0012
Time Served	0.00021416	0.06	0.00008657	2.47	0.0134
Minor Infractions	-0.05158	-0.09	0.01342	-3.84	0.0001
Repeat Offender	-0.58368	-0.08	0.15056	-3.88	0.0001
CTE Completions	0.56476	0.05	0.23897	2.36	0.0182
Age at Release	0.04731	0.08	0.01410	3.36	0.0008
Educational Level	0.23910	0.08	0.06075	3.94	< 0.0001
Violent Offense	1.32217	0.11	0.26102	5.07	< 0.0001

$R^2 = 0.0505$

Model 3

The variables that were found significant through the SAS program were: the number of days served in prison, the number of minor infractions, repeat offender status, the number of CTE program completions, the age at release, the education level, and violent offenses (see Table 11).

The first point to note is that the same seven variables that were selected in model two were selected in model three. As seen in the past two models, the number of minor infractions and being a repeat offender were negative predictors. If an ex-offender was convicted of a felony prior to the current sentence, per felony, his number of quarters in the model would decrease by approximately 54 percent of a quarter (approximately 49 days). For every minor

infraction an ex-offender received during the current sentence, the number of quarters decreased by approximately four percent of a quarter (about 4 days).

The number of CTE program completions, and the highest education level completed both produced a positive change on the criterion variable in this model, but the change was less than it had been in previous models. It should also be noted that the predictive strength of these two variables, though slight, had also decreased from the previous models.

Having a violent offense still affected the most change on the dependent variable, but it no longer had the greatest predictive strength of the variables in the model. Days served was still among the bottom two weakest variables in terms of predictive strength, and its effect on the change in the dependent variable had decreased from model two. Age at release had the greatest predictive strength on the dependent variable of all variables in the model. For every year older than 19 years of age, an ex-offender was at release, his employment consistency in the model increased by 6.80 percent of a quarter (about 6 days).

Table 12**Model 3 Statistics**

Variable	Parameter Estimate (b)	Standardized Estimate (B)	Standard Error	t – value	p – value
Intercept	1.26508		0.69877	1.81	0.0704
Time Served	0.00013379	0.04	0.00007608	1.76	0.0788
Minor Infractions	-0.04740	-0.09	0.01180	-4.02	< 0.0001
Repeat Offender	-0.53983	-0.09	0.13232	-4.08	< 0.0001
CTE Completions	0.39720	0.04	0.21003	1.89	0.0587
Age at Release	0.06801	0.13	0.01239	5.46	< 0.0001
Educational Level	0.17665	0.07	0.05339	3.31	0.0010
Violent Offense	1.11285	0.11	0.22941	4.85	< 0.0001

$R^2 = 0.0531$

Model 4

The variables that were found significant through the SAS program were: the number of days served in prison, the number of minor infractions, repeat offender status, the number of CTE program completions, race, education level, and violent offense (see Table 12).

In this the most stringent of all the four models, some of the same trends that had manifested themselves in the previous three models were repeated. Minor infractions and repeat offender status were still negative predictors. The changes minor infractions produced in the dependent variable increased and were the greatest changes this variable had had on the dependent variable in any of the four models. In addition, the minor infractions variable demonstrated

the greatest predictive strength of all variables in the model. Being convicted of a felony prior to the current sentence did not have the same drastic decrease on the dependent variable in this model as it had had in models one through three. It only decreased the number of quarters in this model by about 18 percent of a quarter (approximately 17 days), representing a 50 percent of a quarter decrease in the change on the dependent variable that had occurred in models one, two, and three.

CTE program completion and education level still affected a positive change on the criterion variable in this model, although there was a continuous declining pattern of these variables' predictive strength and influential change on the criterion variable.

Race appeared for the first time and estimated that if an ex-offender were white, the number of quarters in this model would increase by approximately 71 percent of a quarter (about 65 days). The days served variable's influence on the change on the dependent variable increased from model three. Moreover, in this model the predictive strength of the days served variable increased and was the strongest it had been throughout all four models. Being convicted of a violent offense, as seen in the previous three models, accounted for the largest change in the dependent variable by increasing the number of quarters in the model by approximately 98 percent of a quarter (about 89 days). Although this represents a very large change with the dependent variable, violent offense manifested a continuous decline in its effect on changing the dependent variable from model one to model four, as well as a slight decline in its predictive strength.

Table 13
Model 4 Statistics

Variable	Parameter Estimate (b)	Standardized Estimate (B)	Standard Error	t – value	p – value
Intercept	2.67377		0.56757	4.71	< 0.0001
Time Served	0.00026095	0.09	0.00006557	3.98	< 0.0001
Minor Infractions	-0.05763	-0.12	0.01069	-5.39	< 0.0001
Repeat Offender	-0.18448	-0.03	0.11589	-1.59	0.1116
CTE Completions	0.35515	0.04	0.19339	1.84	0.0664
Educational Level	0.14096	0.06	0.04906	2.87	0.0041
Race	0.71348	0.07	0.19808	3.60	0.0003
Violent Offense	0.98226	0.10	0.21128	4.65	< 0.0001

$R^2 = 0.0447$

Summary of Results

Each of the four models of employment consistency identified five common variables: the number of days served, the number of minor infractions, repeat offender status, the number of CTE program completions, and violent offenses. The positive change that the number of days served variable had on the dependent variable increased from model one to model two, then decreased in model three, and increased again in model four. The predictive strength of time served also followed a similar pattern. The number of minor infractions was a negative predictor in all four models. Its predictive strength and influence on

the change in the dependent variable followed an increasing pattern from model one through model four. Being a repeat offender was also a negative predictor in all four models. The change in the dependent variables due to this variable increased between model one and model three, but in model four there was a sharp decline on the change in the dependent variable. The predictive strength of repeat offender status also followed the same pattern of rise and decline.

The effect CTE program completions had on the dependent variable increased from model one to model two, but decreased in the third model and further decreased in the fourth. And finally, being convicted of a violent crime had a consistently large effect on the change in the dependent variable in all four models. If an ex-offender had been convicted of a violent offense for the current sentence, his number of quarters in the four models increased on an average of 1.20 quarters. This variable's predictive strength was also high in all four models.

These results will be discussed at greater length in Chapter Five. Moreover, conclusions and implications for future research will be addressed.

CHAPTER V

Summary, Conclusions, Discussion, and Recommendations

Summary of the Study

For ex-offenders, according to current literature, finding employment is critical to successful re-integration into society. Stable employment enables them to be productive, care for their families, develop valuable life skills, and strengthen their self-esteem and social connectedness (Petersilia, 2005). And although employment is an effective way to deter ex-offenders from engaging in criminal activities, merely obtaining a job is only the beginning of the solution. Previous research generically defines employment as obtaining a job and discusses its relationship to post-release outcomes of recidivism (Uggen, 2000; Freeman, 2003). This study, however, looked at employment consistency, as it has been stated that job retention is important to post-release success and in deterring ex-offenders from recidivating (Heinrich, 2000). Few studies have observed employment consistency (Morrissey et al., 2005), and fewer have used it as a focus. This exploratory study accomplished just that, as it is believed that maintaining post-release employment is important to the post-release success of ex-offenders.

