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Offender Reentry and Employment

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Offender reentry and employment

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DEDICATION

To my parents: who have shown me the importance of life-long learning and for their unconditional support and love.

To my sons (Jack and Jameson): to teach them the importance of never giving up and working for what you want to accomplish in life.

TABLE OF CONTENTS

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LIST OF TABLES

LIST OF FIGURES

ABSTRACT

This dissertation is an exploratory examination of offender re-entry and employment programming as contextualized by Bushway & Apel (2012) using the Serious and Violent Offender Re-entry Initiative (SVORI) Data. Propensity scores are used to examine both weighted and un-weighted logistic regression models. Logistic regression models indicate that inmate participation in employment programming during a term of incarceration increases employment rates for females at nine and fifteen months after their release but does not increase employment rates for males. In addition, participation in employment programming during a term of incarceration does not significantly reduce re-arrest rates among either gender. However, participation in community based employment programming significantly increases employment rates among females at three and nine months following their release and significantly increases male employment rates at three, nine, and fifteen months after their release. Participation in community based employment programming following a term of incarceration significantly reduced re-arrest rates among both genders for the time periods examined. Theoretical implications are explored.

CHAPTER 1

INTRODUCTION

Statement of the Problem: Employment and Reentry

At year-end 2009, 53 percent of state inmates were incarcerated for a violent offense. During 2010, over 708,000 offenders were released from U.S. prisons, many of whom were incarcerated for violent offenses and who have significant criminal histories (Guerino, Harrison, & Sabol, 2012). Over the past decade, a large number of criminal offenders with violent histories have been released from correctional institutions and are continuously reentering society. In 2011 alone, 4,814,200 offenders in the United States were under community supervision (Glaze & Bonezar, 2011). Using U.S. Census data from 2011, this equates to one out of every 64 people in the U.S. being under community supervision. When the number of offenders under community supervision is coupled with the number of offenders incarcerated in 2011, this ratio is increased to one in 44. The U.S. is experiencing an influx of offenders who are reentering society at significant rates. A wealth of research has shown there are a variety of impediments to successful reentry back into society amongst offenders. Amongst the barriers to successful reintegration, a principle one is employment. (Nelson, Deess, & Allen, 1999; Pinard, 2010; Travis, 2005).

Many times during discussions regarding an offender's reentry process and at times during modification or revocation hearings, the question is posed "is he/she (the offender) employed?" to which a response is provided as either "yes" or "no". If the offender is not employed, often the discussion turns to if he or she is participating in programming which will assist the offender in obtaining employment. It is often

assumed that if an offender is employed or they are participating in employment programming, the risk to recidivate is significantly reduced or at least there is a structure in place which will have a negative impact on the propensity to recidivate. This belief is embodied through employment being considered a prosocial "routine activity" which accounts for a significant amount of an offender's time and which serves as the primary source of legitimate income, aiding in the reentry process (Bushway & Apel, 2012). As a result, the public, the courts, and practitioners alike expect that offenders reentering back into the community are either employed, are actively seeking employment, or are participating in employment programming in an effort to obtain employment as part of their reentry process.

Employment status of offenders reentering back into the community has been identified as one of the central eight risk factors that predict recidivism (Andrews & Bonta, 2003; Andrews, Bonta, & Wormith, 2006). Put differently, employment status conceptualized through a risk-need-responsivity (R-N-R) lens is a dynamic crime producing factor also known as a "criminogenic need" that if not addressed, significantly increases an offender's risk of reoffending within a given timeframe during the reentry process (Latessa, 2012; Latessa & Lowenkamp, 2005; Latessa & Lowenkamp, 2006).

While employment has been shown to have impacts in reducing recidivism (Andrews & Bonta, 2003; Andrews et al., 2006), the effects of offender participation in employment programs on recidivism reduction is less encouraging. Vocational training programs have produced promising results in increasing offender employment and decreasing recidivism rates, however, other studies which have examined offender reentry and the effects of employment programming such as work release programs, job

readiness programs, and transitional employment programs have produced mixed results (Drake, Aos, & Miller, 2009; Saylor & Gaes 1992, 1997; Visher, Winterfield, & Coggeshall, 2005; Wilson, Gallagher, & MacKenzie, 2000). Further, the methodological designs of prior research which has examined employment programs are less than ideal. There have only been a handful of studies which have used a random assignment and quasi-experimental study designs when examining employment programming (Visher et al., 2005; Wilson et al., 2000). In addition, most studies that have evaluated employment programming, offender employability, and the effects on recidivism are dated with some studies being more than 30 years old (Drake et al., 2009; Visher et al., 2005). Provided the rapidly changing landscape within the employment sector through technology and other fluid skill sets, current examination of employment programming with sound methodological designs is critical to determine what type of employment programs and program components work for both increasing offender employment and reducing recidivism.

As stated prior, during the reentry process, it is expected that an offender either obtain employment or if unemployed, be actively seeking employment opportunities and participate in employment programming. Occupying offenders' time in this manner by using employment based reentry initiatives provides justifiable structure and a stable routine in an effort of preventing new law violations. In addition, employment and employment programs require offenders to use basic organizational, communication, and hygienic skill sets, all of which are required to function in society as a productive member.

While prior research has provided some support for the effectiveness of employment in recidivism reduction (Andrews & Bonta, 2003; Andrews et al., 2006), prior research supporting employment programming and recidivism reduction paints a picture of uncertainty (Moses, 2012; Visher et al., 2005; Wilson et al., 2000). As a result, Bushway and Apel (2012) contextualize signaling theory, as advanced by Spence (1973) in labor economics, to provide an alternative solution in the utility of employment programming.

Bushway and Apel (2012) assert that employment programming provides a unique opportunity to discover pathways to secondary desistance[1]. In other words, Bushway and Apel (2012) maintain that offenders *within the same risk level* who complete a rigorous and challenging employment program, signal information about themselves which differentiates themselves from other offenders who are similarly situated who do not voluntarily take advantage of and who do not complete such programming opportunities. As a result and when compared within the *same risk level*, offenders who choose to participate in employment programming and especially those who successfully complete such programs are signaling they are fundamentally different from other offenders who do not choose to participate in programming (Brennan, 2012; Bushway & Apel, 2012; Bushway & Reuter, 2004).

Purpose of the Study

The purpose of this dissertation is to test the basic premise of signaling theory as contextualized by Bushway and Apel (2012) that offenders within the same risk classification are able to signal secondary desistance through their voluntary participation in employment programming. This dissertation uses The Serious and Violent Offender

Reentry Initiative (SVORI) data collected by Pamela Lattimore, Research Triangle Institute (now RTI International) and Christy Visher, University of Delaware and the Urban Institute. This dataset consists of 1,697 males and 357 females who are classified as being serious and violent offenders. The data for this study was obtained through the Interuniversity Consortium for Political and Social Research (ICPSR) at the University of Michigan and has been approved by the Iowa State University Institutional Review Board.

In addition, this dissertation reviews the prior literature which has examined various types of employment programs provided to offenders and the associated impacts on increasing offender employment and recidivism reduction. The proceeding literature review examines both practitioner and research based perspectives on the effectiveness of employment programming and the link, or lack thereof, to increasing offender employment and recidivism reduction. This will be followed by a review of signaling theory (Spence, 1973), and then a discussion of signaling theory as contextualized by Bushway and Apel (2012). The literature review will end by examining the R-N-R model to explore how the two perspectives (signaling theory and the R-N-R model) can complement one another to enhance risk assessment as it relates to employment programming, employment as a criminogenic need, and offender reentry.

CHAPTER 2

LITERATURE REVIEW

Employment and Employment Programming

There is a strong and committed focus on employment and employment programming both within U.S. correctional institutions and after offenders are released from a term of incarceration and are reentering back into society. This is evident by the sheer number of employment programs offered to offenders who are both incarcerated and to those offenders who have been released. However, prior research supporting such initiatives showing that they have a positive effect on increasing offender employability and reducing recidivism has been mixed. Some types of employment programming produce desired impacts while other types do not. According to the Census of State and Federal Correctional Facilities, 2005, employment and work release programs were offered by a combined 88 percent of adult state, federal and private facilities. Within these facilities, 54 percent of inmates participated in an employment program (Stephan, 2008). Program availability and significant participation levels demonstrate that the infrastructure supporting employment and employment programming has been built and is imbedded within our correctional institutions.

Offender employment and employment programming opportunities both within institutions and upon reentry back into the community are diverse and encompass various areas including, but not limited to: vocational training, work release programming, job readiness training, and transitional employment programming. While this list is not exhaustive, it does encompass some of the most common offender employment training programs which will be included in this literature review. This literature review assesses

the impacts of employment programs in the reentry process. It also highlights studies which have examined employment programming projects aimed at increasing offender employability and reducing recidivism both while offenders are incarcerated and after they are released and are reentering back into the community.

Vocational Training

Vocational training programs provide specific occupational training which target technical trades. These types of training programs target trades of interest specific to the individual offender. For example, vocational training programs may include training for heating and cooling technicians, hair stylists, welders, pipefitters, data entry technicians, electrical technicians, or any type of occupational training program where procedural knowledge specific to an occupation is needed. Oftentimes, these programs are offered through an apprenticeship or a structured graduated process of hands-on involvement. As participants pass exams, meet program milestones, and demonstrate competence in the trade, they gain more occupational independence and earn formal certifications.

Vocational training programs work to develop the knowledge and confidence of participants to be able to problem-solve based on their specialized training. These training programs empower individuals with the knowledge-base to make practical decisions while on the job and to be proficient in their respective trained vocation. As a result, vocational training programs provide specialized and individualized employment skill training that offenders are able to self-identify with. Vocational training programs encompass training that is specific to an offender's area of interest.

Prior research which has examined the success of vocational training programs at increasing offender employability and reducing recidivism has produced promising

results. Seiter and Kadela (2003) used the Maryland Scale of Scientific Methods (MSSM), a five tiered classification scale to classify the scientific rigor of studies which examine the effects of vocational and work programs in reducing recidivism. The MSSM was created by Sherman, Gottfredson, MacKenzie, Eck, Reuter, and Bushway (1998) for the National Institute of Justice (NIJ) as a screening tool to develop an evidence based practices research base to inform policy development. Seiter and Kadela (2003) used the MSSM to identify and classify seven studies which examine vocational and work programs among the correctional population. Of the seven studies classified, three met the criteria of acceptable scientific rigor using the MSSM study assessment scale.

According to the MSSM, Saylor and Gaes (1992, 1997) met the criteria of a level four classification which is defined as follows: "comparison between multiple units with and without the program, controlling for other factors, or using comparison units that evidence only minor differences" (p. 371) and Turner & Petersilia (1996) met the criteria of a level five classification which is defined as follows: "random assignment and analysis of comparable units to program and comparison groups" (Seiter & Kadela, 2003, p. 371). For studies to be classified as scientifically acceptable using the MSSM, they have to be coded at a level three or higher.

First, examining the literature which has met the appropriate scientific criteria as indicated in the MSSM, Saylor and Gaes (1992) examined the Post Release Employment Project (PREP) administered through the Federal Bureau of Prisons to determine if prison work and vocational training programs have significant impacts on offender reentry. They employed a quasi-experimental research design and used matching techniques to control for selection bias. They examined longitudinal outcomes of 4,731 offenders six

months post-release and 3,331 of these same offenders at twelve months post-release. After six months, they found that 4.9 percent of program participants were revoked compared to 6.2 percent of non-program participants and at twelve months, 6.6 percent of program participants were revoked compared to 10.1 percent of non-participants.

Saylor and Gaes (1992) did not formally control for risk in their study, but they did note that the inmates who participated in the study were, on average, convicted of more severe offenses and were serving longer sentences than inmates in the comparison group. Overall, they found that inmates who obtained work experience and vocational training during their incarceration were less likely to incur institutional misconduct reports while incarcerated, more likely to be employed after their release, and less likely to recidivate than those in the comparison group.

In a follow up study examining gender, Saylor and Gaes (1997) conducted a longitudinal analysis on the same population as described above. They found that there was no statistical difference between the treatment and comparison groups for females 8 to 12 years post-release. This finding was attributed to so few females being reincarcerated for a new offense during the time period, 52 out of 904. However for males that participated in vocational programming, there was a 33 percent reduction in recidivism when compared to the comparison group 8 – 12 years post-release. These findings in this study, which uses a strong methodological rigor according to the MSSM classification scale, support the use of vocational programming with offenders to increase employability and reduce recidivism.

Similarly, Gordon and Weldon (2003) investigated offenders who completed a vocational training program while incarcerated. Specifically, they used a non-random

comparative analysis and investigated if offenders who completed a vocational training program were less likely to recidivate than offenders who did not complete a vocational training program during their term of incarceration. For their purposes, Gordan and Weldon (2003) defined recidivism "as a return to state custody, after having been released for a new felony conviction" (p. 201). They examined 169 inmates in a West Virginia correctional facility that completed a vocational program from 1999 to 2000. They found inmates who completed a vocational program had an 8.75 percent recidivism rate compared to 26 percent for offenders who did not complete a vocational program. While the findings from this study are promising, they should be tempered due to the lack of scientific rigor and many limitations cited by the authors. As discussed, other research with stronger methodological designs (Seiter & Kadela, 2003) has shown that inmates who participate in prison industry or inmates who receive vocational/apprenticeship training benefit from significantly reduced rates of recidivism (Saylor & Gaes, 1992; Saylor & Gaes, 1997; Turner & Petersilia, 1996).

A more recent study which was conducted by Aos, Miller, and Drake (2006) produced more tempered findings in assessing the impact of vocational programming in reducing the recidivism rate. This study was conducted for the Washington State legislature to provide research based information on "what works" in corrections in an effort to reduce future prison construction and the costs associated. As a part of their analysis, Aos et al. (2006) conducted a meta-analysis of four prison-based vocational programming studies ranging from 1988 to 2005, and 16 community-based employment programming studies ranging from 1978 to 2001. As a result of their meta-analysis, they concluded that prison-based vocational programs resulted in a 9 percent reduction in

recidivism and community-based employment programs resulted in a 4.3 percent reduction in recidivism. These results are encouraging as both prison-based and community-based vocational programming produced significant impacts in reducing the recidivism rate.

In summary, prior research has shown that vocational programming produces significant effects in increasing employability (Saylor & Gaes, 1992) and reducing recidivism (Aos et al., 2006; Gordon & Weldon, 2003; Saylor & Gaes, 1997). Vocational programming has provided promising insight into an effective type of employment program which has been shown to have a positive impact for both offenders and the communities to which they are reentering. More research is needed to examine which specific program components are most effective within vocational training programs. Determining which program components that have the largest impact will allow administrators to design programs rooted in the results of the research, potentially producing larger impacts on offender employment rates and recidivism reduction.

Work Release Programming

Work release programs seek to bridge the gap between incarceration and reentry. They provide employment skills to offenders so offenders can maintain employment after they are released from incarceration. Generally, work release programs are offered to offenders who have demonstrated a positive work ethic and have maintained compliant behaviors while incarcerated. In addition, offenders are given priority for work release programming if they are approaching their full-term release date and will soon be released from incarceration. Work release programs offer offenders the opportunity to reestablish themselves back into the community, most often while residing in a half-way

house and being employed in the community. Maintaining a residence in a half-way house while being employed provides structure where offenders can focus on their employment, save money, and prepare for their full-release. Work release programs provide a structure where offenders are able to establish prosocial routines through obtaining employment and utilizing resources to assist them in their reentry. These programs provide the opportunity to reintegrate back into the community.

Prior research conducted on the impacts of work release programming, offender employment, and reduced recidivism is limited. To date, the research that has been done on work release programs and their impacts in increasing employability and reducing recidivism has been mixed (Berk, 2008; Drake, 2007; Jeffrey & Woolpert, 1974; LeClair & Guarino-Ghezzi, 1991; Turner & Petersilia, 1996; Waldo & Chiricos, 1977) and consistent with prior research on vocational training, certain studies have employed stronger research methodologies than others (Seiter & Kadela, 2003).

For instance, Turner and Petersilia (1996) employed a strong research methodology which that did not produce statistically significant findings but did indicate that work release programs may reduce recidivism. They utilized a random assignment study design among 218 offenders in Seattle, Washington released in 1990, to examine the effects of work release programs. Of these 218 offenders, 125 were randomly assigned to an experimental group which consisted of those participating in work release programs while the other 93 offenders were randomly assigned to a control group where they served their sentence in prison as normal. Recidivism was defined as any arrest that occurred after release and the data was collected 12 months post-release. Turner and Petersilia (1996) did note that due to administrative placement procedures, the average

length of time in the community among participants was seven months. In summary, offenders who were randomly assigned to the experimental work release group were less likely to be re-arrested during the 12 month follow-up period, however, the results were not statistically significant.

More recently, Drake (2007) examined the impacts of Washington State's work release programs to provide a better understanding of what works in corrections to lower the recidivism rate among the correctional population. She employed a quasi-experimental design to examine group differences and recidivism rates of 35,475 inmates who were released from January 1, 1998 to July 31, 2003. Among the releases, 11,413 participated in a work release program while 24,062 did not. Recidivism was defined as any arrest that occurred after release for a misdemeanor, felony, or violent felony. When the groups were examined, Drake (2007) noted differences between the two groups which include work release participants having longer criminal histories. While those offenders who participated in work release programs had longer criminal histories, on average work release program participants were less violent than the comparison group. In addition, offenders who participated in work release programs spent more time incarcerated and were more likely to be older.

Overall, Drake (2007) found that after 36 months post-release for both felony and violent felony recidivism there were no statistical differences between work release participants and non-participants. When misdemeanors were included in the analysis and total recidivism was examined, after 36 months post-release, 58 percent of work release participants recidivated compared to 61 percent of non-participants, which resulted in a statistically significant difference (Drake, 2007). While this study did produce mixed

results, overall, the study concluded that work release programs do reduce recidivism rates with larger impacts occurring early after release and more tempered impacts occurring later among those convicted of a misdemeanor offense.

Most recently, Berk (2008) examined the end-all-be-all question, does work release work? She utilizes multiple methods including propensity score methods to examine administrative data collected on 9,221 male offenders from 1993 to 1999, in the Florida Department of Corrections. Specifically, she analyzed employment outcomes and recidivism rates among offenders who participated in work release programs compared to offenders who did not, for one year post-release. For the purposes of her study, recidivism was defined as any conviction that results in a return to prison, probation, or revocation of their current term of probation or parole (Berk, 2008). She found that offenders who participate in work release programs have better post-release employment outcomes in the first year following release. Further, she found that improving employment outcomes reduces recidivism for offenders convicted of "financially motivated" crimes but not for offenders who commit other types of crime.

In summary, the research supporting work release programs has at best, provided weak support for an increase in employability and a reduction in recidivism. Only one study has shown a statistically significant effect in increasing employability (Berk, 2008) and two studies have shown impacts in reducing recidivism (Berk, 2008; Drake, 2007). While several studies have indicated there is a positive association between work release programs and reduced recidivism (Drake, 2007; Jeffrey & Wollpert, 1974; LeClair & Guarino-Ghezzi, 1991; Turner & Petersillia, 1996) none have produced statistically

significant results. Other, older studies have indicated no observed effects from work release programs (Waldo & Chiricos, 1977).

Job Readiness Programming

A job readiness program prepares an offender for the technical skills and requirements prior to obtaining employment. Job readiness programs focus on the development of the skills needed in preparation for the job interview or the job search. For example, job readiness programs teach offenders how to prepare resumes, write cover letters, how to explain their criminal offense, how to complete an employment application, go through the interview process, how to maintain proper hygiene, and how to dress appropriately. Job readiness programs prepare the offender for workforce expectations and teach them the skills of how to introduce themselves into the workforce. In addition, job readiness programs incorporate assignments that offenders must complete outside of the program itself. These assignments target specific skill sets, for instance drafting a cover letter or writing a personal statement, which are part of the developmental process in the job readiness program. Completing these assignments requires a basic level of communication skills and motivation on behalf of the offender which demonstrates they are ready to take on other challenges associated with the employment search process.

Prior research on the effectiveness of job readiness programming impacting employability and reducing recidivism rates has produced marginal results. Early research suggests job readiness programs do not have an impact on increased employability or reduced recidivism rates. For example, Anderson and Schumacker (1986) examined the Comprehensive Employment and Training Act (CETA) that was

implemented during the 1970's and 1980's. They compared a random sample of 108 probationers from a Midwestern city who participated in job readiness programming while under community supervision to a random sample of probationers who were supervised in the community as usual. Program participants received assistance with completing applications, writing resumes, interviewing, and role-playing to practice these skill sets. Despite these efforts, evaluations of the effects of the job readiness program participants at 12 months post implementation found no difference in revocation rates between the treatment and control groups.

Similarly, Bloom et al. (1997) conducted an analysis of the National Jobs Training Partnership Act (JTPA). In 1986, JTPA was supported by the U.S. Department of Labor to measure the impacts of specific job readiness programs among a disadvantaged sample. This study included a sample of 21,000 individuals who were randomly assigned from November 1987 to September 1989, approximately 15 month duration, to treatment and control groups in 16 different locations across the United States. Those that were randomly assigned to the JTPA program received job readiness training, vocational exploration services, and job shadowing services.