The purpose of this study was to identify the relative importance and significance of the selected variables on employment consistency of ex-offenders. The study population consisted of 2,314 male ex-offenders, from all security level prisons in the Commonwealth of Virginia, who were released between July 1, 2000 and June 30, 2001. Employment consistency was

observed in the form of four levels which served as the four dependent variables for the study. The first was the number of quarters with any reported earnings during the study period. The second was the number of quarters with reported earnings equal to, or exceeding 20 hours per week at minimum wage during the study period. The third was the number of quarters with reported earnings equal to, or exceeding 20 hours per week at minimum wage during the study period, within a single industrial sector. And the fourth was the number of quarters with reported earnings equal to, or exceeding 20 hours per week at minimum wage during the study period, with a single employer. These employment consistency levels build on one another. The first level was the simplest measure of consistent employment. However, as the levels increased, the measures of consistent employment become more specific, so that the higher the level of employment consistency, the better the employment situation for the ex-offender.

Eleven independent variables were observed in the study to determine their predictive strength on the four separate employment consistency levels. These were: race, education level, the number of career and technical education program completions, illegal drug use, heavy alcohol use, age at release, offense type, time served, repeat offender status, the number of major infractions, and the number of minor infractions. These predictor variables were selected based on what previous research identified as affecting the employment of the general population as well as the employment of the ex-offender population. It should be noted that although other predictor variables could have been used, due to the limitations of the data, additional variables were not available.

Ideally, the predictor variables would be independent of one another, while being highly related to the dependent variables, so as to maximize the predictive power of each employment consistency model (see Appendix I for Correlation Matrix). Predictor variables used in the study being related to other predictor variables may have affected what variables were selected in the models during the analysis. As mentioned in chapter 3, the regression analysis yielded interactions between variables. But none of the interactions were selected for the models because all variables in the interactions were not individually significant.

Step-Wise multiple regression was the analytical approach used in this study to determine if the employment consistency levels 1, 2, 3, and 4 could be predicted or were influenced by any of the selected predictor variables. Using the Step-Wise method reveals which predictor variables are indeed of true significance to the different criterion variables. This method should ensure that the smallest possible set of predictor variables will be included in the research model, making it the most efficient model possible. The significance level was set at 0.15 because this was an exploratory study. Since there is not much research focused on ex-offender employment consistency, it was important to include as many variables as possible in order to provide a better comprehension of what influences their employment consistency. Future research may choose to use more conservative α levels of 0.05 or 0.01 to perform a more rigorous test.

Findings of the Study

The relative importance of the 11 selected variables on the four separate levels of employment consistency was evaluated, and each level was examined in a

separate regression model. The first employment consistency level represented the number of quarters with reported earnings any time during the study period. Five variables were found to be significant predictors of this level of employment consistency: time served, number of minor infractions, repeat offender status, CTE program completions, and violent offense. These five variables accounted for 3.19% of the variability in the first employment consistency level.

The second employment consistency level represented the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period. In addition to the same five significant predictors from level one, two additional variables were found to be significant predictors of this level of consistent employment: age at release and education level. These seven variables accounted for 5.05% of the variability in the second employment consistency level.

Employment consistency level three represented the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period, within a single industrial sector. The same seven variables that were found to be significant predictors in level two were significant predictors of this consistency level, and they accounted for 5.31% of the variability in the regression.

The fourth employment consistency level represented the number of quarters with reported earnings equal to or exceeding 20 hours per week at minimum wage during the study period, with a single employer. Seven variables were found to be significant predictors of this level, and six of those were the same as the variables in levels two and three. The difference occurred due to

the race variable replacing the age at release variable. These seven variables accounted for 4.47% of the variability in this level of consistency.

Based on the results of the analysis, it can be concluded that the variables--time served, number of CTE program completions, age at release, race, educational level, and violent offense--were relatively important to increasing employment consistency, as they were all positive predictors in all four employment consistency models. On the other hand, the number of minor infractions and repeat offender status variables were relatively important in lowering levels of employment consistency in the models, as these were negative predictors in all four employment consistency models.

Discussion

Maturity, motivation, and change in mind-set are important.

The offense type, time served, and age at release variables are related. The type of offense a person is convicted of is directly related to the amount of time he spends in prison, and the amount of time spent in prison is a factor in an offender's age at release. Thus, while each may have individual importance, they have unique effects that result from that relationship. It is important not to focus on the individual variables per say, but the types of considerations associated with each variable that make a difference to employment consistency.

Research indicates that employers are more reluctant to hire ex-offenders who were convicted of violent crimes than those convicted of non-violent crimes (O'Reilly & Asche, 1998). That reluctance may be an underlying explanation as to why Holzer et al. (2003) suggested that ex-offenders with a violent crime

conviction have a particularly difficult time obtaining employment. However, this present study's emphasis was not on obtaining employment, but rather the relationship associated with maintaining employment.

The average person would most likely expect that having obtained employment, violent ex-offenders would also have a harder time establishing and maintaining a consistent pattern of employment, than non-violent and drug offenders. The results of this study, however, showed the contrary. Being convicted of a violent offense was associated with increased employment consistency. Perhaps the nature of the crime is not the reason for this outcome. Conceivably the findings are an indirect result related to the mentality and sentence length differences between persons who commit violent crimes and those who commit non-violent and drug-related crimes. In other words, it is not actually committing the type of offense that is related to the outcome, but rather the factors associated with that type of offense.

By and large, violent offenders appear to have a different mind-set than non-violent or drug offenders. Violent offenders do not tend to be habitual offenders because they lack the career criminal mentality typically seen in non-violent and drug offenders (Lichtenberger & Ogle, 2005). Violent crimes are usually reactions to spur of the moment situations or crimes of passion. Moreover, unlike non-violent or drug-related crimes, violent crimes are not typically associated with some type of financial gain. Since a violent offender does not see illegal activities as income producing, once released he may be more apt to stay employed to generate income.

Violent offenders typically serve longer sentences and spend more time incarcerated. This allows for more opportunities to utilize rehabilitative services and complete available educational programs. Taking advantage of available intervention programs is an indicator that an offender is perhaps motivated to further develop knowledge and career skills, as well as change his mind-set, so he has a better chance at achieving consistent post-release employment.

In addition, due to the fact that non-violent and drug related offenders typically spend less time in prison, they are released back into the same environment where they may have maintained contact with old associates and their negative influences. Old associates can pressure or persuade an ex-offender to participate in illegal activities as opposed to staying legally employed. Violent offenders have more of a chance to break ties with those old negative associates because they are in prison longer.

As a result of spending more time in prison, violent offenders are older when released. As offenders become older they tend to mature, and, in line with literature, fare better in the job market (Diebold et al., 1997; Neumark et al., 1999). Maturation can influence an offender to abandon his criminal ways of thinking. Once released, an older, more mature, ex-offender is less apt to engage in criminal activities (Harrison & Schehr, 2004), and perhaps more prone to choose consistent legal employment. It should be noted that although being a violent offender and spending more time in prison are associated with better post-release employment consistency, this study neither advocates nor suggests that criminals commit violent offenses. Nor does it recommend that offenders be

given longer sentence lengths to help ensure consistent employment upon release.

Maturity and motivation can affect the mind-set of an offender and foster a positive change in that individual. Motivation can lead to participation in rehabilitative and educational programs while in prison. These programs and interventions are important in helping offenders stay motivated, learn, prepare for employment, and mature. As they mature they begin to change unfavorable behavior and habits, thus indicating a change in mind-set. As an offender's mind-set positively changes, he improves his chances of successfully altering his life patterns, and, once employed, maintaining some level of employment consistency.

Education is important in maintaining consistent employment.

Education as it pertains to higher levels of general academic skill and specific career and technical training can increase the probability of maintaining consistent post-release employment. Since literature demonstrates that increased education levels can lead to better post-release employment situations (Needels, 1996; Sung, 2001; Albright & Denq, 1996; Uggen, 1999) and completing CTE programs improves the employment stability of ex-offenders (Morrissey et al., 2005; Lichtenberger & Ogle, 2005; Saylor & Gaes, 1997), it was anticipated that the effects of education would be a positive influence upon consistent employment. And in the current study, the effects of education did, indeed, operate in the manner expected, although not to the extent expected. Throughout the analysis, either one or both measures of education used in this study improved the level of employment consistency.

Being educated does not guarantee an individual a job (Tyler & Kling, 2006), nor does it guarantee the ability to maintain a job. But previous research has found that people with higher levels of academic education are more attractive to employers and have a better chance of obtaining employment (Sung, 2001; Albright & Denq, 1996). And in the current study an ex-offender's education level was also important in maintaining a consistent pattern of employment. It should be noted that the education level variable's influence on the dependent variable became important when earnings were introduced into the analysis (model 2). After the second model, as the measure of employment consistency became more specific, the educational level variable decreased in its predictive power. This outcome suggests that ex-offender's educational level is more of an influence in establishing a minimum level of quarterly earnings. Once this minimum level of earnings was established, an ex-offender's general academic level had less to do with higher levels of employment consistency, possibly due to other influences.

Achieving higher levels of academic education promotes an increased core knowledge base for ex-offenders that can be advantageous in the labor market. It also signifies that an ex-offender has the ability to learn, which can be helpful in maintaining employment. But perhaps it is not merely these two aspects of academic achievement that make the difference in consistent employment. Achieving higher levels of academic education indicates that a person possesses a desire, motivation, and attitude to improve oneself. It also indicates the ability to stick with a challenge or a task. Having this type of attitude suggests that an ex-offender can maintain consistent employment

patterns. Therefore, for ex-offenders it is not necessarily their actual educational level as much as it is their attitude associated with achieving higher educational levels, which influence employment consistency. This better explains the decline in the predictive power of the educational level variable in the analysis.

The CTE completions variable was expected to increase in its predictive power in the more industry specific models. However, there was a slight decrease in this variables predictive power from model one to model four. Nevertheless, completing CTE programs had a constant positive influence on all levels of employment consistency. Although the actual skill or trade training received through CTE programs has been found to increase the likelihood of obtaining post-release employment (Anyaso, 2005; Harrison & Schehr, 2004; Saylor & Gaes, 1997), perhaps this is not the only influence on maintaining employment for the ex-offender population. In this present study no effort was made to determine whether an ex-offender was employed in the general area in which he had received CTE in prison, nor was there information available on the relatedness of a specific job to the career and technical training even if the ex-offender worked in the industry in which he had completed a CTE program. Because of that, it is possible that once employed, relatedness, or unrelatedness, of the job to career and technical training received did not influence consistent employment. However, completing a CTE program implies that an offender is motivated and is attempting to change his negative attitudes for the better.

Therefore, the notion of being motivated and having the attitude to improve one's situation, that is demonstrated by seeking and completing

education, is what promotes consistent employment. When ex-offenders achieve this, they improve their lives.

Negative behavior habits and patterns impair employment consistency.

The variables that measured negative behavior habits and patterns concerned heavy alcohol use, drug use, number of major and minor infractions, and repeat offender status. The results of the analysis indicated that some negative behavior habits and patterns prior to, and while incarcerated were predictive of reduced post-release employment consistency.

Although drug use and alcohol abuse have been referred to as the most widely publicized issue that offenders have (Freeman, 2003), and the vast majority of ex-offenders have experienced some type of employment problem because of drugs and alcohol (Heinrich, 2000; Bushway, 1998; Mukamal, 2000; Solomon et al., 2004), these negative habits were not predictors in this analysis. That could be due to the limitations of the actual variables and how they were captured. This also may have been because this study group consisted of people not manifesting the substance abuse characteristics typical of the average ex-offender. Perhaps this study population either did not have drug or alcohol abuse issues, or these ex-offenders may have remedied those substance abuse issues so that it would not affect their employment consistency.

Having a record of infractions is one indication that an offender had difficulty while in prison with following regulations. If an ex-offender could not adhere to such rules while in prison, a highly controlled environment, he might be less apt to follow guidelines in an employment situation and may exhibit behavior problems on the job. The results of the analysis showed that the minor infraction

variable increased in its predictive power from model one to model four. This variable became more of a factor in achieving better employment outcomes for ex-offenders in the study group. The results suggest if an offender wants to achieve higher levels of post-release employment consistency, their behavior issues must be dealt with prior to being employed. If not, those behavior issues can impair an ex-offender's ability to stay employed and achieve higher levels of employment consistency.

In the same manner, for an offender to have a record of previous incarcerations implies a habit of offending and the possibility of offending in the future (Daniel, 2006; Cross, 2005), which can also prevent an ex-offender from staying employed. In the analysis, the repeat offender status variable progressively decreases in predictive power from model one to model four. This outcome suggests that as ex-offenders, in the study group, progress to higher levels of employment consistency the negative habits and behaviors associated with repeated offending are less of an influential factor for them to maintain employment. Perhaps as ex-offenders progress to better employment outcomes, their previous criminal habits have less of a negative influence on them maintaining a job because they have begun to change their criminal attitudes and ways of thinking. It is interesting to note that although some members of the study group may have been incarcerated prior to the current sentence, no member of the study group recidivated during the study period. This implies that these ex-offenders have found a way to deal with criminal habits enough that it does not cause them to recidivate, nor prohibit obtaining employment.

A person's behavior has a direct effect on them maintaining employment. Having a history of infractions and previous incarcerations may not prevent ex-offenders from obtaining employment. However, in the event the person does obtain employment, possessing those negative behavior habits and patterns can have a detrimental effect on maintaining his employment. Having habits of offending and having behavioral issues are indicative of an ex-offender's mindset. Continuing patterns of negative behavior makes it more difficult for an ex-offender to achieve any amount of consistency in a job.