Bloom et al. (1997) found that males who had a prior arrest and were randomly assigned to receive JTPA services had lower earnings 30 months after program participation compared to the control group of males who had a prior arrest and who did not receive JTPA services. In addition, after 30 months there was no difference in recidivism rates between those that were randomly assigned to the treatment group compared to those assigned to the control group. More perplexing is that after three

years, those that participated in services recidivated at a higher rate than those whom did not.

Other programs have shown promising impacts when there is a blend of multiple skill sets targeted. For example, programs such as Project Reintegration of Offenders (RIO), which is run by the Texas Workforce Commission and supported by the National Institute of Justice, the National Institute of Corrections, and the U.S. Department of Education's Office of Correctional Education, provided job skills services to over 15,366 offenders reentering the community in the state of Texas in 1995 (Finn, 1998). Such services include assessment and testing, documentation, job readiness training, employability and life skills workbooks, and cognitive-based change programs. In addition two years prior to release from incarceration, inmates in this program are assessed and tested to determine their needs and other key areas which need further development. This is paired with the program case managers and the offenders gathering the appropriate documentation such as birth certificates, social security cards, school transcripts, and if needed completing the General Education Diploma Program. Inmates who participate in the program are subject to job readiness training where they have the opportunity to develop interviewing skills. Beginning at six months prior to inmates releasing, program participants work through employability and life skills workbooks and also attend a 90 to 120 hour cognitive-based change program paired with a 65 day life skills program in preparation for their release (Finn, 1998).

Examination of project RIO using a descriptive comparative analysis indicates that program participants are significantly more likely to obtain employment post-release than non-program participants. Among program participants, 69 percent found

employment after release compared to 36 percent of non-program participants. When broken down by race, strong program effects were found for minority offenders who participated in this program. Among African American program participants, 66 percent found employment compared to 30 percent for non-program participants. Similarly, for Hispanics, 66 percent of program participants found employment compared to 30 percent of non-program participants (Finn, 1998). These results are promising especially among minority offenders who have traditionally had low employment rates when compared to white offenders (Pager, 2003).

Lastly, Project RIO has shown that high risk inmates who participate in the program are less likely to return to prison. Examining risk and re-arrest, 48 percent of the high risk program participants were re-arrested compared to 57 percent for non-program participants and 23 percent of program participants were reincarcerated compared to 38 percent of non-program participants (Finn, 1998). Project RIO has shown promising effects, which may be the result of using a blended approach and also incorporating the use of a cognitive behavioral curriculum as suggested by Latessa (2012). Finn (1998) does advise caution when interpreting the results and notes that the evaluations do have several limitations which should be considered, one of which is a lack of a random assignment research design.

Similar to Project RIO, the Safer Foundation Program has demonstrated promising impacts on recidivism reduction in the state of Illinois. Annually, the Safer Foundation Program provides services to over 9,300 offenders who are reentering back into the community. Program participants are eligible if they have not been convicted of a violent crime and will be released from incarceration in the next six to 24 months.

Program participants benefit from actuarial assessments of their skills and abilities, job readiness training, have exposure to job fairs in prisons, and qualify for job placement services through temporary staffing agencies.

A non-randomized examination of the impacts of The Safer Foundation Program has shown a recidivism rate of 28 percent for offenders who received any service from the program and 18 percent for offenders who received program services and have been employed for at least 30 days. For program participants who received services and have been employed for at least one year, the recidivism rate was approximately eight percent (Drake & LaFrance, 2007). Comparably, for offenders who did not participate in any programming, the recidivism rate is approximately 52 percent (La Vigne, Mamalian, Travis, & Visher, 2003). However, provided the number of components involved in the program, to date, there has been no analysis indicating which program components lead to significant reductions in recidivism.

Overall, programs which have focused on job readiness skills in working with offenders have not produced an increase in offender employability or a reduction in recidivism (Anderson & Schumacker, 1986; Bloom et al., 1997). Other programs which have incorporated job readiness skill programming in addition to other program components, such as cognitive behavioral treatment, have shown promising impacts 12 months post release (Finn, 1998; La Vigne et al., 2003). Programs which have shown impacts in increasing offender employability and decreasing recidivism rates incorporate multiple components. To date, it is unclear if job readiness training is a component which produces significant impacts. More research is needed in such studies examining

the specific program components and their impacts in both job readiness programming and other related domains using a random assignment study design.

Transitional Employment Programming

Transitional employment programs work with offenders who are hard to employ to ensure a smooth transition into the workforce. Specifically, these programs work with offenders during a period of employment, are usually temporary in nature, and provide services to offenders who need individualized attention in making the transition into the workforce. Employment services are offered in a supportive environment and are most often for offenders who lack work experience, education, or training. Transitional employment programs are designed to teach basic workplace skills such as how to function and act appropriately in the workplace. These programs are typically short-term with the goal of moving the offender into a long-term employment setting to improve their job retention rate. Transitional employment programs generally include pre-placement employment services among a variety of other services. During the offender's placement, the offender may be subject to workplace mentoring, case management, job coaching, job skills training, and be assisted with other basic supportive services such as bus passes to assist with transportation and work clothing to assist in providing the offender with proper work attire.

Recent reviews of transitional employment programs and their effects on increasing offender employability and reducing recidivism have indicated that transitional employment programs do not have significant impacts (Moses, 2012). In addition, recent program specific reviews have supported this assertion. For instance, Bloom (2010) with the support of the U.S. Department of Labor, reviewed two

transitional employment program models and conducted an evaluation which examined the evidence surrounding transitional employment programs. Bloom (2010) concluded that similar to transitional employment programs of the past (Bloom, Rich, Redcross, Jacobs, Yahner, & Pindus, 2009; Ginzberg, Solow, & Nathan, 1980) transitional employment programs do not sustain the temporary employment increases after the transitional employment period expires. In addition, Bloom (2010) found marginal differences in re-arrest rates of program participants and non-program participants three years after program implementation. These findings have been supported by other, more recent studies as well.

For instance, in a more detailed analysis of a transitional employment program and its effects, Redcross, Millenky, Rudd, and Levshin (2012) evaluated the Center for Employment Opportunities CEO program. This program is based in New York City and is a project which is supported by the Administration for Children and Families and the Office of the Assistant Secretary for Planning and Evaluation in the U.S. Department of Health and Humans Services and the U.S. Department of Labor. This intensive employment program focuses on transitional employment for former prisoners in an effort to increase employability and to reduce recidivism, aiding in the reentry process back into the community.

CEO is structured so that participants first complete a five day pre-employment course. Following the completion of this course, they are placed in a work crew and are employed through transitional employment placement assistance. Participants work four days per week for approximately seven hours per day (Redcross et al., 2012). CEO's transitional employment provides offenders the opportunity to work while learning the

"soft skills" required to function appropriately in the work environment. These "soft skills" include how to show up to work on time, how to interact appropriately with a supervisor, how to respond to authority appropriately, and how to follow the rules and regulations on the job. In addition, one day a week program participants meet with their job coaches/case managers as assigned through the CEO program. Job coaches assist CEO participants with working through barriers and provide resources to address other obstacles including money management classes, fatherhood classes, and educational opportunities.

The CEO program used a random assignment study design to compare the outcome of offenders who participated in CEO employment service programming to offenders who received basic job search assistance utilizing community resources with the assistance of their parole officer. From January 2004 to October 2005, participants were randomly assigned either to treatment or control groups. This resulted in 568 offenders being randomized into the CEO treatment group and 409 offenders being randomized into the control group. The samples consisted of offenders who have extensive criminal histories. On average offenders in the sample had at least seven prior convictions and spent at least five years incarcerated.

Three years following the initial random assignment procedures, Redcross et al. (2012) conducted a follow-up examination of the sample and examined offender employment and recidivism rates. They found that CEO participants initially had large increases in employment however, this was due to them being placed in transitional employment at the outset. These gains faded over time and three years after offenders

were randomly assigned, program participants were no more likely to be employed than offenders who were randomly assigned to traditional job search services.

To determine the impact of program effects on recidivism rates, Redcross et al. (2012) examined three measures of recidivism. These included re-arrest, new conviction, and re-incarceration. Redcross et al. (2012) found some differences between the different outcome measures examined. First, when re-arrest was examined they found that there was no statistical difference in re-arrest rates between treatment and control groups during the three-year follow-up period. Second, for a new conviction they found a marginal statistical difference (.10 level) between treatment and control groups during the three year follow-up period. This finding indicated that program participants were less likely to be convicted for a new offense (43.1 percent) than the control group (48.8 percent). Third, when incarceration was examined, the treatment group was significantly less likely to be re-incarcerated (58.1 percent) compared to the control group (65 percent).

Overall, CEO is an intensive and well intentioned transitional employment program. While the program failed to significantly increase offender employment and decrease offender re-arrest rates among a high-risk group of offenders, the program did have marginal impacts on reconvictions and stronger impacts on re-incarceration rates. This analysis employed various measures of recidivism in an effort to paint an accurate picture. While these efforts are commendable, the outcomes of this more recent analysis predominately support findings of prior examinations of transitional employment programs, indicating that they are ineffective at increasing offender employment rates and decreasing recidivism rates (Bloom et al., 2009; Ginzberg et al., 1980; Moses, 2012).

In summary, offender transitional employment programs seek to provide job opportunities to the offender population who are the most difficult to employ and are oftentimes, higher risk offenders. This population consists of more serious/chronic type offenders who have spent significant periods of their lives incarcerated and who have been arrested on multiple occasions. While transitional employment programs provide a wealth of resources and services to this high risk offender population, the impacts from transitional employment programs have been shown to be largely ineffective.

Meta-Analysis of Employment Programming

In a comprehensive review of previous employment based studies and employment programming both Wilson et al. (2000) and Visher et al. (2005) arrived at similar conclusions using meta-analytic techniques. Wilson et al. (2000) and Visher et al. (2005) examined employment program studies and evaluations spanning multiple decades to investigate the effectiveness at increasing offender employability and recidivism reduction. The outcome of their respective meta-analyses' provides comprehensive insight into the extent of employment programming effectiveness.

Wilson et al. (2000) examined 33 corrections based education, vocation, and work program studies and their impacts on increasing offender employment rates and reducing recidivism. Of these 33 program studies that are included in their meta-analysis, 14 were derived from journals and book chapters, 10 were government reports or government evaluations, and 9 were unpublished manuscripts (Wilson et al., 2000). The studies examined covered three decades of research ranging from the 1970's through the 1990's.

Overall, Wilson et al. (2000) identified nine of the 33 studies which examined offender employment rates in addition to recidivism rates. For offender employment

rates, the largest effects were observed for vocational programs which produced a significant and positive effect on offender employment rates. However, Wilson et al. (2000) did not report the duration of these employment gains among the vocational program specific studies analyzed. Wilson et al. (2000) findings are consistent with other research which has indicated that vocational programming has positive impacts on offender employment rates (Saylor & Gaes, 1992).

While positive offender employment impacts were observed among vocational training programs, overall, Wilson et al. (2000) found that there is "insufficient" evidence to conclude that participation in work programs either increases offender employment rates or reduces recidivism rates. Wilson et al. (2000) indicates, that of the 33 studies reviewed, 29 of them were of "poor methodological quality" (p. 361). For instance, among the studies examined, only three used random assignment and one used a strong quasi-experimental design. The studies that employed stronger methodological designs produced more tempered program effects. However, the difference in the program effects produced between studies with strong methodological designs and those with weaker methodological designs was not statistically significant (Wilson et al., 2000).

As a result, the few programs that did produce positive findings indicating that employment programming had an effect either on increased offender employment rates or reduced recidivism rates, may be due to the outcome of individual participant differences and selection bias as opposed to the employment program itself (Wilson et al., 2000). This lack of confidence in study findings is attributable to the poor methodological designs of the studies examined. Unfortunately, the poor methodological study designs significantly limit any causal inferences that could be made regarding the

employment program studies examined and their effectiveness in increasing offender employment rates and decreasing recidivism rates.

More recently and in the most comprehensive review conducted to date, Visher et al. (2005) used meta-analysis to examine eight studies. The eight studies examined encapsulate 25 years of community-based offender employment programming and recidivism research, dating back to the early 1970's. Visher et al. (2005) examined only studies which had strong methodological research designs which is why the meta-analysis was limited to eight studies. Similar to Wilson et al. (2000) there were only a handful of studies which meet this criteria.

Among the eight studies examined, all use a random assignment study design. The studies accounted for offenders as young as age 16 to those in their 40s. Four of the studies were published in academic journals or books, three were unpublished manuscripts, and one was government report. The studies examined a variety of programs including job readiness programs, intensive vocational programs, and job placement assistance programs. In total, the studies included in the meta-analysis encapsulated over 6,000 offenders who received some type of community based employment programming service.

Visher et al. (2005) uses recidivism as the primary outcome measure. Among the studies examined, recidivism was defined in two ways, 1) if a new arrest had occurred or 2) if there was a new conviction. Each of the studies had different follow-up time periods to assess if an offender recidivated. Among the studies examined, the follow-up period ranged from six to 36 months. Based on their analysis, Visher et al. (2005) concluded that community based employment programming did not reduce recidivism any more

than chance alone among the offenders who participate in employment programming when released to the community. Further, when the outcome variable, recidivism, was divided into categories of re-arrest or new conviction, the results and the interpretation of the results did not change. Lastly, Visher et al. (2005) did not find any age effects as found by Uggen and Staff (2001), where employment programming for offenders age 26 and older produced significant effects in reducing recidivism.

Summary of Employment Programming Literature Review

In summary, the body of research surrounding vocational training programs, work release programming, job readiness programs, transitional employment programs, and other types of employment programming has produced mixed results. Some of these domains such as vocational training programs have produced and continue to produce promising results. However, others such as job readiness and transitional employment programs have produced lackluster impacts in increasing offender employment and reducing recidivism rates. Further, there is a lack of clarity of which program components are effective at increasing employment rates and reducing recidivism.

While there are many programs and evaluation studies which have produced positive outcomes, the methods used in the evaluation of these programs are questionable and oftentimes lack scientific methodological rigor by which confident conclusions can be derived (Seiter & Kadela, 2003; Visher et al., 2005; Wilson et al., 2000). Research on employment, employment programming, and the offender population continues to be evaluated cautiously due to the challenges in doing random assignment studies to reduce the chances that selection bias is playing a role in the outcomes. In addition, much of the research that has been produced examining the effects of employment programs is dated

(Visher et al., 2005; Wilson et al., 2000). It has been clear that the changing landscape of the employment sector is rapidly evolving. Moving forward, more research is needed to determine what specific employment program components or combination of such components have the greatest impact on both increasing employment rates and reducing recidivism rates among offenders reentering society.

While some employment program components may prove to be effective in increasing employment rates and reducing recidivism, Bushway and Apel (2012) have indicated that it is the individual's attributes that matter most. For Bushway and Apel (2012) the employment program and the strict nature of the program components construct a pathway to demonstrate the value of these individual attributes. These individual attributes are signaled by offenders through their voluntary enrollment in and the successful completion of such employment programs.

Signaling Theory and Employment Programming

Bushway and Apel (2012) have invited the research community to explore the utility of signaling theory in crime desistance. Specifically, Bushway and Apel (2012) operationalize employment programming as a means through which an offender, within a specified risk category, is able to signal to society that they have made a cognitive shift away from an antisocial lifestyle. As a result, Bushway and Apel (2012) assert that offenders are able to successfully communicate a shift away from a life of crime as modeled through their achievement of completing a rigorous employment program. This is similar to the idea asserted by Bushway and Reuter (2004) which indicated there is a fundamental difference between offenders who voluntarily participate in programming compared to those that do not. Offenders who choose to participate in employment

programming are demonstrating that they are motivated to move away from criminality toward a conventional lifestyle. Stated differently, offenders are "signaling" to society that they have changed (Bushway & Apel, 2012; Bushway & Reuter, 2004).

Signaling theory was first advanced by Spence (1973) through labor economics. The premise behind signaling theory is just that, there is a signal to be observed which differentiates between productive and unproductive people or motivated and unmotivated employees. It is not a causal process, but rather is an identification or selection process which allows individuals to communicate using behavioral indicators. It is the behavior or the achievement which communicates or signals the likelihood of success or failure. Signaling theory does not provide a directly observable relationship but rather it provides a framework for a process through which a combination of behaviors can be observed.

Signaling theory focuses on the costs associated with the signal. A diverse range of costs are encompassed and vary depending on the process or situation. Therefore, in any situation where a signal is observed, individuals must have similar circumstances to equate the costs across individuals. This will assist in ensuring the authenticity of the signal. The example used by Spence (1973) is employees in a single company who work to identify themselves as good or bad employees. This dissertation uses offenders identified as serious and violent offenders. Signaling theory indicates that individuals with similar circumstances have the opportunity to voluntarily transcend the costs and when this occurs, those that are motivated separate themselves from those that are not, a point from which a signal can be observed. In addition, there are other criteria to ensure a signal is valid. For a signal to be valid and of an appropriate strength, the following criteria must exist:

1) The signal must be voluntary;
2) The signal must impose a cost that varies inversely with an unobserved variable;
3) The signal must be attainable by a small proportion of the population;
4) The signal must be one that society is willing to recognize as being credible.

A good example of signaling theory is embodied through the confirmation process in the Church. First, the choice of an individual to be confirmed in the Church is voluntary, provided their beliefs. Second, an individual must voluntarily choose to endure the costs associated with attending Church confirmation classes regularly (time cost), participate in Church service opportunities and complete confirmation class assignments (extra responsibility cost), and to some degree donate monetarily (financial cost). Third, not everyone who attends Church decides to enroll in or is confirmed by the Church. Therefore, it is a restricted participant pool. Fourth, if an individual can fulfill such requirements, they meet the prerequisites to be confirmed by the Church and they then can be formally confirmed by the Church.

Society widely recognizes behaviors demonstrated through the completion of the Church confirmation process as credible and satisfies the expectations of the Church. As a result, this provides the Church with reassurance that those confirmed have faith and support the doctrine within the Church as their own beliefs and values structure. Members of the Church and the Church recognize that the completion of the Church confirmation process sends a strong signal regarding the productivity, value structure, and faith of the individual.

As a result, Spence (1973) presented a perspective which can be utilized to make decisions based on objective indicators which meet specified criteria. This paradigm is a roadmap guided by signals which are measured and assessed through behavior. Bushway and Apel (2012) operationalize the perspective advanced by Spence (1973) and apply the signaling framework to employment programming and the offender population. In their efforts, they assert that when an offender completes a rigorous employment program, the offender is sending a message to society that they have changed their antisocial thought processes and their antisocial behaviors (costs). In addition, Bushway and Apel (2012) assert that offenders who complete rigorous employment programs demonstrate unobservable motivational factors and are "better bets" for employers hiring individuals who have a criminal history[2].

Applying signaling theory's criteria to test Bushway and Apel's (2012) assertions regarding employment programming, the following can be stated:

1) The signal must be voluntary (choosing to participate in structured employment programs by volunteering to participate in SVORI);
2) The signal must impose a cost (the costs associated are more costly to offenders who change their antisocial thought processes, antisocial behaviors, and antisocial associates);
3) The signal must be attainable by a small proportion of the group of interest (moderate and higher risk level offenders = low employment rates and high re-arrest rates. Few moderate and higher risk offenders volunteer for and complete employment programs);

4) The signal must be one that society is willing to recognize as credible (participation and completion of formal employment programming).

The subgroup of offenders who volunteer to participate in employment programming and those that successfully complete employment programs are a group within a given risk category who have made cognitive and behavioral progress in an effort to participate in and complete such a program. This is the same group that is likely to self-identify with their employment while desisting from criminal behaviors (Brennan, 2012). Reflecting on these criteria, signaling theory according to Bushway and Apel (2012) asserts that employment programs are a channel through which offenders have the opportunity to demonstrate unobservable behaviors indicative of secondary desistance. This can enhance the process of identifying real-time secondary desisters more effectively. In addition, identifying offenders who complete rigorous employment programs provides a pool of potential employees who have signaled they have the dedication required to complete such a program and are motivated to work and maintain employment. When ex-offenders are hired by employers who are willing to hire individuals with significant prior criminal records, and these ex-offenders are successful employees, this develops positive relationships with employers and increases the number of employers who are willing to hire ex-offenders. In essence, it begins to chip away at the stigma associated with being a criminal offender and the labels associated with such.

Risk-Need-Responsivity (R-N-R) and Employment Programming

R-N-R is a model that provides insight into the likelihood that an offender may recidivate (Latessa & Lowenkamp, 2006; Polaschek, 2012). R-N-R assessments accomplish several interrelated issues. First, they assess the risk level that an offender

will recidivate within a given time period. They do this by measuring static and dynamic risk factors (criminogenic needs) that are associated with criminal behavior. Static factors are factors that cannot be changed such as age, number of prior arrests, and gender, to name a few. Dynamic factors are factors that can change such as substance abuse and education/employment status (Andrews & Bonta, 2003; Gendreau, Little, & Goggin, 1996).