Race affects consistent employment, but it is unknown why.

The notion that white males fare better in the labor market than their black counterparts (Western & Pettit, 2000) is supported by previous research which indicates that race has an effect on hiring processes (Pager, 2003; Weiman, 2007; Stollie et al., 2004), as white applicants are more likely to be hired than equally qualified black applicants. In addition, whites have been found to have higher job retention patterns than blacks (Diebold et al., 1997; Neumark et al., 1999).

Some research indicates that discrimination remains a fundamental factor of a complex pattern of racial inequality in the labor market (Pager & Western, 2005), other research proposes that characteristic differences between race groups could actually be an underlying reason for the variations in labor market trends between races (Tyler & Kling, 2006). Nonetheless, determining whether the differences in employment consistency between black and white ex-offenders are a result of discrimination or cultural differences was beyond the scope of this study.

That being said, it was expected that the race variable would have a positive effect on white ex-offenders' maintaining consistent employment, and it indeed caused an increase in consistent employment for white ex-offenders, but only at the fourth consistency level. Race was thus not a factor in three of the four levels of employment consistency. This result suggests that, for ex-offenders, once employed, race is not a dominant factor in maintaining employment. Why black ex-offenders are less likely to remain employed by the same employer is difficult to explain.

Perhaps systematic labor market discrimination did not occur with the studied group of ex-offenders, or if it did, it was not a factor in black ex-offenders maintaining employment until the fourth level of consistency. It is possible that the black ex-offenders in the study group were not as consistent with the same employer as white ex-offenders because they more frequently moved around. This may have been due to changes in living accommodations, or perhaps the acquisition of an improved employment situation. In addition, maybe the cultural differences between the white and black ex-offenders did not manifest themselves until the fourth level. Perhaps the characteristic differences between races only affect the ability of the ex-offenders to stay employed with the same employer. Why race was only a factor at the highest level of consistency certainly warrants further investigation, given the commonly held belief that racial discrimination exists in the workplace.

Theme Summary

Overall, an offender's mind-set is most important in progressing past negative behaviors which impede consistent employment. Offenders must

decide to change the way they think in order to transition from a life of crime to one in which they are legally and constantly employed. It is also important for offenders to have the opportunities to make changes in their attitudes. This can be accomplished by utilizing available rehabilitative services and educational programs. In addition, as an offender gets older, he tends to mature, abandon criminal mind-set, and stay employed.

Recommendations

This exploratory study marks a promising start towards discovering which variables are the most important to consistent employment for ex-offenders following release. The results can only be generalized, however, to an ex-offender population similar to the study group. The methods and procedures utilized could be duplicated on a more varied population. Moreover, although the methods, procedures, and measurements used were adequate for the study, some suggestions could improve the overall approach.

Given the results obtained from the study and considering the small amount of variance explained in all four models, perhaps inclusion of additional variables could add to the accuracy of each model in predicting its individual level of employment consistency. For example, post-release supervision is usually assigned to offenders with prior incarcerations, and being supervised seems to increase positive post-release employment (Sabol, 2007). Including a supervision status variable could make this assumption more concrete, as well as connect it to the predictions of ex-offender employment consistency patterns in the models.

It would also be interesting to include other predictor variables. The first would measure behavior indicative of positive habits and patterns. For example, a measure of participation in intervention programs could signify favorable habits that might promote consistent employment. A second variable could measure and account for the completion of general education and intervention services while subjects were incarcerated, in addition to CTE programs. Rehabilitative services available to offenders while incarcerated can help them overcome difficulties that they may have before they are released. Examples would include drug rehabilitation services or anger management programs. A third variable could usefully address the employment patterns of offenders prior to incarceration. Such patterns could be used as a control and compared to post-release employment patterns to see whether any change had taken place during the time offenders were incarcerated.

Furthermore, in this study education level was measured as the self-reported highest grade completed at the point of incarceration. This variable, at best, was an indication of actual seat time in school but not necessarily academic competence. Therefore, using an instrument that measures the latter would be more suitable. Perhaps establishing a more accurate account of an offender's academic attainment would improve the predictive capabilities of the education level variable.

Since the literature argues that alcohol abuse and illegal drug use negatively impact employment situations of offenders, it was logical to incorporate a measure of the study population's alcohol and drug use habits. Better measures of the extent of use coupled with information regarding

participation in treatment programs while incarcerated might enhance the predictive properties of variables on employment consistency.

Although the measure for CTE program completion was adequate, it would be helpful to have additional information on the specific area of the CTE program completed. Used in conjunction with data on industry type, it could provide a better picture of the effect CTE has on employment consistency.

Furthermore, as noted earlier, R squared in all four models was consistently low. Statistically, such results indicate that the regression model did not do an effective job of accounting for the variation in the dependent variable. A few explanations for the low R squared in the models are possible. There is lack of variability in this study population. Using a more heterogeneous group of ex-offenders might actually result in better predictive properties of the variables selected in the regression models, therefore increasing the R squared. A possible way to promote a more heterogeneous ex-offender group would be to include the recidivists in the study population and/or those who failed to get employment.

Last, it might be advantageous to broaden the dependent variable to a measure of post-release success that included employment consistency as one component. Since post-release success is ultimately what is sought, and employment consistency is only one aspect of post-release behavior, future study could incorporate all aspects of post-release success. Of course, this would require deciding what variables encompass post-release success before finding a reliable and valid way to measure them (e.g. extent to which ex-

offenders rely on public assistance, or extent to which they continue any post-release education).

Implications for the Future

Results of this study can be helpful to prison institutions because they provide, at the very least, a concrete examination of key variables that affect different patterns of offenders' post-release employment. Understanding these variables and their impact on consistent employment patterns can allow for better placement of offenders into programs that will best help them achieve consistent employment. In the future, an assessment of offenders' competency levels, and behavior habits and patterns would perhaps be advantageous. Prison officials could use an offender's assessment information to prioritize and assign him to available rehabilitative services or educational programs, depending on individual need.

Since most offenders will eventually be released, prison institutions should use all available time during which offenders are incarcerated to promote a positive change in their attitudes. Because non-violent and drug offenders potentially spend less time in prison, the time the prison system has to promote this positive change in offender attitudes is reduced. This being said and based on findings in the current study, a proposed policy change would be that non-violent and drug offenders be given preferential admittance to available rehabilitative and educational programs. They already do not spend as much time in prison as more violent offenders do, so every opportunity should be seized as quickly as possible to change their criminal ways of thinking and improve their motivation to secure a job, and stay employed once released.

Although other variables not explored here impact the employment consistency of the offender population, this study nevertheless provides a starting point for understanding the variables predictive of better employment situations for ex-offenders. Its main focus, consistent employment, should be further investigated. Because researchers generally characterize employment as obtaining a job, they tend to ignore the importance of maintaining a job. This is unfortunate, and their focus should perhaps change because promoting consistent post-release employment may very well better reduce the number of ex-offenders that return to prison.

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APPENDICES

Appendix A
Demographic Information
Total Population
2001 Release Cohort

Table A1

Demographic Characteristics of Total Population – Race

Ethnic Groups	Actual Number (count) In Population	Percent of Population
African	6011	65.02%
White	3151	34.08%
Asian	20	.21%
Hispanic	53	.57%
Japanese	1	.01%
Indian	4	.04%
Other	2	.02%
Unknown	2	.02%

Table A2

Demographic Characteristics of Total Population – Gender

Sexual Category	Actual Number (count) In Population	Percent of Population
Male	8247	89.21%
Female	997	10.79%

Table A3

Demographic Characteristics of Total Population – Age at Release

Age Range	Actual Number (count) In Population	Percent of Population
18 to 30	3298	35.68%
31 to 49	5239	56.67%
50 +	707	7.65%

Table A4

Demographic Characteristics of Total Population – Education Level

Highest Grade Completed	Actual Number (count) In Population	Percent of Population
Elementary (1 st -5 th)	102	1.10%
Junior High (6 th -8 th)	1159	12.54%
High School (9 th -12 th)	5418	58.61%
Some College	641	6.93%
College Graduate	124	1.34%
Graduate Work	19	.21%
Graduate Degree	27	.29%
Ungraded	3	.03%
Special Education	104	1.13%
GED	1069	11.56%

Table A5

Substance Abuse Characteristics

Substance	Actual Number (count) In Population	Percent of Population
Heavy Alcohol Use	1487	16.87%
Drug Abuse	5796	62.70%

Table A6

Demographic Characteristics of Total Population – Offense Type

Conviction Type	Actual Number (count) In Population	Percent of Population
Violent	2329	25.19%
Non-Violent	4513	48.82%
Drug	2401	25.97%
Uncoded	1	.01%

Table A7

Demographic Characteristics of Total Population – Repeat Offender

Number of Virginia Felonies Served	Actual Number (count) In Population	Percent of Population
None or N/A	6012	65.04%
One	1999	21.62%
Two	796	8.61%
Three	289	3.13%
Four	138	1.49%
Five	9	.10%
Six	1	.01%

Table A8

Demographic Characteristics of Total Population – Time Served

Days Incarcerated	Actual Number (count) In Population	Percent of Population
365 ≤ Days	7262	78.56%
365 > Days	1982	21.44%

Appendix B
Infraction Information

Table B1

Study Population Frequency Count – Major Infractions

Number of Major Infractions	Number of Ex-offenders	Percent of Population
0	1887	81.55%
1	242	10.46%
2	79	3.41%
3	26	1.12%
4	24	1.04%
5	14	0.61%
6	8	0.35%
7	7	0.30%
8	9	0.39%
9	3	0.13%
10	1	0.04%
12	1	0.04%
13	2	0.09%
15	1	0.04%
16	1	0.04%
20	2	0.09%
24	1	0.04%
30	1	0.04%
35	1	0.04%
37	1	0.04%
39	1	0.04%
64	1	0.04%
92	1	0.04%

Table B2

Study Population Frequency Count – Minor Infractions

Number of Minor Infractions	Number of Ex-offenders	Percent of Population
0	859	37.12%
1	406	17.55%
2	259	11.19%
3	131	5.66%
4	119	5.14%
5	82	3.54%
6	74	3.20%
7	56	2.42%
8	33	1.43%
9	42	1.82%

Table B3

Minor Infraction Descriptions

REFUSING TO WORK
DISOBEYING DIRECT ORDER
FAILURE TO WORK AS INSTRUCTED
STEALING
FEIGNING ILLNESS
DELAYING/HINDERING EMPLOYEE
LYING/GIVING FALSE INFORMATION
POSSESSION; FORGED DOCUMENTS
POSSESSION; STOLEN PROPERTY
ENGAGING IN SEXUAL ACTS
INDECENT EXPOSURE
LEWD/OBSCENE ACTS IN PRESENCE OF ANOTHER.
INDECENT EXPOSURE
UNDER DRUG/INTOXICANT INFLUENCE
THREATENING BODILY HARM
FAILURE TO FOLLOW COUNT RULES
GATHERING/THREATENING MANNER-ANY PERSON
PARTICIPATE/ENCOURAGE GRP DEMO.
POSS; UNAUTHORIZED MONEY-F.U.
POSS; UNAUTHORIZED MONEY-M.I.

Table B3 (continued)

Minor Infraction Descriptions

FIGHTING WITH ANY PERSON
HIDING IN ANY AREA
REPEATED VIOLATION MINOR RULES
FALSE STATEMENTS/CHARGES-EMPLOYEE
USE VULGAR/INSOLENT LANGUAGE
ACCEPTING PAYMENT FOR LEGAL AID
POSSESSION OF CONTRABAND
FAIL COMP FURL/WORK-STUDY RULE
GAMBLING
UNAUTHOR. SALE/USE PERS. PROP.
UNAUTHORIZED USE MAIL/TELEPHONE
BEING IN UNAUTHORIZED AREA
POSSESSION; UNAUTHORIZED TICKETS
CONSP./ATTEMPT/ABET-200 SERIES
UNAUTHORIZED PUBLIC CONTACT
MAKE SEX.ADVANCE TOWARD OTHERS
SEXUAL ADVANCES/PHYSICAL OR VERBAL TO NON-INMATE
SEXUAL ADVANCES/PHYSICAL OR VERBAL TO INMATE
SELF MULTILATION/OTHER INTENTIONAL SELF INFLICTED INJ
TATTOO/BRAND SELF/OTHERS POSSES/USE TATTOO EQUIP/PAR
INTENTIONAL THROW/SMEAR/POUR/DISCARD FOOD/TRASH/BODY

Table B3 (continued)

Minor Infraction Descriptions

INTENTIONAL FLOODING ANY AREA

SET FIRE/NOT RESULTING ACTUAL DAMAGE/INJURY TO PERSON

SIMPLE ASSAULT UPON NON-INMATE

SIMPLE ASSUALT UPON INMATE

PARTICIPATE/ENCOURAGE OTHERS - WORK STOPPAGE/GROUP DE

POSSISSION OF INTOXICANTS

POSSESS PARAPHERNALIA FOR MANUFACTURE OF INTOXICANTS

UNDER THE INFLUENCE OF INTOXICANTS

FAIL TO FOLLOW POSTED/WRITTEN INSTRUCTIONAL RULES/REG

UNAUTH USE INST SUPPLIES/TOOLS/EQUIP/MACHINERY

LEAVE AREA OF CONFINEMENT WITHOUT PERMISSION

UNAUTH POSSESSION/USE OF INMATE ID CARD

POSSESSION OF SECURITY THREAT GROUP RELATED MATERIALS

FAILURE TO COMPLY WITH THE RULES AND REGULATIONS

CONSP./ATTEMPT/ABET 200 SERIES

CONSPIRACY TO COMMIT 200 SERIES

ATTEMPTING TO COMMIT 200 SERIES

AID/ABET ANOTHER COMMIT 200 SERIES

VIOL COND.SUSP.PENA 200 SERIES

UNSPECIFIED

FAILURE TO OBEY SMOKING RULES

Table B3 (continued)