Second, they assess an offender's criminogenic needs. A criminogenic need is a dynamic crime producing factor that can change and reduce the risk of recidivism, if properly targeted (Latessa & Lowenkamp, 2006). For example, antisocial behavior, antisocial personality pattern, antisocial associates, antisocial cognitions, substance abuse, school/work, family/marital status, and leisure/recreation are all criminogenic needs that if not addressed will increase the risk that an offender will recidivate (Andrews & Bonta, 2003; Andrews & Bonta, 2006; Andrews et al., 2006; Gendreau et al., 1996). As a result, using targeted interventions to address criminogenic needs in higher risk populations has been shown to reduce recidivism (Andrews et al., 2006; Gendreau et al., 1996).

Third, the assessments identify responsivity factors which may present barriers that will obstruct progress in addressing the criminogenic needs (Latessa & Lowenkamp, 2005; Latessa & Lowenkamp, 2006). Responsivity factors are broken down into two categories, general and specific. General responsivity captures the theoretical orientation behind the structure and style in the delivery of treatment principles. The R-N-R model is rooted in the social learning perspective where offenders acquire or change attitudes and behaviors through a process of prosocial persons modeling such attitudes and

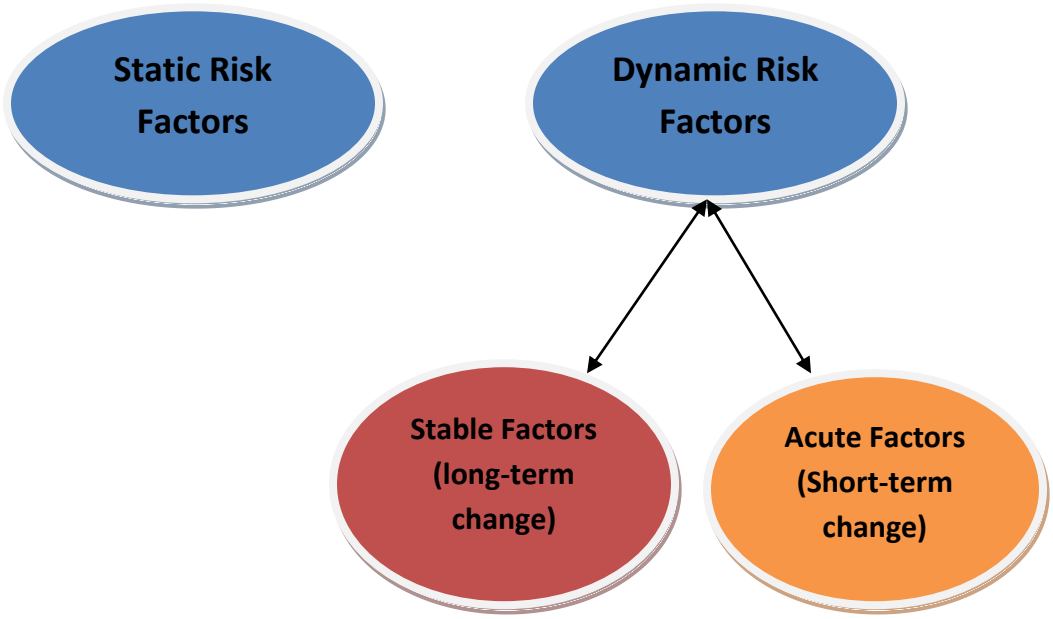
behaviors (Andrews & Bonta, 2003; Andrews et al., 2006; Bandura, 1977). Offenders have the opportunity to role play and practice new skills and behaviors either in the treatment environment or with their probation officer. As a result, social learning and cognitive restructuring generally occur through cognitive modeling, role playing, and are supported by positive reinforcement (Smith, Gendreau, & Swartz, 2009; Widahl, Garland, Culhane, & McCarty, 2011) and is effective with moderate and higher risk offenders.

Specific responsivity captures specific offender characteristics and matches them to the delivery of services (Andrews & Bonta, 2006; Smith et al., 2009). For example, reading and writing ability, language barriers, transportation barriers, the motivation level of the offender, mental health status, and physical handicaps, are a few specific responsivity factors that influence the ability of an offender to receive services. Specific responsivity factors are classified on a case-by-case basis and must be addressed first, to most effectively target and treat criminogenic needs.

Conducting a risk assessment and obtaining a risk level resulting from that assessment allows institutions to effectively categorize offender populations based on risk levels. At the case management level, risk assessment identifies both general and specific responsivity issues to better match services to individuals, targeting their criminogenic needs (Andrews et al., 2006). Effectively matching both the type of service and the dosage of that service to individual offenders within the appropriate risk categories has effectively been shown to have appreciable reductions in recidivism (Andrews & Bonta, 2003; Latessa & Lowenkamp, 2006; Lowenkamp, Latessa, & Holsinger, 2006).

Recently, researchers have demonstrated that there are different types of factors within a criminogenic need. These factors fall into two categories, stable and acute factors (Latessa, 2012; Serin, Lloyd & Hanby, 2010). Stable factors take more time to change and can be categorized as factors that revolve around long-term behavioral changes. Acute factors can change rapidly and can be categorized as factors that revolve around short-term lifestyle changes, sometimes on a daily basis (Latessa, 2012; Serin et al., 2010).

Figure 1 - Risk Factors



Examining these factors within the employment criminogenic need and under an R-N-R perspective highlights the difference between stable and acute factors. Within the employment criminogenic need, there are stable and acute components. The acute component consists of the offender's current status, such as being employed or unemployed. It also includes participating in employment programming or not participating in employment programming.

The stable behavioral change component subsumes long-term change processes. The stable component consists of the offender being able to communicate and get along with co-workers, being able to show up to work on time, being able to solve problems, not acting impulsively, having positive attitudes about employment, and being able to self-identify with their employment. While both acute and stable components are important within the employment criminogenic need, changing the stable components which consist of cognitions, attitudes, and behaviors take more time and result in long-term offender behavioral change (Latessa, 2012; Serin et al., 2010; Serin, 2012).

The importance of both stable and acute factors is highlighted in a recent study of parolees in Pennsylvania conducted by Bucklen and Zajac (2009). They provided an 85-item survey to 591 parole violators who were confined in Pennsylvania's correctional institutions from December 2002 to January 2003. After obtaining a high response rate, they followed up with focus groups which discussed the reentry experience of parole violators. Two years later, they followed up with parole successes and provided a similar, 72-item survey to 704 successful parole cases. They received a 30 percent response rate from the successful parolees. When the two groups were compared, Bucklen and Zajac (2009) found that obtaining a job (acute factor) did not produce significant impacts in predicting recidivism while on parole. However, when they examined predictors of failure, they found that poor attitudes towards their employment, poor problem solving skills, criminal peers, and grandiose life expectations (stable factors) were all significant predictors among offenders who failed (Bucklen & Zajac, 2009).

Their analysis demonstrates the importance of targeting stable as opposed to acute risk factors when impacting employment as a criminogenic need. Impacting stable risk factors takes more time and effort and is linked to an offender's anti-social tendencies and cognitive abilities, a hypothesis advanced by Andrews et al. (2006). It is clear that for lasting behavioral change to occur and to see significant reductions in recidivism these stable factors must be targeted.

Criminogenic needs, such as employment, are multidimensional and require a strategic approach in substantively altering the significance of the risk factor. When addressing dynamic risk factors in an attempt to impact behavioral change, the overall risk of the offender must be considered. When risk is examined, there are several skill sets that an offender would need to possess or be committed to developing to be able to successfully complete a rigorous employment program or maintain employment over a long period of time. Some of the skill sets include, basic communication skills, being able to follow directions and meet deadlines for assignments and tasks, utilizing basic hygienic practices, being able to receive feedback and suggestions for improvement, showing up on time, actively participating in group activities and being able to get along with others, respecting the perspectives of others, and so on. This list is by no means exhaustive.

When the skill sets required for successful employment are compared and contrasted with the traits observed among the different risk levels, a subgroup emerges. This subgroup is the target group used to identify the secondary desisters. In other words using a signaling theory approach, this subgroup is where the "signal" is observed. For example, among low risk offenders, most of them are like us. Most of these offenders

have the cognitive skills to function in society. For these offenders, this translates to understanding the importance of employment in providing income to meet their obligations and responsibilities. Further, these offenders have the cognitive capacity to understand the importance of how to show up for work on-time, how to respond to different demands placed on them by an employer, how to communicate and get along with their co-workers, and they are often able to self-identify with their employment. In addition, these offenders are prosocial and look to create promotional opportunities or, if they lose their employment, begin to actively seek other employment opportunities.

In summary, for this lower risk level of offender, employment plays a significant pro-social role in their daily activities and works to occupy time. Most of these low risk offenders never persisted in criminal activity as identified by their low risk classification, and as a result, do not have the ability to send a "signal" that they are desisting. For low risk offenders the tenets of signaling theory are not supported. Largely, the signal does not impose a cost that varies inversely with an unobserved variable. Therefore, low risk offenders do not meet the criteria required to be able to send a signal in the signaling framework.

For moderate and high risk offenders the signal does impose a cost that varies inversely with an unobserved variable. The subgroup within this population is the subgroup in which Bushway and Apel (2012) identify as being able to "signal." Offenders classified in moderate and high risk categories have longer criminal histories and varied offending patterns. They have antisocial attitudes and engage in antisocial behaviors as documented through their prior criminal history. In addition, these offenders are likely to maintain antisocial peer networks and to engage in other high risk

impulsive behaviors affirming their antisocial self-identity. As a result, employment and employment programming is an opportunity for them to associate and function within their anti-social peer network. Employment program participation is less about bettering themselves and making strides towards lasting behavioral change. Frequently, these offenders are employed not because they self-identify with their employment, but because one or more of their anti-social peers may be employed in the same occupation and in the same environment or physical location. When these higher risk offenders are unemployed, they are oftentimes required to participate in employment programming by the Court. When this participation is forced, their attendance is sporadic, they maintain an unmotivated disposition, and are disruptive in the group. Rooted in practical experience, very few moderate and high risk offenders who are forced into an employment program realize the benefits and resources such programs can provide.

Based on these descriptions it is clear that there is a substantial qualitative difference between low and moderate/high risk offender classifications. This qualitative difference is observed in the degree to which antisocial cognitions, attitudes, and behaviors are present within the respective risk categories. The presence of antisocial cognitions, attitudes, and behaviors affects an offender's outlook on employment and the offender's thought processes regarding the importance of employment in sustaining a daily routine and meeting daily responsibilities.

Signaling Theory and the R-N-R Model: A Comparative Approach

The conceptualization and categorization of an offender's risk level is critical to establishing the criteria among the subgroup within which the signal can be observed (Bushway & Apel, 2012). The R-N-R model is a causal model which categorizes the risk

level of the offender and identifies the dynamic risk factors for offenders who fall within that risk category. In other words, when offenders are assessed using the R-N-R model, this sets a baseline risk level from which they can begin to differentiate themselves from other offenders within the same risk level through a signaling approach. An example of this would be in the case of high risk offenders who have been formally assessed and categorized using a formal risk assessment built on the tents of the R-N-R model. Within the grouping of offenders who have been classified as high risk offenders, a small subset of offenders emerge who choose to participate in rigorous employment programming. Those that complete employment programs are sending a pronounced signal that they have engaged the behavioral change process compared to other offenders in the high risk group who do not participate or do not complete the program. Signaling theory is a works as a selection model within the R-N-R framework. From this perspective both the R-N-R model and signaling theory go hand-in-hand and complement one another. They both provide a structure within which each other functions.

Another similarity between the R-N-R model and signaling theory is that they are both trying to identify and provide information regarding future behavior and the extent to which the offender has made behavioral changes. Signaling theory attempts to identify offenders who have begun the secondary desistance process. The R-N-R model attempts to identify offenders who have made behavioral changes which affects their risk level and their propensity to recidivate. While both perspectives are trying to identify recent behavioral changes, the R-N-R model incorporates more dynamic risk factors than that of signaling theory and uses more indicators from which to draw conclusions (Brennan, 2012).

In contrast, a significant difference between signaling theory and the R-N-R model was fleshed out in Maruna (2012) in his discussion between the two approaches. A major difference between signaling theory and the R-N-R model revolves around power and control of categorization. Under signaling theory, the offender is signaling secondary desistance whereas under the R-N-R model, the case officer is observing behaviors for "signs" of change in risk. Thus, according to signaling theory, the offender has the power to control which "signals" to reveal. Under the R-N-R model, the case officer controls which "signs" he or she will assess as having changed (Maruna, 2012). This creates a tension between the two perspectives, one where the offender is in control of pronouncing a signal and the other where the case officer is in control of assessing and communicating behavioral change, both of which has a direct effect on risk level categorization.

Another major difference between the R-N-R model and signaling theory is that the R-N-R model accounts for multiple static and dynamic risk factors in determining the risk level of an offender. These factors include criminal history factors, demographic factors, social history factors, substance abuse and employment factors, and cognitive factors. In contrast, signaling theory is more specific in that it functions within a specific dynamic factor, utilizing a formal programming process for offenders who voluntarily choose to participate in programs for employment, substance abuse, cognitive behavioral treatment, and family/marital programming. Voluntary enrollment in and completion of these programs require significant levels of effort, motivation, and sacrifice (costs imposed) for these offenders who fall within moderate and high risk classification levels.

Examining the time sequence of assessment, the R-N-R model and signaling theory have some differences. R-N-R assessments and re-assessments reflect changes in status and identify criminogenic needs which have occurred over the past time period (either six months or one year). In this sense, these assessments have a real time component but are mostly reflective in nature. Signaling theory incorporates more of a real time perspective, identifying offenders who have enrolled in a program or are making progress in completing a program, indicating future development and engaging change behaviors (Brennan, 2012).

In corrections it is often discussed that real change occurs when offenders decide to change. Similar to the old saying, "You can lead a horse to water but you can't make them drink." From this perspective the offender is ultimately in control, and their secondary desistance is based on the choices they continually make. This may be a naturally forced decision based on physical limitations, injury, disease, old age, or a voluntary decision to engage the behavioral change process. In this process, practitioners provide resources to offenders in an effort to expedite this change process but ultimately the decision to engage processes to make lasting change lies with the offender. Both the R-N-R model and signaling theory assess the offender's progress in making such decisions. As a result, the two perspectives can work well together but also have distinct differences which should be recognized.

CHAPTER 3

DATA AND METHODS

Hypothesis

To date, the R-N-R model has been the only model which produces empirically validated interventions in an effort to divert offenders from future criminal behavior (Polaschek, 2012). While signaling theory does not produce interventions to divert offenders from future criminal behavior, it does have the potential to identify offenders who have begun the process of diverting themselves away from criminal behavior (Bushway & Apel, 2012). Currently, there are no known studies which have tested Bushway and Apel's (2012) assertions of employment programming applied through signaling theory.

The structure and nature of the data adhere to the tenets of signaling theory. This enables conclusions to be drawn from a signaling theory framework. The structure of the data is such that participation in SVORI programming which includes any employment programming received either in the institution or in the community, is voluntary. As a result, any signals produced are voluntary (first tenet). Offenders who volunteer to participate in SVORI programming endure costs which communicates unobserved information regarding behavioral change processes that employers or case officers would like to know (second tenet). The offenders in the sample are serious and violent offenders. The costs imposed on these offenders through the process of volunteering to participate in SVORI programming creates a pool where the signal is only attainable by a small proportion of the population (third tenet). According to Fahey, Roberts, and Engel (2006) employers reported that offenders who completed a transitional reentry program

and those that work to establish a healthy employment record are significantly more likely to be considered when employers hire. Therefore participation in SVORI coupled with employment programming services, produces a signal that society is likely to recognize as being credible (fourth tenet).

The current dissertation will examine the following hypotheses to test signaling theory and employment programming as advanced by Bushway and Apel (2012) in their lead article in Criminology and Public Policy. In addition, this research will examine if participation in employment programming increases employment rates and decreases re-arrest rates as prior research has attempted to do.

Employment Hypothesis

1) Male and female offenders who participate in voluntary employment programming during their term of incarceration are more likely to obtain employment than male and female offenders who do not at three, nine, and fifteen months after their release from incarceration (Berk, 2008; Saylor & Gaes, 1992).
2) Male and female offenders who participate in voluntary community based employment programming are more likely to be employed at three, nine, and fifteen months after their release from incarceration than male and female offenders who did not participate in voluntary community based employment programming (Finn, 1998; La Vigne et al., 2003).

These two hypotheses test the following: First and as discussed, signaling theory indicates that offenders who voluntarily choose to participate in SVORI services and receive employment programming are signaling to employers they are completing a transitional reentry program and are working to build a positive employment record.

They should have higher rates of employment. Second, these hypotheses will illuminate the effectiveness of employment programming received in the institution (Wilson et al., 2000) and employment programming received in the community (Visher et al., 2005). The effects of participating in employment programming at these two distinct stages of reentry will add to the discussion regarding employment programming and the effectiveness at different stages of reentry.

Recidivism Hypothesis

1) Male and female offenders who participate in voluntary employment programming during their term of incarceration are less likely to be re-arrested than male and female offenders who do not at three, nine, and fifteen months after their release from incarceration (Aos et al., 2006; Berk, 2008; Drake, 2007; Gordon & Weldon, 2003; Saylor & Gaes, 1997).
2) Male and female offenders who participate in voluntary community based employment programming are less likely to be re-arrested at three, nine, and fifteen months after their release from incarceration than male and female offenders who do not participate in voluntary community based employment programming (Finn, 1998; La Vigne et al., 2003).

These two recidivism hypotheses test signaling theory by examining re-arrest. According to signaling theory, for offenders who voluntarily participate in SVORI and accept the costs associated with participating in employment programming offered through SVORI are signaling unobservable behaviors that have changed or are in the process of changing. Ultimately, this is reflected in an outcome measure of their behavior such as reduced re-arrest rates. In addition, examining these hypotheses will

provide insight into differences in re-arrest rates between offenders who receive employment programming services while they are incarcerated and those that receive employment programming services in the community.

In summary, this dissertation serves the following research purposes. First, the data are examined to determine if voluntary participation in institutional employment programming has any impacts for both employment and re-arrest outcomes at three, nine, and fifteen months after offenders are released from their terms of incarceration. Second, data are examined to determine if voluntary participation in community based employment programming has any impacts for both employment and re-arrest outcomes at three, nine, and fifteen months after offenders are released from their terms of incarceration. Third, the models are specified to explain offender behavior through a signaling approach as advanced by Bushway and Apel (2012). This is an exploratory test and application of signaling theory as advanced by Spence (1973) and contextualized by Bushway and Apel (2012) in the explanation of participation in offender employment programming and re-arrest outcomes.

Data and Sample

The data used in this dissertation were secured from ICPSR at the University of Michigan and this study has been approved by the Iowa State University Institutional Review Board. The dataset used is titled The Serious and Violent Offender Reentry Initiative (SVORI), and was collected by Pamela Lattimore, RTI International, and Christy Visher, University of Delaware and the Urban Institute. The SVORI data collection and project was supported by a grant from the National Institute of Justice.

The SVORI sought to develop programs to enhance outcomes for serious and violent offenders releasing from a term of incarceration. The initiative's purpose was to determine if offenders who received enhanced programming (SVORI services) at selected programming sites had better outcomes than a comparison group of offenders who received treatment services as usual. Program participants included in the sample had significant criminal and substance abuse histories, significant educational and employment deficits, and high levels of need in other areas (Lattimore, Steffey, & Visher, 2010; Lindquist, Lattimore, Barrick, & Visher, 2010). The participants are considered serious higher risk and violent offenders who have extensive criminal histories in the criminal justice system.

The data in the sample were collected in 12 states across the United States from July 2004 to May 2007. Offender interviews occurred 30 days prior to release from incarceration with follow up interviews occurring at three, nine, and fifteen months post-incarceration. Interviews were conducted to obtain up-to-date information on the offender's use of SVORI services in reference to their program participation and adjustment continuously throughout the reentry process. In addition to the interviews, administrative records including re-arrest indicators from the National Crime Information Center (NCIC) at the Federal Bureau of Investigation (FBI) were obtained for the sample from July 2004 through December 2007 (Lattimore & Steffey, 2010). Administrative re-arrest records formally document any new arrests that have occurred and are used to protect against internal validity biases relating to offender-self reported criminal history.

The samples consist of 1,697 males and 357 females who are classified as being serious and violent offenders[3]. Within the sample, 51 percent (n = 863 male offenders)

and 43 percent (n = 153 female offenders) received SVORI services with a comparison group of 49 percent (n = 834 male offenders) and 57 percent (n = 204 female offenders) who received treatment services as usual. To determine SVORI program participation eligibility, pre-determined criteria was established to classify offenders as meeting the standards for participation in SVORI programming.