Minor Infraction Descriptions

VIOLATION CONDITIONAL SUSPENSION

FAILURE TO RPT TO WORK ON TIME

LOSS JOB-ATTITUDE/PERFORMANCE

RECEIVING UNAUTHORIZED VISITOR

VIOL COND.SUSP.PENA 400 SERIES

REFUSING TO WORK

FAILURE TO WORK AS INSTRUCTED

STEALING

FEIGNING ILLNESS

HINDERING EMPLOYEE PERFORMANCE

LYING/GIVING FALSE INFORMATION

POSSESSION; FORGED DOCUMENTS

POSSESSION; STOLEN PROPERTY

POSSESSION, UNAUTHORIZED DRUGS

POSSESSION, INTOXICANTS

POSSESSION, DRUG PARAPHERNALIA

DESTROY/DAMAGE STATE PROPERTY

ENGAGING IN SEXUAL ACTS

INDECENT EXPOSURE

UNDER DRUG/INTOXICANT INFLUENCE

THREATENING BODILY HARM

Table B3 (continued)

Minor Infraction Descriptions

DAMAING PROPERTY OF OTHERS
FAILURE TO FOLLOW COUNT RULES
GATHERING/THREATENING MANNER-EMPLOYEE
PARTICIPATE/ENCOURAGE GRP DEMO.
POSSESSION, UNAUTHORIZED TICKETS
POSSESSION, UNAUTHORIZED MONEY
FIGHTING WITH ANY PERSON
HIDING IN UNAUTHORIZED AREA
REPEAT VIOLATION MINOR RULE-3
REPEAT VIOLATION MINOR RULE-2
REPEAT VIOLATION MINOR RULE-1
USING VULGAR/INSOLENT LANGUAGE
DISOBEYING DIRECT ORDER
CONSUME ALCOHOL/DRUGS ON FURLOUGH
VIOLATED CONDITION-SUSP PENALTY

Table B4

Major Infraction Descriptions

ESC;ATT ESC;LEAVING CONF.AREA
ESCAPE OR ATTEMPTED ESCAPE
MAKING THREATS/PLANS TO ESC/LEAVE AREA OF CONFIN
POSSESSION OF WEAPON
INCITING TO RIOT OR RIOTING
SETTING A FIRE
ASSAULT UPON ANY PERSON
AGGRAVATED ASSAULT ON NON-INMATE
AGGRAVATED ASSAULT ON INMATE
FORCIBLE SEXUAL ADVANCES
SEXUAL ASSAULT/FORCIBLE ADVANCES ON NON-INMATE
SEXUAL ASSAULT/FORCIBLE ADVANCES ON INMATE
ENCOURAGING WORK STOPPAGE
UNSPECIFIED
POSSESSION; UNAUTHORIZED DRUGS
POSSESSION; INTOXICANTS
POSSESS; DRUG ADM. PARAPHERNALIA
POSSESS; EQUIP. TO MFG. INTOXICANTS
POSSESSION; UNIFORM OR PARTS
DAMAGE PROP.; STATE/ANY PERSON

Table B4 (continued)

Major Infraction Descriptions

DEMAND/RECEIVE UNDER THREAT
CONSP./ATTEMPT/ABET 100 SERIES
PARTICIPATE/ENCOURAGE GRP.DEMO
COMMIT FRAUD BY MAIL/PHONE
1ST REFUSAL - DNA BLOOD SAMPLE
2ND REFUSAL - DNA BLOOD SAMPLE
3RD REFUSAL - DNA BLOOD SAMPLE
REFUSE PREVENT-PROPHYLACTIC THERAPY/CONTAGIOUS DISEASE
REFUSE-DIAGNOSTIC, EDU, PSYCHO, OTHER REQUIRED EVAL
POSSESION SECURITY MATERIALS, DEVICES, EQUIPMENT
TAMPERING-SECURITY MATERIALS, DEVICES, EQUIPMENT
POSSESION TOOL/IMPLEMENTS TO ALTER EQUIP/DEVICES
FALSE STMNT OR CHARGES AGAINST AN EMPLOYEE
POSSESION OF UNAUTHORIZED/UNPRESCRIBED DRUGS
POSSESSION OF PARAPHERNALIA FOR ADMIN OF DRUGS
UNDER THE INFLUENCE OF DRUGS
REFUSAL TO SUBMIT TO DRUG TESTS
DISTRIBUTION OF UNAUTHORIZED OR UNPRESCRIBED DRUGS
ADLTRT DILUT SUBSTT SPECIMEN TO COMPROMISE DRUG TEST
COMMISSION OF FRAUD, BRIBERY, ILLEGAL ACT BY COMMUNIC

Table B4 (continued)

Major Infraction Descriptions

SPIT/THROW/TRANSFER BODILY WASTE/FLUIDS TO ANOTHER PERSON
ENCRGNG/PRTCPTNG IN WRK STPPG/GRP DEMO
GATHERING AROUND OR APPROACHING ANY PERSON IN A THREAT WAY
POSS OF UNAUTH COMM DEV INCL CELL PH, PAGER, ETC
POSS/CONST OF DEV DSGND TO DCV STAFF (INCL DUMMY)
SOLICITATION OF STAFF MISCONDUCT
CONSP./ATTEMPT/ABET 100 SERIES
CONSPIRACY/MAKING PLANS TO COMMIT ANY 100 SERIES
ATTEMPTING TO COMMIT ANY 100 SERIES
AIDING/ABETTING ANOTHER TO COMMIT ANY 100 SERIES
VIOL COND.SUSP.PENA 100 SERIES
POSSESSION OF WEAPON
INCITING TO RIOT OR RIOTING
SETTING A FIRE
ASSAULT UPON ANY PERSON
ESCAPE; ATT ESCAPE; LEFT CONFINEMENT
FORCIBLE SEXUAL ADVANCES
ENCOURAGING WORK STOPPAGE
DISOBEYING DIRECT ORDER
OFFENSE UNKNOWN

Appendix C
Offense Type Description

Violent Offenses

Capital Murder
Homicide – 1st
Manslaughter
Abduction
Rape/Sexual Assault
Robbery
Assault
Weapons
Homicide – 2nd

Non – Violent Offenses

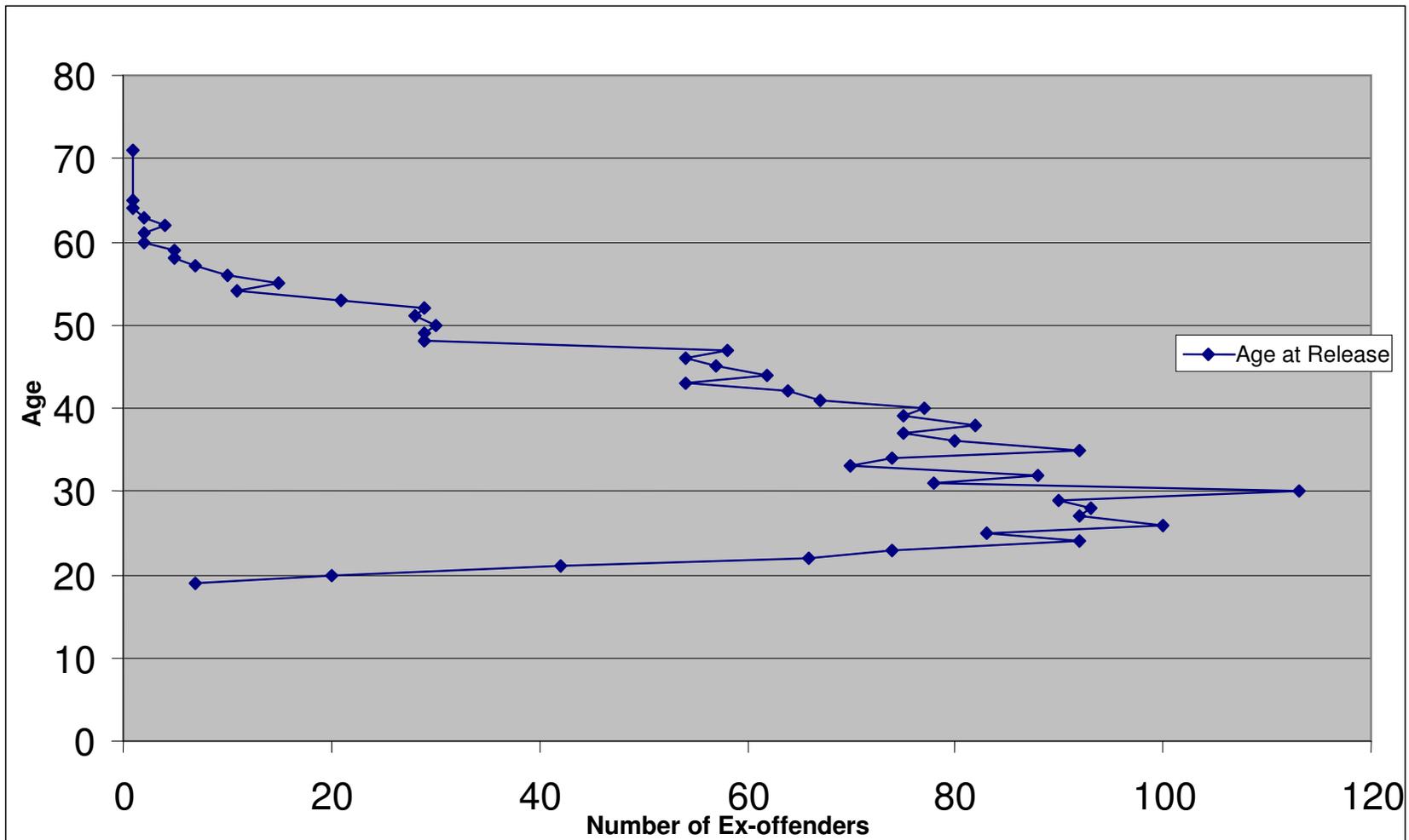
Arson
Burglary/B & E
Larceny/Fraud
Conspiracy
Sex Offense
DUI
Habitual Offender
Other Non – Violent Offense

Drug Offenses

Heroin Sales
Heroin Possession
Cocaine Sales
Cocaine Possession
Other Drug Sales
Other Drug Possession
Other Drug

Appendix D
Scatter Plot Chart
Study Population
Frequency Count – Age at Release

Figure 2. Study population age at release – frequency count



Appendix E

Study Population

Frequency Count – Number of Virginia Felonies Served

Number of Virginia Felonies Served – frequency count

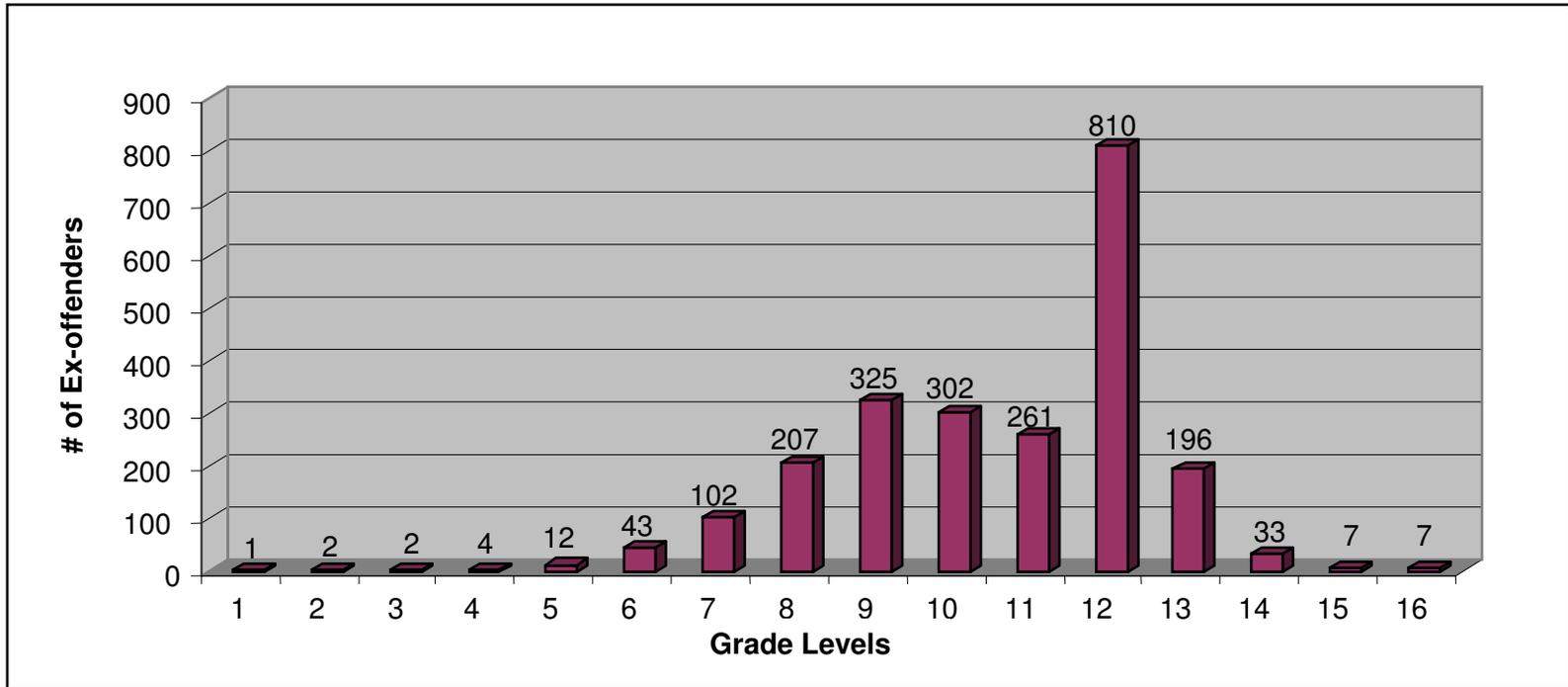
Previous VA Felonies	Number of Ex-offenders	Percent of Population
0	1571	67.89%
1	513	22.17%
2	146	6.31%
3	55	2.38%
4	27	1.17%
5	2	0.08%