In all of the sites selected, SVORI program participants voluntarily agreed to participate in SVORI programming. In two sites, Iowa and Ohio, offenders were randomly assigned into treatment and control groups after they agreed to participate[4]. In the other ten sites, once offenders agreed to participate, they were included in SVORI programming. For these ten sites a comparison group was developed by screening for offenders who met the SVORI eligibility criteria but were not asked to participate in the SVORI programming due to the programming not being offered in the institution that they were housed in or in the community to where they were releasing (Lattimore & Steffey, 2010). However, offenders who were not asked to participate, met the SVORI screening criteria and serve as the control group using the treatment as usual paradigm. This allows for a quasi-experimental research design (Lattimore & Steffey, 2010).

Signaling theory indicates that the signal must be voluntary. Therefore, propensity scores are used to create weights to balance on SVORI program participation. This encapsulates any employment programming participation through SVORI, considered voluntary. Routinely, lack of employment or the lack of participation in employment programming are enforced through technical violations and intermediate sanctions imposed on offenders. This forces offenders to comply with their conditions of release and to participate in such programming. As a result, using other covariates to

create propensity score weights such as employment or employment programming would not support the tenets of signaling theory.

Propensity scores were used to create weights which are applied to the male and female samples. The propensity score technique is used to control for self-selection bias among offenders who volunteered to participate in the SVORI programming compared to those offenders who did not. In other words, it creates balance between the measured characteristics included the dataset of offenders who received the SVORI treatment compared to those that did not. This ensures there are not any significant differences on the characteristics measured between the two groups other than the SVORI programming treatment (Lattimore & Steffey, 2010).

A variety of variables and offender characteristics were used in the propensity score model to develop weights to balance the samples. The variables used in the propensity score model are constructed from static measures which were present prior to the incarceration for the instant offense for any offender included in both the male and female samples. The variables used in the propensity score model to create the weights were drawn from the interviews which occurred one month prior to the respective offender's release from incarceration. The variables consisted of the following: age at incarceration, racial characteristics including White, Black, and Other, homeless prior to incarceration, employed prior to incarceration, married or in a steady relationship prior to incarceration, had alcohol or other drug treatment prior to incarceration, had mental health treatment prior to incarceration, victimization prior to incarceration, perpetrated violence prior to incarceration, substance use 30 days prior to incarceration (alcohol, marijuana, other drugs), type(s) of instant offense(s) (person, property, drug, public

order/other), arrest rate, conviction rate, incarceration rate, any juvenile detention, and age at first arrest (Lattimore & Steffey, 2010).

As noted, there were a range of offender characteristics included in the samples. The average age of the male offenders in the sample was 29.1 years with a standard deviation of 7.31 years. For the female offenders, the average age was 31.41 years with a standard deviation of 6.85 years. The age of male offenders ranged from 18 to 73 years and for female offenders ranged from 19 to 57 years. Both the male and female offenders included in the sample had diverse backgrounds. For male offenders, 34.1 percent (n = 578) were White, 53.3 percent (n = 904) were Black, 2 percent (n = 33) were American Indian, Asian, or Pacific Islander, and 4 percent (n = 70) identified as Hispanic. In addition, respondents were able to identify all race categories that applied. As a result, 6 percent (n = 109) identified as being categorized within multiple race categories. Overall, there were .2 percent (n = 3) cases which did not have any data pertaining to race. For the female offenders, 43.7 percent (n = 156) were White, 40.6 percent (n = 145) were Black, .8 percent (n = 3) were American Indian, Asian, or Pacific Islander, and 6.2 percent (n = 22) identified as Hispanic. Similar to the male offenders, respondents were able to identify all race categories that applied. As a result, 8.7 percent (n = 31) of females identified as being categorized within multiple race categories.

MEASURES

Dependent Variables

Table 1 shows the dependent variables included in the models for males and the summary statistics associated with each. Three dependent variables were used to measure employment outcomes for males at three, nine, and fifteen months post-release. These variables include 1) having a job at any point since incarceration at three months post-release (M = 0.74, SD = 0.44), 2) having a job at any point since incarceration at nine months post-release (M = 0.81, SD = 0.39), and 3) having a job at any point since incarceration at fifteen months post-release (M = 0.77, SD = 0.42).

Table 2 shows the dependent variables included in the models for females and the summary statistics associated with each. These variables include 1) having a job at any point since incarceration at three months post-release (M = 0.62, SD = 0.49), 2) having a job at any point since incarceration at nine months post-release (M = 0.73, SD = 0.44), and 3) having a job at any point since incarceration at fifteen months post-release (M = 0.71, SD = 0.46). These dependent variables were selected for both the male and female models because prior research has utilized similar outcome measures to measure post-release employment outcomes (Saylor & Gaes, 1992). In addition, utilizing these measures will allow for the identification of offenders who actually obtained employment for any duration at some point during their reentry back into the community.

Recidivism is classified as any arrest. Therefore, administrative re-arrest data was collected on the males at three (M = 0.17, SD = 0.38), nine (M = 0.42, SD = 0.49), and fifteen (M = 0.56, SD = 0.50) months after release and similarly for females at three (M =

0.14, SD = 0.35), nine (M = 0.33, SD = 0.47), and fifteen (M = 0.44, SD = 0.50) months after release.

All dependent variables included in the models are binary with (0, 1) outcomes. When dependent variables are binary, logistic regression methods produce more accurate estimates than that of linear regression. In addition, logistic regression methods allow for the use of both categorical and continuous types of independent variables to be included in the models (Menard, 1995). Therefore, all regression models will use logistic regression methods to estimate the models.

Independent Variables

All independent variables included in the models and associated summary statistics are depicted in Table 1 for males and Table 2 for females. Similar to prior research demonstrating the explanatory power of demographic measures, four demographic controls were included in the models. These include age at incarceration which is continuously coded for males (M = 26.59, SD = 7.46) and for females (M = 29.69, SD = 7.17) (Farrington, 1986; Hirschi & Gottfredson, 1983; Shulman, Steinberg, & Piquero, 2013), White (dichotomous 1 = yes) for males (M = 0.32, SD = 0.62) and for females (M = 0.44, SD = 0.50), Black (dichotomous 1 = yes) for males (M = 0.52, SD = 0.64) and for females Black was dropped from the analysis, Hispanic (dichotomous 1 = yes) for males (M = 0.03, SD = 0.43) and for females (M = 0.06, SD = 0.24) (Gendreau et al., 1996; Greenberg, 1991; Harer & Steffensmeier, 1996; Pager, 2003; Phillips, 2002). The demographic control measures were collected both during the interview process one month prior to the respective offender's release from incarceration and through the review of other administrative records (Lattimore & Steffey, 2010).

To control for the impacts of relationships and consistent with findings of Sampson, Laub, & Wimer (2006) which demonstrate that marriage and relationships have a negative impact on recidivism over an extended period of time, a relationship variable was included in the models. Therefore, prior intimate partner captures if any offender had an intimate partner up to six months prior to their current incarceration (dichotomous 1 = yes) both for males (M = .66, SD = .66) and for females (M = .71, SD = .45) (Sampson, Laub, & Wimer, 2006).

Education and employment variables were included in the models to provide a more accurate measurement of educational and employment programming experience and the outcomes derived. Therefore, education for males, ranged from first grade (coded as 1) to an advanced degree (coded as 18) completed (M = 11.80, SD = 2.26) and for females, ranged from fourth grade (coded as 4) to an advanced degree (coded as 18) completed (M = 12.10, SD = 2.36) (Drake, 2003; Kim & Clark, 2013; Lochner & Moretti, 2004). Employment activities were measured during the offender's current incarceration. This is consistent with Visher, Debus, & Yahner (2008), which indicates' that offenders who are employed during their current incarceration are more likely to obtain employment after they are released from their term of incarceration. Therefore, for males, offenders who were employed while incarcerated in the institution was coded (dichotomous 1 = yes) (M = 0.62, SD = 0.49) and similarly for females (M = 0.59, SD = 0.49) (Drake, 2003; Gendreau et al., 1996; Visher, Debus, & Yahner, 2008).

For criminal history variables among males, age of first arrest is continuously coded (M = 15.96, SD = 5.0) and for females (M = 19.14, SD = 6.07), (DeLisi, 2006; Piquero, Brame, & Lynam, 2004). In addition, for males the perpetration of violence up

to six months prior to the current incarceration was coded (dichotomous 1 = yes) (M = .68, SD = .47) and for females (M = .66, SD = .47). Lastly, for males, the number of institutional misconduct incidents (M = 1.04, SD = 0.91) and similarly for females (M = 0.86, SD = 0.90) were included in the models (Cauffman, 2008; Trulson, DeLisi, & Marquart, 2011). For both the male and female models, the number of institutional misconduct incidents is categorically coded with zero equaling no occurrence of an institutional misconduct infraction to two equaling more than one occurrence of an institutional misconduct infraction.

In addition, and similar to prior research which has demonstrated that drug treatment reduces the chances of offender recidivism, drug and mental health treatment variables were included to control for prior history of drug and mental health treatment (Mackenzie, 1997). Therefore, ever participating in drug treatment prior to the current incarceration for both males (M = .41, SD = .54) and females (M = .56, SD = .50) coded (dichotomous 1 = yes) (Grella & Rodriguez, 2011; MacKenzie, 1997). And history of ever participating in mental health treatment for both males (M = .23, SD = .62) and females (M = .50, SD = .50) also coded (dichotomous 1 = yes).

Lastly, to capture the length of time served on the current incarceration, the total number of days incarcerated was included in the models for both males and females. For the male sample, total number of days incarcerated was continuously coded (M = 918.30, SD = 932.56). Similarly for the female sample, total number of days incarcerated was also continuously coded (M = 625.68, SD = 751.51) (Gottfredson, Gottfredson, & Garofalo, 1977; Meade, Steiner, Makarios, & Travis, 2012; Spohn & Holleran, 2002).

Signaling Variables

Signaling variables were broken down and categorized into two categories as a result of prior research (Visher et al., 2005; Wilson et al, 2000). These two categories include employment programming services received while incarcerated and employment programming services received after release from incarceration. First, for the signaling variables, both models include one measure, employment programming received during incarceration for males (M = 0.28, SD = 0.45), and for females (M = 0.38, SD = 0.49) coded (dichotomous 1 = yes). This measure is included in the models across all three time periods examined. This is consistent with Wilson et al., (2000) meta-analysis which examined employment and recidivism outcomes for offenders who received employment programming services during their term of incarceration.

Second, and also consistent with prior research (Visher et al., 2005) for each time period, an additional independent variable was included to capture any employment programming participation which occurred since being released from the institution. The models include male offenders who received employment programming three months post-release (M = .28, SD = .45) and female offenders (M = 0.30, SD = 0.46) coded (dichotomous 1 = yes). Male offenders who received employment programming nine months post-release (M = 0.18, SD = 0.38), and female offenders (M = 0.17, SD = 0.38) coded (dichotomous 1 = yes). Male offenders who received employment programming fifteen months post-release (M = 0.12, SD = 0.32), and female offenders (M = 0.17, SD = 0.38) coded dichotomous 1 = yes). This is consistent with Visher et al., (2005) meta-analysis which examined community-based employment programming services received after release from incarceration.

Table 1

Variables (males) and summary statistics

Variable(s)	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	984	0.74	0.44	0 - 1
Have Employment (9 mos.)	987	0.81	0.39	0 - 1
Have Employment (15 mos.)	922	0.77	0.42	0 - 1
Re-arrest (3 mos.)	1581	0.17	0.38	0 - 1
Re-arrest (9 mos.)	1581	0.42	0.49	0 - 1
Re-arrest (15 mos.)	1581	0.56	0.50	0 - 1
Independent variables				
Age	1697	29.20	7.29	18 - 73
White	1694	0.32	0.62	0 - 1
Black	1694	0.52	0.64	0 - 1
Hispanic	1694	0.03	0.43	0 - 1
Prior Intimate Relationship	1693	0.66	0.66	0 - 1
Education	1695	11.80	2.26	1 - 18
Employed-Incarceration	1697	0.62	0.49	0 - 1
Age of First Arrest	1685	15.96	5.00	6 - 67
Prior Perpetration of Violence	1697	0.68	0.47	0 - 1
Institutional Misconduct	1694	1.04	0.91	0 - 2
Prior Drug Treatment	1696	0.41	0.54	0 - 1
Prior Mental Health Treatment	1693	0.23	0.62	0 - 1
Number of Days Incarcerated	1697	918.30	932.56	44 - 9486
Employment Program (Inst.)	1696	0.28	0.45	0 - 1
Employment Program (3 mo.)	983	0.28	0.45	0 - 1
Employment Program (9 mo.)	984	0.18	0.38	0 - 1

Table 1 continued

Employment Program (15 mo.)	921	0.12	0.32	0 - 1

Note: SD = Standard deviation

Table 2

Variables (females) and summary statistics

Variable(s)	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	244	0.62	0.49	0 - 1
Have Employment (9 mos.)	244	0.73	0.44	0 - 1
Have Employment (15 mos.)	247	0.71	0.46	0 - 1
Re-arrest (3 mos.)	337	0.14	0.35	0 - 1
Re-arrest (9 mos.)	337	0.33	0.47	0 - 1
Re-arrest (15 mos.)	337	0.44	0.50	0 - 1
Independent variables				
Age	357	31.52	6.86	19 - 57
White	357	0.44	0.50	0 - 1
Hispanic	357	0.06	0.24	0 - 1
Prior Intimate Relationship	357	0.71	0.45	0 - 1
Education	357	12.10	2.36	4 - 18
Employed-Incarceration	357	0.59	0.49	0 - 1
Age of First Arrest	347	19.14	6.07	8 – 45
Prior Perpetration of Violence	357	0.66	0.47	0 - 1
Institutional Misconduct	356	0.86	0.90	0 - 2
Prior Drug Treatment	357	0.56	0.50	0 - 1
Prior Mental Health Treatment	357	0.50	0.50	0 - 1
Number of Days Incarcerated	357	625.68	751.52	3 - 5749

Table 2 continued

Employment Program (Inst.)	357	0.38	0.49	0 - 1
Employment Program (3 mo.)	244	0.30	0.46	0 - 1
Employment Program (9 mo.)	244	0.17	0.38	0 - 1
Employment Program (15 mo.)	247	0.17	0.38	0 - 1

Note: SD = Standard deviation. See the Appendix for a breakdown of tables by offenders who received SVORI services and those who did not, by gender.

In addition, summary statistics are provided in Tables 30 – 33, and are broken down by offenders who received SVORI services and offenders who did not by gender in the Appendix section of this dissertation. This breakdown provides more detail regarding offenders who received SVORI services compared to those who did not.

Methods

This dissertation will use logistic regression techniques to analyze the data. These techniques are appropriate because the objective of the analysis is to predict the probability of a binary outcome (no = 0, yes = 1) in the dependent variables, employment outcomes and re-arrest at three, nine and fifteen months after release from incarceration using a set of independent variables that consist of both continuous and categorical variable types (Menard, 1995). As a result of the dependent variable having a binary outcome, the linear probability assumption that the dependent variable be continuous and have a normal distribution is violated. To correct for this, logistic regression uses Maximum Likelihood Estimation methods rather than Ordinary Least Squares which results in the requirement that other assumptions be met (Menard, 1995).

To meet such assumptions, logistic regression uses a non-linear sigmoid distribution to efficiently fit a line through the distribution of cases, minimizing the

variance. The sigmoid distribution takes on the form of an S-shaped curve to account for the discrete mutually exclusive binary outcome in the dependent variable (0 = no, 1 = yes). As a result, the effect of the dependent variable changes in the tails of the sigmoid distribution. The sigmoid distribution ensures that a value never falls outside 0 or 1 (Menard, 1995; Peters, 2011).

Several data screening techniques are used prior to conducting the analysis to ensure the data meet the assumptions of logistic regression. The following assumptions of logistic regression will be evaluated. First, the outcomes in the dependent variable must represent discrete units that are mutually exclusive. Meeting this assumption ensures the model is being correctly specified using logistic regression. Second, logistic regression analysis is appropriate when the data meet the rule of five, meaning that there are at least five cases per independent variable in the model in each category of the dependent variable. This will ensure that stable estimates are produced by the model (Menard, 1995, Peters 2011). Third, multicollinearity should not be present in the data. Correlations of .7 or greater would indicate that multicollinearity is present. Examination of the zero-order correlation matrix in addition to the variance inflation factor (VIF) values will indicate if multicollinearity is present in the data (Menard, 1995; O'Brien, 2007; Peters, 2011).

Logistic Regression Assumptions

Evaluation of the data to ensure the assumptions of logistic regression are met revealed the following. First, to ensure the outcomes in the dependent variables represent discrete and mutually exclusive events, the dependent variables include two possible outcomes. In total, there are six dependent variables which each have a discrete mutually

exclusive binary outcome (0 = no, 1 = yes). Tabulations of the data for both the male and female samples were examined using the STATA 12 statistical software package to ensure all outcomes are discrete mutually exclusive binary outcomes. This assumption of logistic regression is met for both the male and female samples.

Second, the rule of five ensures that there is enough power produced by the model for efficient and unbiased estimates. Table 3, presents the dependent variables and the number of cases in each category for both the male and female samples. As stated, the samples consist of 1,697 males and 357 females who are classified as being serious and violent offenders measured across three time periods. The number of predictors included in the model for males (up to fifteen total predictors) requires a minimum number of 75 cases in each category. Depicted in Table 3, the number of cases in each category of the dependent variable exceeds the rule of five in all cells for the male sample. When the female sample is examined (up to fourteen total predictors), there needs to be a minimum number of 70 cases in each category. As indicated in Table 3 for females, there are two instances where violations occur. Occurrence of re-arrest at three months after release has 48 cases in its category and failure to obtain employment at nine months after release has 65 cases in its category, both of which are below the required 70 cases in each category. This limitation is noted, however, the analysis will proceed and make note of this violation of the rule of five among these two dependent variables for the female sample.

Table 3

Rule of five - Dependent variable case frequency count

Dependent Variable	Value of the Dependent Variable with Case Frequency
Male	
Have Employment (3 mos.)	0 = 251, 1 = 733
Have Employment (9 mos.)	0 = 190, 1 = 797
Have Employment (15 mos.)	0 = 208, 1 = 714
Re-arrest (3 mos.)	0 = 1,310, 1 = 271
Re-arrest (9 mos.)	0 = 915, 1 = 666
Re-arrest (15 mos.)	0 = 704, 1 = 877
Female	
Have Employment (3 mos.)	0 = 93, 1 = 151
Have Employment (9 mos.)	0 = 65, 1 = 179
Have Employment (15 mos.)	0 = 72, 1 = 175
Re-arrest (3 mos.)	0 = 289, 1 = 48
Re-arrest (9 mos.)	0 = 225, 1 = 112
Re-arrest (15 mos.)	0 = 189, 1 = 148

Note: 0 = No, 1 = Yes

Third, multicollinearity should not be present in the data. Correlations of .7 or greater would indicate that multicollinearity is present (Menard, 1995; Peters, 2011). The zero-order correlation matrix for the male sample indicates a high correlation between Hispanic and Other (0.6999). As a result, the Other variable will be dropped from the set of independent variables among males and females to ensure there is no multicollinearity. For the female sample, there is also a high correlation between White and Black (-0.7286). As a result, the Black variable will be dropped from the set of independent

variables among females to ensure there is no multicollinearity. After these variables are dropped, the zero-order correlation matrix was re-examined and as a result, there are no other indications of correlations that are greater than the .7 threshold.

As a last step to verify multicollinearity is not present among the independent variables, the VIF is assessed after the variable Other is dropped for both males and females and the variable Black is dropped for females. In addition to the zero-order correlation matrix, the VIF is a common measure used to detect the presence of multicollinearity between the independent variables in the model (O'Brien, 2007). Values of 10 or greater are considered indications of a high degree of multicollinearity (Cohen, Cohen, West, & Aiken, 2003; Keith, 2006; Marquardt, 1970). Conservative VIF values of 6 or 7 are acceptable and would indicate that multicollinearity is not present (Cohen et al. 2003, Keith 2006). For males, the largest VIF values obtained are for White (1.75) and Hispanic (2.13). The mean VIF for all predictors in the model is (1.31). For females, the largest VIF values are for participation in an employment program nine months post release (1.64) and for participation in an employment program fifteen months post release (1.54). The mean VIF among the independent variables for females is (1.21). As noted, the VIF values are well below values that would indicate a presence of multicollinearity among the independent variables in the models. Therefore, the analysis of both the male and female samples will proceed by having met the assumption of logistic regression that there is no multicollinearity among the independent variables after the corrective steps were taken by dropping the Other variable for the male and female sample and the Black variable among the female sample only.

Propensity Score Methods

Propensity score models were utilized to create weights which could be applied to both the male and female samples in the dataset (Lattimore & Steffey, 2010). Creating and applying weights to the male and female samples allows for the ability to control for static characteristics to ensure offenders within each group of the male and female samples are as similar as possible, baring the experimental treatment of interest (receiving SVORI services compared to supervision services as usual). Offender characteristics which are time-sequenced to have been present prior to the initiating event of the incarceration for the instant offense were selected to be used in the propensity score models. The resulting propensity scores were used to create weights to achieve balance between the groups in both samples. As a result, the propensity score is the probability that an offender who has volunteered to participate in SVORI services will be assigned to the SVORI treatment group provided pre-specified variables which control for selection bias resulting from the quasi-experimental research design (Lattimore & Steffey, 2010). The resulting weight is the population average treatment effect weight which is an indicator of the average treatment effect if both treatment and control groups were treated (Lattimore & Steffey, 2010). The weights were calculated as follows:

$$\mathrm{W_i} = \frac{1}{\hat{p}i}$$

If not

$$\mathrm{W_i} = \frac{1}{1-\hat{p}i}$$

Where w_i indicates the weight for a given offender and $\hat{p}_i$ indicates the likelihood of that offender to be assigned to receive SVORI services. The purpose of the weight is to categorize offenders into groups where their $\hat{p}_i$ is similar. This indicates that the likelihood of an individual offender had an equal chance of being assigned to receive SVORI services, thus creating balance between the groups in the male and female samples.

To examine the differences between the groups within each sample, t-tests are conducted on the male and female offenders who received SVORI services and those that did not. T-tests highlight any significant between group differences within the respective male and female samples both before and after the weights are applied (DeLisi, Barnes, Beaver, & Gibson, 2009; Kim & Clark, 2013). In addition and consistent with Rosenbaum and Rubin (1985), the standardized bias statistics are examined to ensure balance between the groups within the male and female samples. Standardized bias statistics should all be lower than a value of 20 in absolute value. If values are below the value of 20 in absolute value, this indicates the procedures were successful after the weights are applied.

All regression models are estimated both with and without the weights. Doing this demonstrates the effects of the bias in the un-weighted sample. In addition, this will also directly speak to Bushway & Apel's (2012) approach to signaling theory and as they have asserted, highlights the importance of including self-selection bias in reference to an offender's ability to send a signal through their voluntary participation in employment programming.

CHAPTER 4

RESULTS

Propensity Score Results

The weights developed from the propensity scores were administered to the samples which included 51 percent (n = 863 male offenders) and 43 percent (n = 153 female offenders) who received SVORI services and comparison groups of 49 percent (n = 834 male offenders) and 57 percent (n = 204 female offenders) who received treatment services as usual. T-tests are conducted to compare the treatment groups to the comparison groups for both the male and female samples. Examining the t-tests ensures differences between the groups and within each respective sample are minimized after the weight is applied (Lattimore & Steffey, 2010). The standard .05 significance level (t = 1.96) was used to gauge any significant differences between the groups in the respective samples.

Table 4 shows the results of the t-tests among the covariates for both the male and female samples. As depicted in Table 4, prior to the propensity score weights being applied to the sample means, the samples are relatively similar for both males and females among those who received SVORI services and those who did not. Among the male sample there are group differences at the .01 significance level for age (t = -2.57) and for Whites (t = -2.86) among the treatment and control groups. This indicates that prior to the application of the propensity score weights males who received SVORI services were significantly more likely to be younger and significantly less likely to be White than offenders in the comparison group. For females, a substantive difference at the .05 significance level (t = -1.96) was observed for prior mental health treatment.

Therefore, prior to the propensity score weights being applied females who received SVORI services were significantly less likely to have received mental health treatment prior to their incarceration than offenders in the comparison group. As depicted in Table 4, all other variables among the male and female samples were non-significant indicating the groups (SVORI services vs. non-SVORI services) are similar in nature prior to the propensity score weights being applied.

Table 4

Two-sample t-test results after weighting: Propensity Score Model (PSM)

	Un-weighted Sample			Weighted Sample		
Variable	SVORI (N=863)	Non-SVORI (N=834)	t-value	SVORI (N=863)	Non-SVORI (N=834)	t-value
Male						
Age	26.13	27.06	-2.57**	26.13	26.62	-0.01
White	0.28	0.37	-2.86**	0.28	0.34	-1.44
Black	0.53	0.5	1.06	0.53	0.54	-1.35
Hispanic	0.01	0.04	-1.57	0.01	0.04	-1.83
Prior Intimate Rel.	0.65	0.67	-0.89	0.65	0.67	-0.65
Age of First Arrest	15.82	15.75	0.24	15.82	15.73	0.96
Prior Perp. Of Violence	0.69	0.67	0.80	0.69	0.68	-0.00
Prior Drug Treatment	0.40	0.41	-0.03	0.40	0.41	-0.43
Prior Mental Health Tx.	0.22	0.23	-0.33	0.22	0.22	0.29
	Un-weighted Sample			Weighted Sample		
Variable	SVORI (N=153)	Non-SVORI (N=204)	t-value	SVORI (N=153)	Non-SVORI (N=204)	t-value

Table 4 continued

Female						
Age	28.86	30.31	-1.90	28.86	29.49	-0.59
White	0.48	0.41	1.32	0.48	0.43	-0.34
Hispanic	0.08	0.05	1.14	0.08	0.05	1.27
Prior Intimate Rel.	0.71	0.72	-0.07	0.71	0.72	0.20
Age of First Arrest	18.11	18.54	-0.54	18.11	18.47	-0.66
Prior Perp. Of Violence	0.65	0.67	-0.26	0.65	0.66	0.03
Prior Drug Treatment	0.58	0.54	0.67	0.58	0.56	-0.06
Prior Mental Health Tx.	0.44	0.55	-1.96*	0.44	050	0.02

Note: P-value indicates a two-tailed test indicating a difference in means between SVORI participants and the matched comparison group. * = .05 significance level and ** = .01 significance level.

Table 5 depicts the standardized bias statistic outcomes both before and after the weights are applied to the respective samples. As indicated in Table 5, absolute values of the standardized bias statistic are below 20 among the male sample even before the weights are applied. This indicates similarity between the treatment and comparison groups among the male sample. Table 5, shows for the female sample that the absolute value for age (20.5) and for prior mental health treatment (-21.0) are above the critical threshold of 20. As indicated by Rosenbaum and Rubin (1985), absolute values greater than 20 indicate significant differences between groups.

Examination of Table 5 indicates that after the weights are applied, this further reduces the standardized bias statistics for the male sample and reduces all standardized bias statistics for the female samples down to acceptable levels below 20 in absolute value. As a result, the reduction in the standardized bias statistics indicate that the

procedure was successful and applying the propensity score weights reduces any significant differences between the two groups (Rosenbaum & Ruben, 1985).

Table 5

Standardized bias statistics for male and female samples

	Unmatched Samples Bias Statistics		Matched Samples Bias Statistics	
Gender	Male	Female	Male	Female
Variables				
Age	-12.5	-20.5*	-6.5	-8.9
White	-13.9	14.1	-9.1	9.0
Black	5.2	----	-0.8	----
Hispanic	-7.7	12.0	-7.2	10.0
Prior Intimate Rel.	-4.3	-0.7	-3.3	-1.3
Age of First Arrest	1.2	-5.8	1.6	-4.8
Prior Perp. Of Violence	3.9	-2.8	2.3	-0.5
Prior Drug Treatment	-0.2	7.2	-0.7	3.9
Prior Mental Health Tx.	-1.6	-21.0*	0.1	-10.5

Note: * = greater than 20 in absolute value of the standardized bias statistic (Rosenbaum & Rubin, 1985)

In summary, as depicted in Table 4 and Table 5, after the weights are applied to the groups within the male and female samples, balance is achieved between both the respective treatment (SVORI) and comparison (non-SVORI) groups. This balance is achieved only on the characteristics included in developing the propensity score weights. This controls a degree of selection bias that occurs as a result of the research design. In addition, more accurate measurements of the treatment effects are produced by reducing this error.

Logistic Regression Models

The logistic regression models are presented in the odds ratio format. Therefore, the coefficients presented in the tables indicate an estimated increase in the log odds of the dependent variable (employment or re-arrest at three, nine or fifteen months post release) per unit increase of a given independent variable included in each model. Presentation of the logistic regression tables will use the following format. First, employment models at three, nine, and fifteen months are presented for the male sample. This is followed by the presentation of employment models at three, nine, and fifteen months for the female sample. Second, the re-arrest models at three, nine, and fifteen months are presented for the male sample. Again, this is followed by the presentation of the re-arrest models at three, nine, and fifteen months for the female sample. Each batch of logistic regression models is prefaced using a heading indicating which gender (male or female) and which type of outcome (employment or re-arrest) is being examined.

Employment Models for Males

Logistic regression models were examined both before and after the weights are applied to the male and female samples. Examining the models prior to the application of the weights shows the differences between the balanced and unbalanced groups within each sample. Prior to the weighting procedures being applied, both samples were relatively similar.

Table 6 presents employment outcomes both with and without the weights applied for the male sample three months after release from incarceration. Table 6 also includes results for offenders who participated in employment programming during their

incarceration and offenders who participated in a community based employment program up to three months after they are released from incarceration among other covariates.

As indicated in Table 6, after the weights are applied, males who are younger (odds ratio = 0.97, z = -2.51) and Black (odds ratio = 0.53, z = -3.80) are significantly less likely to obtain employment three months after they are released from incarceration. In addition, male offenders who have higher levels of education (odds ratio = 1.13, z = 3.04) are significantly more likely to obtain employment. Examination of Table 6 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 6

Logistic regression for employment outcomes among males (n = 984) - Three months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	0.97	0.01	-2.51*	0.97	0.01	-2.61**
White	1.26	0.24	1.22	1.28	0.24	1.34
Black	0.53	0.09	-3.80**	0.52	0.09	-3.91**
Hispanic	1.78	0.55	1.87	1.71	0.52	1.75
Prior Relationship	1.12	0.15	0.87	1.09	0.14	0.67
Education	1.13	0.04	3.04**	1.14	0.04	3.36**
Emp. Incarceration	1.14	0.18	0.82	1.17	0.19	0.97
Age of First Arrest	1.01	0.02	0.65	1.01	0.02	0.62
Prior Perp. of Vio.	1.02	0.17	0.13	1.01	0.17	0.09
Inst. Misconduct	0.95	0.10	-0.45	0.96	0.09	-0.45
Prior Drug Tx.	0.94	0.16	-0.34	0.89	0.15	-0.72

Table 6 continued

Prior MH Tx.	0.93	0.13	-0.49	0.97	0.15	-0.20
Days Incarcerated	1.00	0.00	0.48	1.00	0.00	0.69
Emp. Program (Inst.)	1.22	0.17	1.40	1.20	0.16	1.34
Emp. Program (3 mo)	1.12	0.14	0.93	1.10	0.16	0.65
Model χ^2			59.73**			67.82**
Pseudo R^2			0.0594			0.0607

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 7 presents employment outcomes for the weighted and unweighted male sample at nine months post release for offenders who participated in employment programs during their time while incarcerated and any community based employment program up to three months after they are released. As illustrated in Table 7, after the weights are applied, males who are younger (odds ratio = 0.97, z = -2.11) and Black (odds ratio = 0.63, z = -2.62) are significantly less likely to obtain employment nine months after they are released from incarceration, controlling for other covariates. In addition, male offenders who are White (odds ratio = 1.52, z = 2.12), have higher levels of education (odds ratio = 1.13, z = 2.89), have spent more days incarcerated (odds ratio = 1.00, z = 1.98), and who participated in a community based employment program within three months of being released from incarceration (odds ratio = 1.09, z = 3.86) are significantly more likely to obtain employment, controlling for other covariates. Examination of Table 7 shows that both the weighted and unweighted models produced significant covariates. However, after the weights are applied significant results emerge for offenders who are white and for offenders who have been incarcerated for a longer period of time.

Table 7

Logistic regression for employment outcomes among males (n = 987) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	0.97	0.01	-2.11*	0.97	0.01	-2.18*
White	1.52	0.30	2.12*	1.49	0.31	1.92
Black	0.63	0.11	-2.62**	0.63	0.12	-2.48*
Hispanic	1.07	0.33	0.23	1.05	0.35	0.16
Prior Relationship	1.26	0.16	1.83	1.24	0.15	1.77
Education	1.13	0.05	2.89**	1.15	0.05	3.26**
Emp. Incarceration	1.25	0.22	1.25	1.24	0.22	1.21
Age of First Arrest	1.03	0.02	1.92	1.03	0.02	1.73
Prior Perp. of Vio.	1.34	0.24	1.60	1.28	0.23	1.33
Inst. Misconduct	0.96	0.09	-0.45	0.95	0.08	-0.55
Prior Drug Tx.	0.82	0.15	-1.08	0.75	0.14	-1.58
Prior MH Tx.	0.83	0.09	-1.70	0.85	0.12	-1.15
Days Incarcerated	1.00	0.00	1.98*	1.00	0.00	1.83
Emp. Program (Inst.)	1.50	0.32	1.90	1.48	0.30	1.94
Emp. Program (3 mo)	1.09	0.03	3.86**	1.09	0.02	3.99**
Model χ^2			80.03**			80.83**
Pseudo R^2			0.0843			0.0836

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 8 shows employment outcomes for the weighted and unweighted male sample at nine months post release for offenders who participated in employment programs during their incarceration and any community based employment program up

to nine months after they are released. As illustrated in Table 8, after the weights are applied, males who are Black (odds ratio = 0.61, z = -2.73) are significantly less likely to obtain employment nine months after they are released from incarceration, controlling for the other covariates. In addition, male offenders who are white (odds ratio = 1.54, z = 2.22), who have higher levels of education (odds ratio = 1.13, z = 2.79), who have been incarcerated for a greater number of days (odds ratio = 1.00, z = 2.20), and who participated in a community based employment program within nine months of being released from incarceration (odds ratio = 1.74, z = 3.15) are significantly more likely to obtain employment, controlling for other covariates. Examination of Table 8 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 8

Logistic regression for employment outcomes among males (n = 987) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	0.98	0.01	-1.74	0.98	0.01	-1.80
White	1.54	0.30	2.22*	1.51	0.31	2.02*
Black	0.61	0.11	-2.73**	0.62	0.11	-2.67**
Hispanic	1.09	0.33	0.28	1.07	0.35	0.22
Prior Relationship	1.24	0.18	1.51	1.22	0.17	1.48
Education	1.13	0.05	2.79**	1.14	0.05	3.21**
Emp. Incarceration	1.31	0.23	1.50	1.28	0.23	1.41
Age of First Arrest	1.03	0.02	1.81	1.03	0.12	1.61
Prior Perp. of Vio.	1.27	0.23	1.31	1.21	0.22	1.02

Table 8 continued

Inst. Misconduct	0.93	0.10	-0.64	0.93	0.09	-0.79
Prior Drug Tx.	0.83	0.16	-0.97	0.77	0.14	-1.48
Prior MH Tx.	0.83	0.10	-1.52	0.85	0.13	-1.09
Days Incarcerated	1.00	0.00	2.20*	1.00	0.00	2.06*
Emp. Program (Inst.)	1.45	0.31	1.76	1.42	0.29	1.74
Emp. Program (9 mo)	1.74	0.30	3.15**	1.71	0.33	2.78**
Model χ^2			68.58**			80.84**
Pseudo R^2			0.0841			0.0836

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 9 depicts employment outcomes for the weighted and unweighted male sample at fifteen months post release for offenders who participated in employment programs during their incarceration and any community based employment program up to three months after they were released. Male offenders who are Black (odds ratio = 0.54, z = -3.44) and offenders who have had a history of participating in drug treatment prior to the term of incarceration (odds ratio = 0.69, z = -2.09) are significantly less likely to obtain employment fifteen months after they are released from incarceration controlling for the other covariates. However, male offenders who have had an intimate relationship up to six months prior to the current incarceration (odds ratio = 1.41, z = 2.26), have higher levels of education (odds ratio = 1.15, z = 3.56), and who participated in a community based employment program within three months of being released from incarceration (odds ratio = 1.06, z = 2.62) are significantly more likely to obtain employment controlling for other covariates. Table 9 shows that both weighted and

unweighted models produced significant covariates. However, once the weights were applied offenders who were in a prior relationship emerged as a significant finding.

Table 9

Logistic regression for employment outcomes among males (n = 922) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	0.99	0.01	-0.54	0.99	0.01	-0.77
White	1.35	0.27	1.51	1.31	0.27	1.31
Black	0.54	0.10	-3.44**	0.55	0.10	-3.22**
Hispanic	1.26	0.40	0.72	1.28	0.45	0.70
Prior Relationship	1.41	0.22	2.26*	1.36	0.21	1.95
Education	1.15	0.05	3.56**	1.16	0.05	3.77**
Emp. Incarceration	1.20	0.21	1.06	1.13	0.20	0.72
Age of First Arrest	1.02	0.02	1.15	1.02	0.02	1.39
Prior Perp. of Vio.	0.98	0.18	-0.12	0.96	0.18	-0.23
Inst. Misconduct	0.98	0.08	-0.24	0.98	0.09	-0.20
Prior Drug Tx.	0.69	0.12	-2.09*	0.67	0.12	-2.31*
Prior MH Tx.	0.84	0.11	-1.41	0.84	0.13	-1.14
Days Incarcerated	1.00	0.00	0.94	1.00	0.00	1.17
Emp. Program (Inst.)	1.39	0.27	1.67	1.37	0.27	1.59
Emp. Program (3 mo)	1.06	0.02	2.62**	1.06	0.02	2.46*
Model χ^2			66.55**			70.05**
Pseudo R^2			0.0721			0.0712

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 10 shows employment outcomes for the weighted and unweighted male sample at fifteen months post release for offenders who participated in employment programs during their incarceration and any community based employment program up to nine months after they were released. Table 10 shows that male offenders who are Black (odds ratio = 0.56, z = -3.21) and offenders who have had a history of participating in drug treatment prior to the term of incarceration (odds ratio = 0.69, z = -2.04) are significantly less likely to obtain employment fifteen months after they are released from incarceration, controlling for the other covariates. Male offenders who have had an intimate relationship up to six months prior to the current incarceration (odds ratio = 1.41, z = 2.15), who have higher levels of education (odds ratio = 1.14, z = 3.40), and who participated in a community based employment program within nine months of being released from incarceration (odds ratio = 1.13, z = 5.17) are significantly more likely to obtain employment, controlling for other covariates. Table 10 shows that both weighted and unweighted models produced significant covariates. However, once the weights were applied offenders who were in a prior relationship emerged as a significant finding.

Table 10

Logistic regression for employment outcomes among males (n = 922) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	0.99	0.01	-0.64	0.99	0.01	-0.87
White	1.37	0.28	1.54	1.32	0.28	1.33
Black	0.56	0.10	-3.21**	0.57	0.11	-3.03**
Hispanic	1.18	0.39	0.51	1.21	0.43	0.54

Table 10 continued

Prior Relationship	1.41	0.23	2.15*	1.36	0.22	1.87
Education	1.14	0.05	3.40**	1.16	0.05	3.63**
Emp. Incarceration	1.27	0.22	1.33	1.20	0.21	1.03
Age of First Arrest	1.02	0.02	1.13	1.02	0.02	1.37
Prior Perp. of Vio.	0.95	0.18	-0.24	0.94	0.18	-0.35
Inst. Misconduct	1.00	0.08	0.06	1.01	0.09	0.08
Prior Drug Tx.	0.69	0.13	-2.04*	0.67	0.12	-2.27*
Prior MH Tx.	0.84	0.11	-1.32	0.85	0.13	-1.04
Days Incarcerated	1.00	0.00	0.89	1.00	0.00	1.08
Emp. Program (Inst.)	1.37	0.27	1.57	1.35	0.27	1.51
Emp. Program (9 mo)	1.13	0.03	5.17**	1.13	0.03	5.32**
Model χ^2			81.15**			91.55**
Pseudo R^2			0.0930			0.0930

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 11 shows employment outcomes for the weighted and unweighted male sample at fifteen months post release for offenders who participated in employment programs during their incarceration and any community based employment program up to fifteen months after they were released. Table 11 shows that male offenders who are Black (odds ratio = 0.52, z = -3.69) and offenders who have had a history of participating in drug treatment prior to the term of incarceration (odds ratio = 0.67, z = -2.23) are significantly less likely to obtain employment fifteen months after they are released from incarceration, controlling for the other covariates. Male offenders who have had an intimate relationship up to six months prior to the current incarceration (odds ratio = 1.43, z = 2.39), have higher levels of education (odds ratio = 1.15, z = 3.63), and who

participated in a community based employment program within fifteen months of being released from incarceration (odds ratio = 1.73, z = 1.97) are significantly more likely to obtain employment, controlling for other covariates. Examination of Table 11 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 11

Logistic regression for employment outcomes among males (n = 922) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	-0.27	0.99	0.01	-0.51
White	1.35	0.27	1.50	1.30	0.27	1.28
Black	0.52	0.09	-3.69**	0.52	0.10	-3.43**
Hispanic	1.32	0.41	0.90	1.35	0.47	0.85
Prior Relationship	1.43	0.21	2.39*	1.37	0.21	2.06*
Education	1.15	0.05	3.63**	1.17	0.05	3.84**
Emp. Incarceration	1.18	0.20	0.93	1.11	0.19	0.60
Age of First Arrest	1.02	0.02	1.10	1.02	0.02	1.32
Prior Perp. of Vio.	0.94	0.18	-0.32	0.93	0.17	-0.42
Inst. Misconduct	0.96	0.08	-0.52	0.96	0.09	-0.43
Prior Drug Tx.	0.67	0.12	-2.23*	0.64	0.11	-2.48*
Prior MH Tx.	0.85	0.11	-1.27	0.84	0.14	-1.06
Days Incarcerated	1.00	0.00	1.09	1.00	0.00	1.36
Emp. Program (Inst.)	1.42	0.28	1.76	1.39	0.27	1.67
Emp. Program(15mo)	1.73	0.48	1.97*	1.83	0.50	2.22*
Model χ^2			60.66**			71.42**

Table 11 continued

Pseudo R^2	0.0716	0.0725

Note: * p < .05, ** p < .01. MH = Mental Health.