Appendix F

Study Population

Frequency Count – Education Level

Figure 3. Highest grade completed – frequency count



1 – 1 st Grade	5 – 5 th Grade	9 – 9 th Grade	13 – Some College
2 – 2 nd Grade	6 – 6 th Grade	10 – 10 th Grade	14 – College Graduate
3 – 3 rd Grade	7 – 7 th Grade	11 – 11 th Grade	15 – Some Graduate Work
4 – 4 th Grade	8 – 8 th Grade	12 – 12 th Grade	16 – Graduate Degree

Appendix G
Career and Technical Education
Prison Programs
2001 Cohort Participated In

CTE Programs 2001 Cohort Participated In

Auto Body Repair
Automotive Technology & Serv
AVS Custodial Maint/Sanitation
Barbering
Building Maintenance/Repair
Building Trades
Business Software Applications
Cabinet Making
Carpentry
Commercial Foods
Communication Arts & Design
Computer Systems Technology
Consumer Electronics
Cosmetology
Custodial Maint./Sanitation
Drafting/CAD
Drywall
Electricity
Electronics
Entrepreneurship
Floor Covering
Furniture Repair/Refinishing
Graphic Comm & Print Prod
Heavy Equipment Operation
Horticulture
HVAC/Refrigeration
Industrial Maint. Mechanics
Introduction to Computers
Major Appliance Repair
Masonry
Mod. Business Software Appl.
Mod. Small Engine Repair
Office Machine Repair
Office Technology
Optical Technology
Optician's Certification Prog
Painting/Drywall
Pipefitting
Plumbing
Sheet Metal
Shoe and Leather Repair
Small Engine Repair
Tech Prep: Water/Waste Water
Upholstery
Voc. Eval./Career Guidance
Water/Waste Water Treatment
Welding
Woodworking

Appendix H
Predictor Variables
and Hypothesized Impact

Variables with Hypothesized Impacts

Predictor Variables	Hypothesis
Race	Racial discrimination occurs during the hiring process. White people have better job retention than their black counterparts.
Offense Type	Violent offenders have more of a difficult time finding employment, compared to non-violent and drug offenders. But once employed, violent ex-offenders have better stable employment patterns.
Time Served	Spending time in prison can reduce employment opportunities, but it has also been associated with successful post-release employment.
Age at Release	Being older is linked to more stable employment outcomes.
Educational Level	Higher educational levels are related to better employment outcomes.
CTE Program Completions	CTE programs are effective tools of post-release success for ex-offenders. They increase the stable rate of employment of ex-offenders.
Drug Use	Drug use impairs success in the job market. Drug use has been found to cause poor job attendance and low job retention.
Heavy Alcohol Use	Alcohol abuse contributes to employment difficulties. It reduces job retention.
Major and Minor Infractions	Infractions are related to a person's attitude while incarcerated. Behavior issues that exist in prison may continue on the job after release.
Repeat Offender Status	Repeat offenders have less time available to be employed. A history of repeated incarcerations can decrease employment earnings. It has also been reported that having prior incarcerations increases the likelihood of finding post-release employment.

Appendix I
Correlation Matrix

Figure 4. Correlation Matrix – Independent Variables

	X1	X2	X3	X4	X5	X6	X7	X9	X10	X11	X12	X13
X1	1.00000	0.23557	0.35179	-0.05725	0.27977	0.26433	-0.20456	-0.04937	0.06410	-0.0021	0.30194	-0.15576
X2		1.00000	0.60870	-0.03760	0.03963	-0.00037	-0.08035	-0.01405	-0.00233	0.00493	0.07415	-0.06674
X3			1.00000	-0.07411	0.07724	-0.09217	-0.16094	-0.07589	0.00430	0.00855	0.14660	-0.09281
X4				1.00000	-0.05559	0.29622	-0.04601	-0.06269	0.08290	0.06456	-0.17471	0.01007
X5					1.00000	0.02607	0.02458	0.03781	0.03018	-0.02577	0.23031	-0.13236
X6						1.00000	0.02839	-0.00012	0.10538	-0.00777	-0.00995	-0.06051
X7							1.00000	0.09610	-0.06127	-0.02412	-0.07004	-0.02661
X9								1.00000	0.13499	0.03264	-0.03614	-0.20297
X10									1.00000	0.10927	0.03006	-0.05779
X11										1.00000	-0.12873	0.12355
X12											1.00000	-0.40182
X13												1.00000

X1 – Days served

X2 – Number of Major Infractions

X3 – Number of Minor Infractions

X4 – Number of Virginia Felonies Served

X5 – Number of Career and technical education Program Completions

X6 – Age at Release

X7 – Education Level

X9 – Race

X10 – Alcohol Abuse

X11 – Drug Use

X12 – Violent Offense

X13 – Drug Offense

Figure 5. Correlation Matrix – Independent Variables and Dependent Variables

	Y1	Y2	Y3	Y4
X1	0.07431	0.08774	0.07990	0.07972
X2	0.00256	-0.02269	-0.03498	-0.3591
X3	-0.01488	-0.05762	-0.07123	-0.08032
X4	-0.09342	-0.08503	-0.07162	-0.05715
X5	0.08506	0.09587	0.08039	0.08634
X6	0.00073	0.07840	0.12065	0.14352
X7	0.04824	0.08350	0.07615	0.06292
X9	0.02953	0.09235	0.10004	0.08414
X10	-0.02790	-0.00887	0.00151	-0.00562
X11	-0.05656	-0.05976	-0.05535	-0.06096
X12	0.14602	0.13694	0.12497	0.12098
X13	-0.06780	-0.06774	-0.05644	-0.04753
Y1	1.00000	0.92208	0.83092	0.76506
Y2		1.00000	0.92742	0.87054
Y3			1.00000	0.94440
Y4				1.00000

- X1 – Days served
- X2 – Number of Major Infractions
- X3 – Number of Minor Infractions
- X4 – Number of Virginia Felonies Served
- X5 – Number of Career and technical education Program Completions
- X6 – Age at Release
- X7 – Education Level
- X9 – Race
- X10 – Alcohol Abuse
- X11 – Drug Use
- X12 – Violent Offense
- X13 – Drug Offense

- Y1 – Number of Quarters w/ Reported Earnings
- Y2 – Number of Quarters w/ Reported Earnings of \geq \$1339
- Y3 – Number of Quarters w/ Reported Earnings of \geq \$1339 in the same Industrial Sector
- Y4 – Number of Quarters w/ Reported Earnings of \geq \$1339 with the same Employer