Employment Models for Females

Similar to the male sample, prior to the weighting procedures being applied both groups in the female sample were relatively similar. Table 12 presents employment outcomes for the weighted and unweighted female sample at three months after release from incarceration. Table 12 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to three months after they were released from incarceration among other covariates.

Table 12 illustrates that female offenders who have a prior history of mental health treatment (odds ratio = 0.52, z = -1.99) are significantly less likely to obtain employment three months after they are released from incarceration, controlling for the other covariates. However, female offenders who have higher levels of education (odds ratio = 1.27, z = 3.79), and who participated in a community based employment program within three months of being released from incarceration (odds ratio = 2.07, z = 1.97) are significantly more likely to obtain employment, controlling for other covariates. Table 12 shows that both weighted and unweighted models produced significant covariates. However, once the weights are applied female offenders who participated in mental health treatment prior to their incarceration and those that participated in community based employment programs up to three months after their release emerge as significant covariates.

Table 12

Logistic regression for employment outcomes among females (n = 244) - Three months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.02	0.03	0.62	1.02	0.03	0.84
White	1.75	0.62	1.57	1.77	0.59	1.73
Hispanic	2.55	1.69	1.42	2.75	1.84	1.51
Prior Relationship	1.23	0.45	0.56	1.24	0.42	0.62
Education	1.27	0.08	3.79**	1.29	0.08	3.95**
Emp. Incarceration	1.21	0.40	0.57	1.42	0.43	1.14
Age of First Arrest	0.99	0.02	-0.24	0.99	0.02	-0.63
Prior Perp. of Vio.	1.09	0.36	0.27	1.01	0.32	0.05
Inst. Misconduct	1.01	0.14	0.05	1.03	0.14	0.20
Prior Drug Tx.	1.62	0.53	1.47	1.51	0.47	1.30
Prior MH Tx.	0.52	0.17	-1.99*	0.55	0.17	-1.93
Days Incarcerated	1.00	0.00	1.45	1.00	0.00	1.49
Emp. Program (Inst.)	1.40	0.47	1.01	1.48	0.46	1.24
Emp. Program (3 mo)	2.07	0.76	1.97*	1.90	0.65	1.89
Model χ^2			36.51**			41.58**
Pseudo R^2			0.1271			0.1282

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 13 depicts employment outcomes for the weighted and unweighted female sample nine months after release from incarceration for offenders who participated in an employment program during their incarceration and any community based employment

program up to three months after they are released. Table 13 indicates that female offenders who have a prior history of mental health treatment (odds ratio = 0.38, z = -2.30) are significantly less likely to obtain employment nine months after they are released from incarceration, controlling for the other covariates. Female offenders who have higher levels of education (odds ratio = 1.32, z = 3.72), have had a prior history of drug treatment (odds ratio = 2.83. z = 2.59), participated in an employment program in the institution (odds ratio = 2.88, z = 2.84), and who participated in a community based employment program within three months of being released from incarceration (odds ratio = 1.11, z = 2.03) are significantly more likely to obtain employment, controlling for other covariates. Table 13 shows that both weighted and unweighted models produced significant covariates which are consistent.

Table 13

Logistic regression for employment outcomes among females (n = 244) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.04	0.03	1.38	1.04	0.03	1.31
White	1.07	0.42	0.19	1.30	0.47	0.73
Hispanic	3.75	2.93	1.69	3.06	2.29	1.50
Prior Relationship	1.98	0.77	1.75	1.76	0.67	1.49
Education	1.32	0.10	3.72**	1.32	0.10	3.70**
Emp. Incarceration	1.52	0.56	1.12	1.44	0.50	1.06
Age of First Arrest	1.03	0.04	0.97	1.02	0.03	0.85
Prior Perp. of Vio.	1.23	0.51	0.51	0.89	0.32	-0.33
Inst. Misconduct	1.03	0.22	0.15	0.97	0.20	-0.15

Table 13 continued

Prior Drug Tx.	2.83	1.13	2.59**	2.44	0.89	2.45*
Prior MH Tx.	0.38	0.16	-2.30*	0.39	0.14	-2.59**
Days Incarcerated	1.00	0.00	1.10	1.00	0.00	0.86
Emp. Program (Inst.)	2.88	1.08	2.84**	2.10	0.74	2.11*
Emp. Program (3 mo)	1.11	0.05	2.03*	1.11	0.06	2.06*
Model χ^2			37.10**			48.45**
Pseudo R^2			0.1831			0.1713

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 14 depicts employment outcomes for the weighted and unweighted female sample nine months after release from incarceration for offenders who participated in an employment program during their incarceration and any community based employment program up to nine months after they are released. Table 14 indicates that female offenders who have a prior history of mental health treatment (odds ratio = 0.35, z = -2.48) are significantly less likely to obtain employment nine months after they are released from incarceration, controlling for the other covariates. Female offenders who have had an intimate relationship up to six months prior to the current incarceration (odds ratio = 2.24, z = 2.07), who have higher levels of education (odds ratio = 1.36, z = 4.10), who have had a prior history of drug treatment (odds ratio = 2.90. z = 2.64), and who participated in an employment program in the institution (odds ratio = 2.61, z = 2.58) are significantly more likely to obtain employment, controlling for other covariates. Table 14 shows that both weighted and unweighted models produced significant covariates. However, once the weights were applied, female offenders who have had an intimate relationship up to six months prior to the current incarceration and who participated in an

employment program in the institution emerge as significant findings. In addition, the measure for female offenders who participated in a community based employment program up to nine months after their release became non-significant once the weights were applied to the sample.

Table 14

Logistic regression for employment outcomes among females (n = 244) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.03	0.03	1.12	1.03	0.03	1.17
White	1.02	0.39	0.05	1.26	0.45	0.65
Hispanic	3.40	2.50	1.66	2.88	2.16	1.41
Prior Relationship	2.24	0.87	2.07*	2.05	0.76	1.94
Education	1.36	0.10	4.10**	1.35	0.10	3.95**
Emp. Incarceration	1.46	0.54	1.03	1.44	0.49	1.06
Age of First Arrest	1.04	0.04	1.01	1.03	0.03	0.89
Prior Perp. of Vio.	1.08	0.46	0.19	0.78	0.28	-0.69
Inst. Misconduct	1.06	0.23	0.27	1.00	0.21	-0.02
Prior Drug Tx.	2.90	1.17	2.64**	2.46	0.91	2.44*
Prior MH Tx.	0.35	0.15	-2.48*	0.36	0.13	-2.79**
Days Incarcerated	1.00	0.00	0.94	1.00	0.00	0.76
Emp. Program (Inst.)	2.61	0.97	2.58**	1.97	0.69	1.94
Emp. Program (9 mo)	2.75	1.46	1.91	3.17	1.63	2.24*
Model χ^2			39.54**			50.07**
Pseudo R^2			0.1856			0.1770

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 15 shows employment outcomes for the weighted and unweighted female sample fifteen months after release from incarceration for offenders who participated in an employment program during their incarceration and any community based employment program up to three months after they are released. Table 15 indicates that female offenders who have a prior history of mental health treatment (odds ratio = 0.40, z = -2.57) are significantly less likely to obtain employment fifteen months after they are released from incarceration, controlling for the other covariates. However, female offenders who have higher levels of education (odds ratio = 1.26, z = 3.18), who participated in an employment program in the institution (odds ratio = 2.96, z = 3.02), and who participate in a community based employment program up to three months after their release from incarceration (odds ratio = 1.11, z = 2.16) are significantly more likely to obtain employment, controlling for other covariates. Table 15 shows that both weighted and unweighted models produced significant covariates which are consistent.

Table 15

Logistic regression for employment outcomes among females (n = 247) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.02	0.03	0.85	1.02	0.03	0.67
White	1.77	0.69	1.47	1.78	0.61	1.68
Hispanic	2.48	1.54	1.46	1.99	1.45	0.94
Prior Relationship	1.32	0.49	0.74	1.33	0.49	0.79
Education	1.26	0.09	3.18**	1.27	0.09	3.49**
Emp. Incarceration	0.67	0.22	-1.23	0.74	0.25	-0.88
Age of First Arrest	1.02	0.03	0.72	1.01	0.03	0.65

Table 15 continued

Prior Perp. of Vio.	1.37	0.52	0.84	1.05	0.36	0.14
Inst. Misconduct	1.24	0.19	1.43	1.22	0.19	1.24
Prior Drug Tx.	0.90	0.31	-0.31	0.93	0.31	-0.20
Prior MH Tx.	0.40	0.14	-2.57**	0.39	0.13	-2.83**
Days Incarcerated	1.00	0.00	1.26	1.00	0.00	1.04
Emp. Program (Inst.)	2.96	1.06	3.02**	2.68	0.93	2.84**
Emp. Program (3 mo)	1.11	0.05	2.16*	1.12	0.05	2.44*
Model χ^2			34.85**			46.98**
Pseudo R^2			0.1571			0.1576

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 16 shows employment outcomes for the weighted and unweighted female sample fifteen months after release from incarceration for offenders who participated in an employment program during their incarceration and any community based employment program up to nine months after they are released. Table 16 indicates that female offenders who have a prior history of mental health treatment (odds ratio = 0.41, z = -2.62) are significantly less likely to obtain employment fifteen months after they are released from incarceration, controlling for the other covariates. However, female offenders who have higher levels of education (odds ratio = 1.24, z = 3.02) and who participate in an employment program in the institution (odds ratio = 3.12, z = 3.19) are significantly more likely to obtain employment, controlling for other covariates. Table 16 shows that both weighted and unweighted models produced significant covariates which are consistent.

Table 16

Logistic regression for employment outcomes among females (n = 247) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.02	0.03	0.77	1.02	0.03	0.67
White	1.59	0.59	1.25	1.63	0.55	1.45
Hispanic	2.12	1.21	1.32	1.78	1.28	0.80
Prior Relationship	1.72	0.63	1.48	1.70	0.60	1.51
Education	1.24	0.09	3.02**	1.26	0.09	3.31**
Emp. Incarceration	0.65	0.22	-1.30	0.75	0.25	-0.87
Age of First Arrest	1.03	0.03	1.04	1.03	0.03	0.99
Prior Perp. of Vio.	1.38	0.51	0.88	1.07	0.36	0.21
Inst. Misconduct	1.18	0.16	1.19	1.15	0.17	0.96
Prior Drug Tx.	0.96	0.32	-0.13	0.98	0.33	-0.06
Prior MH Tx.	0.41	0.14	-2.62**	0.40	0.13	-2.83**
Days Incarcerated	1.00	0.00	1.45	1.00	0.00	1.17
Emp. Program (Inst.)	3.12	1.11	3.19**	2.78	0.97	2.93**
Emp. Program (9 mo)	0.95	0.05	-0.93	0.97	0.05	-0.52
Model χ^2			32.65**			41.34**
Pseudo R^2			0.1435			0.1387

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 17 depicts employment outcomes for the weighted and unweighted female sample fifteen months after release from incarceration for offenders who participated in an employment program during their incarceration and any community based employment program up to fifteen months after they are released. Table 17 indicates that

female offenders who have a prior history of mental health treatment (odds ratio = 0.41, z = -2.59) are significantly less likely to obtain employment fifteen months after they are released from incarceration, controlling for the other covariates. However, female offenders who have higher levels of education (odds ratio = 1.24, z = 3.00) and who participated in an employment program in the institution (odds ratio = 2.91, z = 2.94) are significantly more likely to obtain employment, controlling for other covariates. Table 17 shows that both weighted and unweighted models produced significant covariates. The measure for female offenders who participated in a community based employment program up to fifteen months after their release became non-significant once the weights were applied to the sample.

Table 17

Logistic regression for employment outcomes among females (n = 247) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.03	0.03	0.88	1.02	0.03	0.83
White	1.73	0.65	1.46	1.83	0.63	1.75
Hispanic	2.41	1.41	1.51	2.04	1.50	0.97
Prior Relationship	1.62	0.59	1.34	1.66	0.58	1.44
Education	1.24	0.09	3.00**	1.25	0.09	3.24**
Emp. Incarceration	0.63	0.21	-1.35	0.71	0.24	-1.01
Age of First Arrest	1.02	0.03	0.77	1.02	0.03	0.72
Prior Perp. of Vio.	1.27	0.48	0.64	0.95	0.32	-0.14
Inst. Misconduct	1.23	0.19	1.32	1.20	0.20	1.13
Prior Drug Tx.	0.94	0.32	-0.18	0.96	0.32	-0.13

Table 17 continued

Prior MH Tx.	0.41	0.14	-2.59**	0.39	0.13	-2.82**
Days Incarcerated	1.00	0.00	1.16	1.00	0.00	0.87
Emp. Program (Inst.)	2.91	1.06	2.94**	2.60	0.91	2.73**
Emp. Program(15mo)	2.31	1.23	1.57	2.79	1.42	2.02*
Model χ^2			33.35**			45.70**
Pseudo R^2			0.1514			0.1533

Note: * p < .05, ** p < .01. MH = Mental Health.

Re-arrest Models for Males

Table 18 presents re-arrest outcomes both with and without the weights applied for the male sample three months after release from incarceration. Table 18 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to three months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As indicated in Table 18, after the weights are applied, males who have served more days incarcerated (odds ratio = 1.00, z = -2.45) and who participate in a community based employment program up to three months after their release from incarceration (odds ratio = 0.93, z = -4.48) are significantly less likely to be re-arrested three months after they are released from incarceration. Examination of Table 18 shows that both the weighted and unweighted models produced significant covariates. However when the weights are applied to the sample, the education covariate becomes non-significant.

Table 18

Logistic regression for re-arrest among males (n = 1581) - Three months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.01	0.01	0.69	1.01	0.01	0.75
White	0.71	0.18	-1.39	0.75	0.20	-1.12
Black	1.40	0.33	1.45	1.37	0.33	1.28
Hispanic	1.60	0.58	1.31	1.54	0.57	1.16
Prior Relationship	1.05	0.11	0.46	1.03	0.10	0.30
Education	0.94	0.03	-1.91	0.94	0.03	-2.11*
Emp. Incarceration	0.78	0.11	-1.72	0.77	0.11	-1.89
Age of First Arrest	0.99	0.01	-0.39	0.99	0.01	-0.71
Prior Perp. of Vio.	0.95	0.14	-0.35	0.95	0.14	-0.36
Inst. Misconduct	0.97	0.07	-0.36	0.98	0.07	-0.31
Prior Drug Tx.	1.13	0.14	0.98	1.11	0.15	0.81
Prior MH Tx.	1.18	0.12	1.64	1.15	0.15	1.09
Days Incarcerated	1.00	0.00	-2.45*	1.00	0.00	-2.92**
Emp. Program (Inst.)	0.89	0.12	-0.90	0.88	0.12	-0.98
Emp. Program (3 mo)	0.93	0.02	-4.48**	0.93	0.02	-4.66**
Model χ^2			69.17**			72.99**
Pseudo R^2			0.0496			0.0504

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 19 shows re-arrest outcomes both with and without the weights applied for the male sample nine months after release from incarceration. Table 19 also includes results for offenders who participated in employment programming during their

incarceration and offenders who participated in a community based employment program up to three months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As illustrated in Table 19, after the weights are applied, male offenders who have higher levels of education (odds ratio = 0.91, z = -3.48), served more days incarcerated (odds ratio = 1.00, z = -3.74) and who participate in a community based employment program up to three months after their release from incarceration (odds ratio = 0.93, z = -5.62) are significantly less likely to be re-arrested nine months after they are released from incarceration. However, male offenders who are Black (odds ratio = 1.72, z = 2.65) and who have a prior history of perpetrating violence (odds ratio = 1.27, z = 1.96) are significantly more likely to be re-arrested within nine months after release from incarceration. Examination of Table 19 shows that both the weighted and unweighted models produced significant covariates. However when the weights are applied to the sample, the prior perpetration of violence covariate becomes significant.

Table 19

Logistic regression for re-arrest among males (n = 1581) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	0.48	1.00	0.01	0.38
White	1.01	0.22	0.06	1.04	0.23	0.20
Black	1.72	0.35	2.65**	1.70	0.35	2.54*
Hispanic	1.33	0.44	0.88	1.36	0.45	0.93
Prior Relationship	1.03	0.09	0.33	1.00	0.08	0.01
Education	0.91	0.02	-3.48**	0.92	0.02	-3.55**

Emp. Incarceration	0.81	0.09	-1.84	0.84	0.09	-1.63
Age of First Arrest	0.98	0.01	-1.64	0.98	0.01	-1.79
Prior Perp. of Vio.	1.27	0.15	1.96*	1.25	0.15	1.87
Inst. Misconduct	1.03	0.06	0.53	1.04	0.06	0.73
Prior Drug Tx.	0.95	0.11	-0.46	0.97	0.10	-0.32
Prior MH Tx.	1.13	0.08	1.72	1.10	0.97	1.09
Days Incarcerated	1.00	0.00	-3.74**	1.00	0.00	-3.71**
Emp. Program (Inst.)	1.01	0.11	0.09	0.99	0.11	-0.06
Emp. Program (3 mo)	0.93	0.01	-5.62**	0.92	0.01	-6.06**
Model χ^2			101.35**			114.88**
Pseudo R^2			0.0542			0.0534

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 20 shows re-arrest outcomes both with and without the weights applied for the male sample nine months after release from incarceration. Table 20 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to nine months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As illustrated in Table 20, after the weights are applied, male offenders who have higher levels of education (odds ratio = 0.91, z = -3.36), were employed during their term of incarceration (odds ratio = 0.79, z = 2.12), who served more days incarcerated (odds ratio = 1.00, z = -3.84) and offenders who participate in a community based employment program up to nine months after their release from incarceration (odds ratio = 0.01, z = -7.00) are significantly less likely to be re-arrested nine months after they are released

from incarceration. However, male offenders who are Black (odds ratio = 1.68, z = 2.50) are significantly more likely to be re-arrested within nine months after release from incarceration. Examination of Table 20 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 20

Logistic regression for re-arrest among males (n = 1581) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	0.34	1.00	0.01	0.26
White	1.03	0.22	0.14	1.06	0.23	0.27
Black	1.68	0.35	2.50*	1.66	0.34	2.42*
Hispanic	1.34	0.45	0.86	1.35	0.45	0.91
Prior Relationship	1.03	0.09	0.34	1.00	0.08	-0.03
Education	0.91	0.02	-3.36**	0.92	0.02	-3.45**
Emp. Incarceration	0.79	0.09	-2.12*	0.80	0.09	-1.96*
Age of First Arrest	0.98	0.01	-1.65	0.98	0.01	-1.81
Prior Perp. of Vio.	1.26	0.15	1.92	1.25	0.15	1.84
Inst. Misconduct	1.01	0.06	0.20	1.02	0.06	0.38
Prior Drug Tx.	0.94	0.11	-0.49	0.96	0.10	-0.38
Prior MH Tx.	1.01	0.08	1.33	1.07	0.10	0.78
Days Incarcerated	1.00	0.00	-3.84**	1.00	0.00	-3.71**
Emp. Program (Inst.)	1.03	0.11	0.24	1.02	0.11	0.14
Emp. Program (9 mo)	0.91	0.01	-7.00**	0.91	0.01	-7.04**
Model χ^2			118.57**			128.04**
Pseudo R^2			0.0629			0.0595

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 21 shows re-arrest outcomes both with and without the weights applied for the male sample fifteen months after release from incarceration. Table 21 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to three months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As shown Table 21, after the weights are applied, male offenders who have higher levels of education (odds ratio = 0.92, z = -3.19), who are arrested at an older age (odds ratio = 0.97, z = -2.24), who serve more days incarcerated (odds ratio = 1.00, z = -4.82) and who participate in a community based employment program up to three months after their release from incarceration (odds ratio = 0.94, z = -5.02) are significantly less likely to be re-arrested fifteen months after they are released from incarceration. However, male offenders who are Black (odds ratio = 1.52, z = 3.84) and who have a prior history of perpetrating violence (odds ratio = 1.49, z = 3.34) are significantly more likely to be re-arrested within fifteen months after release from incarceration. Examination of Table 21 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 21

Logistic regression for re-arrest among males (n = 1581) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	-0.17	1.00	0.01	-0.33
White	0.84	0.10	-1.53	0.84	0.10	-1.49
Black	1.52	0.16	3.84**	1.49	0.16	3.74**

Table 21 continued

Hispanic	0.84	0.15	-0.97	0.85	0.16	-0.86
Prior Relationship	0.96	0.07	-0.53	0.96	0.08	-0.51
Education	0.92	0.02	-3.19**	0.92	0.02	-3.26**
Emp. Incarceration	0.87	0.10	-1.23	0.89	0.10	-1.09
Age of First Arrest	0.97	0.01	-2.24*	0.98	0.01	-2.27*
Prior Perp. of Vio.	1.49	0.18	3.34**	1.47	0.17	3.25**
Inst. Misconduct	1.03	0.06	0.44	1.04	0.06	0.62
Prior Drug Tx.	0.95	0.12	-0.39	0.98	0.10	-0.19
Prior MH Tx.	1.13	0.09	1.59	1.11	0.10	1.21
Days Incarcerated	1.00	0.00	-4.82**	1.00	0.00	-4.77**
Emp. Program (Inst.)	1.05	0.11	0.46	1.03	0.11	0.31
Emp. Program (3 mo)	0.94	0.01	-5.02**	0.93	0.01	-5.48**
Model χ^2			112.89**			127.62**
Pseudo R^2			0.0601			0.0587

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 22 shows re-arrest outcomes both with and without the weights applied for the male sample fifteen months after release from incarceration. Table 22 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to nine months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As shown Table 22, after the weights are applied, male offenders who have higher levels of education (odds ratio = 0.92, z = -3.03), are first arrested at an older age (odds ratio = 0.97, z = -2.28), served more days incarcerated (odds ratio = 1.00, z = -4.94) and

who participate in a community based employment program up to nine months after their release from incarceration (odds ratio = 0.91, z = -7.24) are significantly less likely to be re-arrested fifteen months after they are released from incarceration. However, male offenders who are Black (odds ratio = 1.50, z = 3.73) and who have a prior history of perpetrating violence (odds ratio = 1.49, z = 3.31) are significantly more likely to be re-arrested within fifteen months after release from incarceration. Examination of Table 22 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 22

Logistic regression for re-arrest among males (n = 1581) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	-0.29	1.00	0.01	-0.44
White	0.86	0.10	-1.31	0.86	0.10	-1.26
Black	1.50	0.16	3.73**	1.48	0.16	3.63**
Hispanic	0.85	0.16	-0.84	0.87	0.16	-0.78
Prior Relationship	0.97	0.07	-0.47	0.96	0.08	-0.51
Education	0.92	0.02	-3.03**	0.92	0.02	-3.14**
Emp. Incarceration	0.84	0.10	-1.53	0.85	0.09	-1.45
Age of First Arrest	0.97	0.1	-2.28*	0.97	0.01	-2.28*
Prior Perp. of Vio.	1.49	0.18	3.31**	1.47	0.17	3.23**
Inst. Misconduct	1.00	0.06	0.08	1.01	0.06	0.23
Prior Drug Tx.	0.95	0.12	-0.37	0.98	0.10	-0.20
Prior MH Tx.	1.10	0.08	1.32	1.08	0.09	0.95
Days Incarcerated	1.00	0.00	-4.94**	1.00	0.00	-4.73**

Table 22 continued

Emp. Program (Inst.)	1.07	0.11	0.68	1.06	0.11	0.59
Emp. Program (9 mo)	0.91	0.12	-7.24**	0.91	0.01	-7.38**
Model χ^2			136.21**			153.14**
Pseudo R^2			0.0736			0.0705

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 23 presents re-arrest outcomes both with and without the weights applied for the male sample fifteen months after release from incarceration. Table 23 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to fifteen months after they are released from incarceration among other covariates to predict re-arrest outcomes.

As shown in Table 23, after the weights are applied, male offenders who have higher levels of education (odds ratio = 0.92, z = -3.13), are first arrested at an older age (odds ratio = 0.97, z = -2.15), served more days incarcerated (odds ratio = 1.00, z = -4.92) and who participate in a community based employment program up to three months after their release from incarceration (odds ratio = 0.90, z = -8.12) are significantly less likely to be re-arrested fifteen months after they are released from incarceration. However, male offenders who are Black (odds ratio = 1.54, z = 3.98) and who have a prior history of perpetrating violence (odds ratio = 1.48, z = 3.23) are significantly more likely to be re-arrested within fifteen months after release from incarceration. Examination of Table 23 shows that both the weighted and unweighted models produced significant covariates which are consistent.

Table 23

Logistic regression for re-arrest among males (n = 1581) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.00	0.01	-0.09	1.00	0.01	-0.25
White	0.90	0.10	-0.94	0.90	0.11	-0.86
Black	1.54	0.17	3.98**	1.52	0.17	3.82**
Hispanic	0.80	0.15	-1.20	0.81	0.15	-1.13
Prior Relationship	0.97	0.07	-0.45	0.96	0.08	-0.48
Education	0.92	0.02	-3.13**	0.92	0.02	-3.19**
Table 23 continued						
Emp. Incarceration	0.87	0.10	-1.22	0.88	0.10	-1.15
Age of First Arrest	0.97	0.01	-2.15*	0.98	0.01	-2.12*
Prior Perp. of Vio.	1.48	0.18	3.23**	1.46	0.17	3.16**
Inst. Misconduct	1.03	0.06	0.59	1.04	0.06	0.64
Prior Drug Tx.	0.95	0.12	-0.43	0.97	0.10	-0.25
Prior MH Tx.	1.13	0.09	1.57	1.11	0.10	1.21
Days Incarcerated	1.00	0.00	-4.92**	1.00	0.00	-4.82**
Emp. Program (Inst.)	1.02	0.11	0.16	1.01	0.11	0.09
Emp. Program(15mo)	0.90	0.01	-8.12**	0.90	0.01	-8.27**
Model χ^2			148.31**			167.57**
Pseudo R^2			0.0797			0.0771

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Re-arrest Models for Females

Similar to the male sample, prior to the weighting procedures being applied both groups in the female sample were relatively similar. Table 24 presents re-arrest outcomes for the weighted and unweighted female sample three months after release from incarceration. Table 24 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to three months after they were released from incarceration among other covariates.

Table 24 illustrates that female offenders who are first arrested at an older age (odds ratio = 0.91, z = -4.28) and female offenders who participate in a community based employment program up to three months after they are released from incarceration (odds ratio = 0.87, z = -3.30) are significantly less likely to be re-arrested three months after they are released from incarceration, controlling for the other covariates. However, female offenders who are older (odds ratio = 1.07, z = 2.54) are significantly more likely to be re-arrested during the three months following their release from incarceration, controlling for other covariates. Table 24 shows that both weighted and unweighted models produced significant covariates. However, once the weights are applied the covariate age emerges as a significant covariate.

Table 24

Logistic regression for re-arrest among females (n = 337) - Three months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.07	0.03	2.54*	1.05	0.03	1.82

Table 24 continued

White	0.49	0.20	-1.76	0.61	0.22	-1.36
Hispanic	0.69	0.63	-0.40	0.71	0.61	-0.40
Prior Relationship	1.38	0.62	0.72	1.16	0.45	0.39
Education	1.08	0.09	0.92	1.08	0.08	1.06
Emp. Incarceration	1.89	0.71	1.70	1.67	0.62	1.38
Age of First Arrest	0.91	0.02	-4.28**	0.91	0.02	-3.99**
Prior Perp. of Vio.	1.12	0.48	0.28	1.19	0.46	0.45
Inst. Misconduct	1.14	0.28	0.55	1.13	0.24	0.56
Prior Drug Tx.	1.36	0.55	0.76	1.39	0.52	0.89
Prior MH Tx.	1.29	0.51	0.65	1.44	0.53	1.00
Days Incarcerated	1.00	0.00	0.06	1.00	0.00	-0.24

Table 24 continued

Emp. Program (Inst.)	1.20	0.48	0.47	1.43	0.51	1.01
Emp. Program (3 mo)	0.87	0.04	-3.30**	0.86	0.04	-3.70**
Model χ^2			44.21**			45.15**
Pseudo R^2			0.1599			0.1637

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 25 presents re-arrest outcomes for the weighted and unweighted female sample nine months after release from incarceration. Table 25 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to three months after they were released from incarceration among other covariates.

Table 25 shows that female offenders who are first arrested at a older age (odds ratio = 0.93, z = -3.45) and female offenders who participate in a community based

employment program up to three months after they are released from incarceration (odds ratio = 0.86, z = -4.30) are significantly less likely to be re-arrested nine months after they are released from incarceration, controlling for the other covariates. However, female offenders who are older (odds ratio = 1.04, z = 2.13) and female offenders who have a history of participating in drug treatment prior to their term of incarceration (odds ratio = 1.87, z = 2.09) are significantly more likely to be re-arrested during the three months following their release from incarceration, controlling for other covariates. Table 25 shows that both weighted and unweighted models produced significant covariates. However, once the weights are applied the covariate age emerges as a significant covariate.

Table 25

Logistic regression for re-arrest among females (n = 337) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.04	0.02	2.13*	1.04	0.02	1.75
White	0.67	0.19	-1.42	0.74	0.20	-1.12
Hispanic	1.20	0.82	0.27	0.98	0.56	-0.03
Prior Relationship	1.00	0.31	-0.00	0.82	0.23	-0.70
Education	0.96	0.06	-0.68	0.96	0.05	-0.76
Emp. Incarceration	1.29	0.36	0.91	1.20	0.32	0.67
Age of First Arrest	0.93	0.02	-3.45**	0.94	0.02	-3.33**
Prior Perp. of Vio.	0.91	0.27	-0.30	1.00	0.28	-0.00
Inst. Misconduct	1.16	0.17	0.97	1.14	0.16	0.91
Prior Drug Tx.	1.87	0.56	2.09*	1.80	0.50	2.11*
Prior MH Tx.	0.96	0.27	-0.15	0.98	0.26	-0.08

Table 25 continued

Days Incarcerated	1.00	0.00	-0.56	1.00	0.00	-0.76
Emp. Program (Inst.)	0.98	0.27	-0.08	0.97	0.25	-0.12
Emp. Program (3 mo)	0.86	0.29	-4.30**	0.87	0.03	-4.41**
Model χ^2			44.41**			53.52**
Pseudo R^2			0.1283			0.1249

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 26 presents re-arrest outcomes for the weighted and unweighted female sample at nine months after release from incarceration. Table 26 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to nine months after they were released from incarceration among other covariates.

Table 26 illustrates that female offenders who are first arrested at an older age (odds ratio = 0.93, z = -3.16) are significantly less likely to be re-arrested nine months after they are released from incarceration, controlling for the other covariates. However, female offenders who are older (odds ratio = 1.04, z = 2.14) are significantly more likely to be re-arrested during the nine months following their release from incarceration, controlling for other covariates. Table 26 shows that both weighted and unweighted models produced significant covariates. However, once the weights are applied the covariate age emerges as a significant covariate.

Table 26

Logistic regression for re-arrest among females (n = 337) - Nine months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.04	0.02	2.14*	1.03	0.02	1.72
White	0.73	0.20	-1.13	0.79	0.21	-0.87
Hispanic	1.24	0.78	0.35	1.02	0.56	0.04
Prior Relationship	0.84	0.24	-0.62	0.69	0.19	-1.36
Education	0.96	0.06	-0.62	0.96	0.05	-0.72
Emp. Incarceration	1.19	0.32	0.66	1.12	0.29	0.42
Age of First Arrest	0.93	0.02	-3.16**	0.94	0.02	-3.34**
Prior Perp. of Vio.	0.90	0.25	-0.36	0.98	0.26	-0.08
Inst. Misconduct	1.17	0.16	1.16	1.18	0.16	1.22
Table 26 continued						
Prior Drug Tx.	1.74	0.51	1.89	1.66	0.45	1.89
Prior MH Tx.	0.99	0.27	-0.03	1.02	0.27	0.08
Days Incarcerated	1.00	0.00	-0.68	1.00	0.00	-0.97
Emp. Program (Inst.)	1.02	0.28	0.06	0.98	0.25	-0.09
Emp. Program (9 mo)	0.94	0.03	-1.88	0.95	0.03	-1.65
Model χ^2			32.02**			36.40**
Pseudo R^2			0.0892			0.0849

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 27 shows re-arrest outcomes for the weighted and unweighted female sample at fifteen months after release from incarceration. Table 27 also includes results for offenders who participated in employment programming during their incarceration

and offenders who participated in a community based employment program up to three months after they were released from incarceration among other covariates.

Table 27 illustrates that female offenders who are first arrested at an older age (odds ratio = 0.96, z = -2.25) and female offenders who participate in a community based employment program up to three months after they are released from incarceration (odds ratio = 0.88, z = -4.10) are significantly less likely to be re-arrested fifteen months after they are released from incarceration, controlling for the other covariates. Table 27 shows that both weighted and unweighted models produced significant covariates which are consistent.

Table 27

Logistic regression for re-arrest among females (n = 337) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.03	0.02	1.64	1.03	0.02	1.40
White	0.75	0.20	-1.11	0.75	0.19	-1.13
Hispanic	1.38	0.81	0.54	1.14	0.58	0.25
Prior Relationship	0.96	0.28	-0.16	0.80	0.21	-0.85
Education	0.92	0.05	-1.52	0.93	0.05	-1.49
Emp. Incarceration	1.32	0.35	1.06	1.20	0.30	0.73
Age of First Arrest	0.96	0.02	-2.25*	0.97	0.02	-1.98*
Prior Perp. of Vio.	1.11	0.30	0.38	1.20	0.31	0.72
Inst. Misconduct	1.18	0.16	1.23	1.16	0.15	1.13
Prior Drug Tx.	1.57	0.43	1.67	1.49	0.38	1.56
Prior MH Tx.	0.89	0.23	-0.45	0.92	0.23	-0.34
Days Incarcerated	1.00	0.00	-1.10	1.00	0.00	-1.33

Table 27 continued

Emp. Program (Inst.)	1.18	0.30	0.65	1.20	0.29	0.75
Emp. Program (3 mo)	0.88	0.03	-4.10**	0.88	0.03	-4.02**
Model χ^2			35.07**			41.79**
Pseudo R^2			0.0951			0.0904

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 28 shows re-arrest outcomes for the weighted and unweighted female sample at fifteen months after release from incarceration. Table 28 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to nine months after they were released from incarceration among other covariates.

Table 28 illustrates that female offenders who are first arrested at an older age (odds ratio = 0.97, z = -1.99) and female offenders who participate in a community based employment program up to nine months after they are released from incarceration (odds ratio = 0.91, z = -2.94) are significantly less likely to be re-arrested fifteen months after they are released from incarceration, controlling for the other covariates. Table 28 shows that both weighted and unweighted models produced significant covariates. When the weights are applied, the covariate age of first arrest becomes significant.

Table 28

Logistic regression for re-arrest among females (n = 337) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.03	0.02	1.71	1.03	0.02	1.44
White	0.81	0.21	-0.81	0.81	0.20	-0.86

Table 28 continued

Hispanic	1.46	0.86	0.64	1.21	0.61	0.37
Prior Relationship	0.86	0.24	-0.53	0.72	0.19	-1.28
Education	0.92	0.05	-1.48	0.93	0.05	-1.49
Emp. Incarceration	1.24	0.32	0.85	1.14	0.28	0.53
Age of First Arrest	0.97	0.02	-1.99*	0.97	0.01	-1.86
Prior Perp. of Vio.	1.08	0.28	0.29	1.18	0.30	0.66
Inst. Misconduct	1.20	0.15	1.43	1.19	0.15	1.43
Prior Drug Tx.	1.48	0.39	1.48	1.39	0.35	1.30
Prior MH Tx.	0.91	0.23	-0.36	0.95	0.23	-0.21
Days Incarcerated	1.00	0.00	-1.15	1.00	0.00	-1.46
Emp. Program (Inst.)	1.23	0.31	0.82	1.23	0.30	0.86
Emp. Program (9 mo)	0.91	0.03	-2.94**	0.92	0.03	-2.79**
Model χ^2			28.77*			33.05**
Pseudo R^2			0.0761			0.0715

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 29 shows re-arrest outcomes for the weighted and unweighted female sample at fifteen months after release from incarceration. Table 29 also includes results for offenders who participated in employment programming during their incarceration and offenders who participated in a community based employment program up to fifteen months after they were released from incarceration among other covariates.

Table 29 illustrates that female offenders who are first arrested at an older age (odds ratio = 0.96, z = -2.21) and female offenders who participate in a community based employment program up to fifteen months after they are released from incarceration (odds ratio = 0.90, z = -3.20) are significantly less likely to be re-arrested fifteen months

after they are released from incarceration, controlling for the other covariates. Table 29 shows that both weighted and unweighted models produced significant covariates which are consistent.

Table 29

Logistic regression for re-arrest among females (n = 337) - Fifteen months post release

	Weighted			Un-Weighted		
Variable	Odds Ratio	SE	z	Odds Ratio	SE	z
Age	1.03	0.02	1.64	1.03	0.02	1.48
White	0.77	0.20	-1.00	0.78	0.19	-1.01
Hispanic	1.28	0.73	0.44	1.12	0.56	0.22
Prior Relationship	0.82	0.22	-0.73	0.71	0.19	-1.30
Education	0.93	0.05	-1.42	0.93	0.05	-1.41
Emp. Incarceration	1.29	0.33	1.00	1.16	0.28	0.61
Age of First Arrest	0.96	0.02	-2.21*	0.96	0.02	-2.04*
Prior Perp. of Vio.	1.04	0.27	0.14	1.13	0.29	0.50
Inst. Misconduct	1.17	0.16	1.15	1.16	0.15	1.15
Prior Drug Tx.	1.51	0.41	1.54	1.44	0.36	1.46
Prior MH Tx.	0.89	0.23	-0.45	0.93	0.23	-0.27
Days Incarcerated	1.00	0.00	-1.04	1.00	0.00	-1.33
Emp. Program (Inst.)	1.18	0.30	0.66	1.18	0.28	0.69
Emp. Program(15mo)	0.90	0.03	-3.20**	0.91	0.03	-3.01**
Model χ^2			30.25**			34.35**
Pseudo R^2			0.0802			0.0743

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

As a result of the quantity of results produced by the logistic regression models, Figure 2 is presented. Figure 2, provides a visual depiction of the significant findings in the analysis of the data among each batch of logistic regression models. As indicated in Figure 2, common variables such as education and participation in community based employment programs consistently produce significant findings across both the employment and re-arrest models among both genders. Figure 2, attempts to simplify the quantity of findings among the different batches of logistic regression models while also accounting for results produced from both the weighted and unweighted models. Following Figure 2, the discussion section highlights these findings and discusses the various impacts.

Figure 2

Summary of significant findings in the logistic regression models

Employment Models for Males

3 month		9 month		9 month		15 month		15 month		15 month	
Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
(Age)	(Age)	(Age)	(Age)	----	----	----	----	----	----	----	----
----	----	White	----	White	White	----	----	----	----	----	----
(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)	(Black)
Education	Education	Education	Education	Education	Education	Education	Education	Education	Education	Education	Education
----	----	Days Inc	----	Days Inc	Days Inc	----	----	----	----	----	----
----	----	----	----	----	----	Prior Rel	----	Prior Rel	----	Prior Rel	Prior Rel
----	----	----	----	----	----	(Prior DT)	(Prior DT)	(Prior DT)	(Prior DT)	(Prior DT)	(Prior DT)
----	----	3 Mo Emp	3 Mo Emp	9 Mo Emp	9 Mo Emp	3 Mo Emp	3 Mo Emp	9 Mo Emp	9 Mo Emp	15 Mo Emp	15 Mo Emp

Employment Models for Females

3 month		9 month		9 month		15 month		15 month		15 month	
Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
Education	Education	Education	Education	Education	Education	Education	Education	Education	Education	Education	Education
(Prior MH)	----	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)	(Prior MH)

----	----	Prior DT	Prior DT	Prior DT	Prior DT	----	----	----	----	----	----
----	----	----	----	Prior Rel.	----	----	----	----	----	----	----
----	----	Inst. Prog.	Inst. Prog.	Inst. Prog.	----	Inst. Prog.	Inst. Prog.	Inst. Prog.	Inst. Prog.	Inst. Prog.	Inst. Prog.
3 Mo Emp	----	3 Mo Emp	3 Mo Emp	----	9 Mo Emp	3 Mo Emp	3 Mo Emp	----	----	----	15 Mo Emp

Re-arrest Models for Males

3 month		9 month		9 month		15 month		15 month		15 month	
Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
----	----	Black	Black	Black	Black	Black	Black	Black	Black	Black	Black
----	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)	(Education)
----	----	Prior Vio.	----	----	----	Prior Vio.	Prior Vio.	Prior Vio.	Prior Vio.	Prior Vio.	Prior Vio.
----	----	----	----	----	----	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)
(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)	(Days Inc)
----	----	----	----	(Emp Inc)	(Emp Inc)	----	----	----	----	----	----
(3 Mo Emp)	(3 Mo Emp)	(3 Mo Emp)	(3 Mo Emp)	(9 Mo Emp)	(9 Mo Emp)	(3 Mo Emp)	(3 Mo Emp)	(9 Mo Emp)	(9 Mo Emp)	(15 Mo Emp)	(15 Mo Emp)

Re-arrest Models for Females

3 month		9 month		9 month		15 month		15 month		15 month	
Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted	Weighted	Unweighted
Age	----	Age	----	Age	----	----	----	----	----	----	----
(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	(Age Arrest)	----	(Age Arrest)	(Age Arrest)
----	----	Prior DT	Prior DT	----	----	----	----	----	----	----	----
(3 Mo Emp)	(3 Mo Emp)	(3 Mo Emp)	(3 Mo Emp)	----	----	(3 Mo Emp)	(3 Mo Emp)	(9 Mo Emp)	(9 Mo Emp)	(15 Mo Emp)	(15 Mo Emp)

Note: Significance levels of variables depicted in this table include both .05 and .01. Variables with parenthesis (variable) indicate negative effects on the dependent variable

CHAPTER 5

DISCUSSION

Format of Discussion

The discussion chapter is divided into the following format. The results of the employment models for the male sample at three, nine, and fifteen months are discussed followed by a discussion of the female employment models using the same timeframes. This structure is repeated thereafter for the results of the re-arrest models. Each hypothesis is discussed in relation to the outcomes derived for the respective models. Similar to the results section formatting, each batch of logistic regression models is prefaced using a heading indicating which gender (male or female) and which type of outcome (employment or re-arrest) being discussed.

Each batch of logistic regression models examine outcomes using six different logistic regression models which cover three different timeframes at three, nine, and fifteen months after release from incarceration. Each logistic regression model contains covariates which are analogous except for one, community based employment programming. The covariate for community based employment programming was prefaced by the timeframe of the dependant variable. For example, for logistic regression models which analyze employment outcomes fifteen months after release from incarceration (dependent variable), there are three separate logistic regression models run. Each model uses a different timeframe for the covariate, community based employment programming received at three, nine, and fifteen months after release from incarceration. As a result, this structure provides effective insight into community based employment

programming and the impact at either increasing employment rates or decreasing re-arrest rates by the dependent variable and timeframe specified.

Variable Significance and Hypothesis – Employment Models for Males

Examination of the models according to the first employment hypothesis which states, male offenders who participate in voluntary employment programming during their term of incarceration are more likely to obtain employment than male offenders who do not at three, nine, and fifteen months after their release from incarceration, is not supported by the data in this analysis. While prior research has shown positive employment outcomes for offenders who have participated in employment programs while incarcerated (Berk, 2008; Saylor & Gaes, 1992), the covariate participation in employment programming during the term of incarceration, did not produce any significant employment outcomes among males in this analysis. These findings are consistent with the findings of Wilson et al. (2000) which found that offenders who participate in employment programming during their term of incarceration did not have increased employment rates after their release.

Examination of the models according to the second employment hypothesis which states, male offenders who participate in voluntary community based employment programming are more likely to be employed at three, nine, and fifteen months after their release from incarceration than male offenders who did not participate in voluntary community based employment programming, was supported at the nine and fifteen month time periods as previous research has indicated (Finn, 1998; La Vigne et al., 2003). Specifically, offenders who participated in community based employment programming within the first three months of release and within the first nine months of

release from incarceration were significantly more likely to obtain employment at nine months after release. Similarly, these findings held for offenders fifteen months after they are released from their terms of incarceration. In addition, significant effects were observed for offenders who participated in community based employment programming within the first fifteen months of their release, at all time periods measured (three, nine and fifteen months).

From a signaling theory perspective, it appears that male offenders who volunteer to participate in employment programming while they are incarcerated are attempting to send a signal to potential employers and to society that they are motivated to obtain the skills needed for employment and potentially to move away from a lifestyle of crime. Signaling theory indicates that offenders can send these signals but unless society is ready and willing to recognize the legitimacy of a signal (offenders who volunteer to participate in employment programming while they are incarcerated) the employment outcomes for offenders will not significantly change (Spence, 1973). Based on the data and using a signaling theory framework, while these offenders are taking advantage of employment programming while they are incarcerated, once released the programming does not appear to be much of a help to offenders who are seeking employment.

However, for offenders who participate in community based employment programs after they are released from their term of incarceration, the data show that they are effectively signaling to employers that they are motivated to be productive employees. This demonstration of initiative and motivation on behalf of the offender coupled with a stable behavioral pattern after they are released from a term of incarceration where they effectively reintegrate back into society appears to have

tremendous power in impacting employment status. While significant positive employment outcomes are observed at nine and fifteen months after release among offenders who participate in community based employment programming during the timeframes examined, there were no significant effects observed for three month employment outcomes among male offenders who participate in community based employment programming within three months of release from a term of incarceration. The lack of any significant findings during this time period is likely due to the short timeframe the signal has to develop and the demonstration of stability in behavior needed to recognize the signal's legitimacy.

Other consistent findings throughout the logistic regression employment models examined for the male sample include that male offenders who had higher levels of education were significantly more likely to obtain employment at three, nine, and fifteen months after their release from incarceration. This robust finding maintained stability across all of the models examined. In addition, all six logistic regression employment models indicate that male offenders who are Black are significantly less likely to obtain employment at three, nine, and fifteen months after their release from incarceration. This robust finding is analogous to findings of prior research which has shown Black males with a criminal history are significantly less likely to obtain opportunities for employment following a term of incarceration (Pager, 2003). While this finding supports prior research which has confirmed racial biases in hiring Black males, signaling theory would indicate that Black males who participate in and complete an employment program should obtain employment at higher rates than other Black males who do not take advantage of such opportunities. Regardless of the classification criteria, signaling

theory indicates that the individual offender can control the process up to the point where employers interpret the signal as being a legitimate signal. According to these data, for Black males the stigma associated with being Black and having a criminal history does little to encourage employers from hiring these individuals and transcending the labels attached.

Lastly, age effects which indicate that younger offenders are significantly less likely to obtain employment are observed at three and nine months but do not persist after nine months. This finding is similar to Uggan and Staff (2001) who found that older adults are more likely to obtain and retain employment than younger adults. In addition, older adults were more likely to make substantive life changes as a result of their employment. As a result, younger higher risk offenders are more unstable than higher risk older offenders as indicated by their ability to obtain employment after their release from incarceration.

Other significant findings include, offenders who are incarcerated for more days are significantly more likely to obtain employment at nine months after their release from incarceration. However, the number of days incarcerated was not significant at three months or fifteen months after their release. Similarly, significant effects indicating White offenders are more likely to obtain employment are observed at nine months only (Pager, 2003). At fifteen months, male offenders who were in an intimate relationship prior to their incarceration were significantly more likely to obtain employment (Sampson et al., 2006). However, male offenders who had a prior history of drug treatment were significantly less likely to obtain employment fifteen months after their release. While many of these intermittent findings are supported by prior research, pause

is given provided that these findings only appear at specific timeframes and are not robust enough to maintain significance through the majority of the models examined, spanning different time periods.

In summary, male offenders were more likely to obtain employment following their release from a term of incarceration at three, nine, and fifteen months if they had higher levels of education and less likely if they were Black. In addition, male offenders were more likely to obtain employment following their release from a term of incarceration at nine and fifteen months if they participated in community based employment programs at three, nine, or fifteen months following their release. These robust findings remain consistent in both the weighted and un-weighted models which indicate significant stability in the findings across the models examined.

Variable Significance and Hypothesis – Employment Models for Females

Examination of the first hypothesis among the female sample that, female offenders who participate in voluntary employment programming during their term of incarceration are more likely to obtain employment than female offenders who do not at three, nine, and fifteen months after their release from incarceration, is supported by the data in this analysis at nine and fifteen months only. From a signaling theory perspective this indicates that female offenders who participate in voluntary employment programming have signaled to employers that they are motivated to become part of the workforce. This signal is observed by employers and an employer is significantly more likely to hire a female offender who has engaged in employment programming while they were incarcerated. While voluntary participation in employment programming during incarceration does not have significant impacts at nine and fifteen months, none were

observed at the three month timeframe. One explanation could be that employers want to see a pattern of stability in an offender's behaviors and their reentry process during this early timeframe before extending any employment opportunities.

Examination of the second hypothesis indicates female offenders who participate in voluntary community based employment programming are more likely to be employed at three, nine, and fifteen months after their release from incarceration than female offenders who did not participate in voluntary community based employment programming. These findings indicate that participation in community based employment programs have larger impacts in increasing employment rates when female offenders are enrolled up to three months after they are released from a term of incarceration. Female offenders who voluntarily participate in a community based employment program signal to employers that they are serious about their reentry process. As a result, female offenders who voluntarily participate in employment programming are more likely to be hired than offenders who do not. This indicates that offenders are able to endure significant costs to signal to employers that they have made significant changes in their cognitive and behavioral thought processes.

Similar to the male employment models, among the female employment models education produced significant and robust findings across all of the models examined. Female offenders who had a prior history of mental health treatment were significantly less likely to obtain employment following their release. This finding was robust and was found across all six logistic regression models examined. This finding demonstrates the instability in behavior among offenders who exhibit mental health problems. It is this lack of behavioral stability that leads to an unorganized lifestyle where employment is

not a central focus and presents barriers to progressing through the rigors of an employment program. Therefore, offenders are unable to effectively signal to employers through their completion of such programs. Thus, prior to obtaining and maintaining employment, mental health problems must be stabilized and effectively treated for an offender to properly function in a work environment (Durcan, 2012). Prior research has demonstrated that persons with a mental health disorder are more likely to return to custody than those without such a disorder (Louden & Skeem, 2012), which indicates instability and impediments to effectively sending a signal.

Other significant findings among the six models examined include that offenders who have a history of prior drug treatment are more likely to obtain employment nine months after release from a term of incarceration. Also, female offenders who reported being in an intimate relationship prior to their term of incarceration are more likely to obtain employment at nine months following release from a term of incarceration (Sampson et al., 2006). Both of these findings are significant at the nine month timeframe only so the robustness of such findings and their impacts in increasing female offenders' employment rates appears to be limited and should be interpreted with caution.

In summary, female offenders were more likely to obtain employment following their release from a term of incarceration at three, nine, and fifteen months if they had higher levels of education. They were significantly less likely to obtain employment if they had a prior history of mental health treatment. In addition, female offenders were more likely to obtain employment following their release from a term of incarceration at nine and fifteen months if they participated in an employment program during their incarceration. Findings from participation in community based employment

programming indicate that large effects are observed among female offenders if they participate in programs within the first three months of their release from their term of incarceration. While other covariates were significant, the intermittency of the significance of these covariates challenges the robustness of such findings.

Variable Significance and Hypothesis – Re-arrest Models for Males

The first re-arrest hypothesis which asserts that male offenders who participate in voluntary employment programming during their term of incarceration are less likely to be re-arrested than non-participating male offenders at three, nine, and fifteen months after their release from incarceration was not supported by the data in this analysis. Provided Wilson et al. (2000) meta-analysis findings which conclude there is insufficient evidence from the studies they examined to indicate institutional employment programs reduce recidivism, the findings from this analysis indicate that participation in such programming does not significantly reduce re-arrest rates among these offenders. As a result, the findings from this analysis do not support the assertion that offenders within the same risk classification who participate in employment programming while they are incarcerated are signaling that they have fundamentally changed their behaviors when measured through re-arrest (Bushway & Reuter, 2004).

Examination of the second re-arrest hypothesis which states male offenders who participate in voluntary community based employment programming are less likely to be re-arrested at three, nine, and fifteen months after their release from incarceration than male offenders who do not participate in voluntary community based employment programming is strongly supported in all of the six models examined, using both weighted and unweighted samples. This is consistent with prior research which has

examined the effect of community based employment programs supporting a reduction in recidivism (Aos et al., 2006). From a signaling perspective, male offenders within the same risk classification who continue to participate in community based employment programs after they are released from their term of incarceration are signaling that they are moving toward a conventional lifestyle and have accepted the costs with engaging in that lifestyle. This is indicated by them being significantly less likely of getting re-arrested at all timeframes examined. When voluntary participation in employment programming is examined as it is in this dissertation, signaling theory indicates that offenders within the same risk classification who voluntarily choose to participate in this programming and also voluntarily choose to endure the costs associated with the programming, effectively transform their behavioral patterns as measured through re-arrest for up to fifteen months after their release from incarceration. As a result, signaling theory is not only indicative of potential employees for employers to hire (good bets) but serves as indication of a secondary desistence process operationalized through voluntary participation in community employment programming.

Other robust findings indicate when offenders serve more days incarcerated, their likelihood of re-arrest is significantly reduced after their release. This finding occurs for all models examined across all timeframes. Similar to the employment models, other consistent findings include that offenders who have higher levels of education are significantly less likely to be re-arrested at nine and fifteen month timeframes and offenders who are Black are significantly more likely to be re-arrested within the same timeframes. At both nine and fifteen months following a term of incarceration, if an offender had a prior history of perpetrating violence, they are significantly more likely to

be rearrested among the models examined. During the fifteen month timeframe, offenders who were arrested at a younger age were significantly more likely to be rearrested.

In summary, consistent and durable findings across all of the models examined, both weighted and unweighted, indicate that offenders who participate in a community based employment program and offenders who serve longer sentences are significantly less likely to be re-arrested after they are released from incarceration at three, nine, and fifteen months. In addition, offenders who have higher levels of education are significantly less likely to be rearrested at nine and fifteen month timeframes. However, offenders who are Black and offenders who have a prior history of perpetrating violence are significantly more likely to be re-arrested at nine and fifteen month timeframes.

Variable Significance and Hypothesis – Re-arrest Models for Females

The first re-arrest hypothesis which asserts that female offenders who participate in voluntary employment programming during their term of incarceration are less likely to be re-arrested than female offenders who do not at three, nine, and fifteen months after their release from incarceration was not supported by the data in this analysis. As discussed, while prior research has inconclusively examined the effects of employment programming received while offenders are incarcerated (Wilson, 2000), the findings from this analysis indicate that participation in such programming does not significantly reduce re-arrest rates among female offenders who participate in such programming while incarcerated.

The second re-arrest hypothesis which states that female offenders who participate in voluntary community based employment programming are less likely to be

re-arrested at three, nine, and fifteen months after their release from incarceration than female offenders who do not participate in voluntary community based employment programming, is strongly supported in five of the six models examined using both weighted and unweighted samples. Female offenders who participate in a community based employment program take steps toward meaningful long-term change which results in a significant reduction in their re-arrest rates at three, nine, and fifteen months after release. This result is a reflection of the decisional independence offenders have after they are released from the institution. When offenders are released, their autonomy to make decisions is increased and as a result, their behaviors of enrolling in community based employment programs is an indication that they have taken meaningful steps to change high risk anti-social behaviors. In short, they have decided to endure the costs associated with engaging in the secondary desistence process, thereby sending a signal to prospective employers that they have changed their behaviors.

As with the other models discussed, other covariates produced significant effects. Age of first arrest produced robust findings across all six of the models examined. These findings indicate that female offenders who are first arrested at an older age are significantly less likely to be rearrested after they are released at the three, nine and fifteen month timeframes. For female offenders who had a prior history of drug treatment, they were more likely to be re-arrested nine months after their release. Similar to the other models which produced intermittent findings which were significant, findings for prior history of drug treatment among the female re-arrest models did not maintain significance across the models examined.

In summary, female offenders are less likely to be rearrested at three, nine, and fifteen months after their release from a term of incarceration if they participate in community based employment programs at three, nine, and fifteen months after they are released. In addition, female offenders are significantly less likely to be re-arrested during the same timeframes when they are first arrested at an older age.

CHAPTER 6

CONCLUSION

This dissertation examines data from the Serious and Violent Offender Reentry Initiative. The data were collected across 12 states in the United States and consisted of 1,697 males and 357 females. The aim of this dissertation is to conduct an exploratory investigation into signaling theory (Spence, 1973) as applied to employment programs by Bushway & Apel (2012). This dissertation uses propensity score weights to examine both weighted and unweighted models in the analysis of the data to determine if participation in institutionally based and community based employment programs increases employment rates and decreases re-arrest rates after offenders are released from a term of incarceration.

As discussed, prior to the propensity score weights being applied, there were few differences between the groups of male and female offenders who received SVORI services and those that did not. As a result, when both the weighted and unweighted employment and re-arrest models are examined very few differences emerge. In fact, among the twelve male and female employment models examined, there are only ten instances where either the weighted or unweighed model produced a significant finding where its partner model did not. Similarly for the twelve re-arrest models examined, there were only six instances where either the weighted or unweighed model produced a significant finding where its partner model did not. In all instances where either the weighted model or the unweighted model produced a significant finding where the partner model did not, such discrepancies were not consistent and did not routinely occur

across the models examined. This indicates there does not appear to be any systematic error in the data.

However, there is a distinct difference in the conceptualization between the weighted and unweighted logistic regression models which were included in the analysis and the Appendix section. First, the weighted models enable this dissertation to examine the effects of institutional and community based employment programs on employment and re-arrest outcomes during the timeframes indicated. This examination provides insight into employment programming effects after controlling individual offender differences by applying the propensity score weights. The findings from this analysis indicate that participation in institutional employment programs is ineffective at increasing employment rates or reducing re-arrest rates among males who are classified as serious and violent offenders. However among females within this classification such programs are effective at increasing employment rates at nine and fifteen months after release but are ineffective at reducing re-arrest rates. These results provide an opening for a discussion of the functionality of employment programming provided within correctional institution walls. While there are two distinct outcome measures (employment and re-arrest rates after release) examined here, these programs may show impacts among other outcome measures not examined such as institutional misconduct and other effects pertaining to the institutionalization of offenders. Ultimately, these programs may prove to be beneficial in this regard. Policy implications resulting from these findings should be tempered. However, such a discussion as to the value of these programs and further research examining other outcomes variables is needed.

Second, according to Bushway & Apel (2012), the value of the signal is observed through the natural sorting order of offenders within the same risk category who self-select to voluntarily participate in employment programs. This is self-selection bias is included in the unweighted models in this analysis. According to the signaling theory perspective, the use of the information conveyed in the examination of the unweighted models indicate the differences between offenders within the same risk category who voluntarily participate in employment programming compared to those that do not. In other words, attributes such as motivation are encapsulated in the segment of offenders who volunteer to participate in programming opportunities. It is these volunteers within a specified risk level who are able to signal as moving toward a process of secondary desistance and being more productive employees. As a result, employers are able to tap a rich segment of the offender population who has indicated they are motivated to be good employees and are moving away from a criminal lifestyle.

While the models were examined according to gender and each used the same dependent and independent variables, except where noted (excluding Black) for the female sample, the models produced different results. For instance, while both models had strong and consistent effects indicating that participation in community based employment programs significantly increased employment rates and decreased re-arrest rates other differences emerged between the two gender specific models. Once such difference is observed in the female models which indicate that female offenders who have a prior history of mental health treatment being significantly less likely to obtain employment after their release from a term of incarceration. This finding did not emerge as a significant finding among the male models. As a result, for a signal to be conveyed

effectively, overcoming unique barriers for each respective gender is a reality and warrants further examination.

As indicated, the results from this analysis were derived from data collected across twelve states in the United States on a sample of male and female offenders who were categorized as serious and violent offenders. Provided the diversity and geographic span from where the data was collected, the results of this analysis can be generalized across geographic areas. However, the results from this analysis cannot be generalized beyond the criteria which classified an offender as a serious and violent offender. Future research should examine effects using a more restrictive classification assessment which parcels out risk categories based on specific criteria. An example of such an assessment would be the Level of Service Case Management Inventory (LS-CMI).

According to Bushway and Apel (2012) in their application of signaling theory, they contend that offenders within the same risk level classification who complete a rigorous employment program send a pronounced signal that they are more likely to desist from a criminal lifestyle. While this analysis does not capture those offenders that "successfully complete" an institutional employment program, it does capture offenders within a specified risk classification who voluntarily participate in an institutional employment program and in addition, voluntarily participate in community based employment programs. The results derived here utilized the more liberal measure of voluntary employment program participation (Bushway & Reuter, 2004) as opposed to the more restrictive measure of employment program completion (Bushway & Apel, 2012).

As a result of examining institutional and community based employment programming, a wider pool of offenders are captured in the analysis. Since the wider pool of employment program participants are examined, the strength of the findings may be diluted because offenders who do not complete employment programming are included in the sample. In addition, it is unknown if employers recognize the legitimacy of the signal of program participation as being more or less legitimate than program completion. While the signaling process is occurring through the behaviors of voluntarily engaging in program participation, employers may interpret program participation as being just as, or more legitimate than that of program completion. This process is observed with vocational and apprenticeship types of employment programs. However, while many employers will hire offenders while they are participating in vocational and apprenticeship programming, their employment is conditioned on the premise that participants successfully complete the vocational or apprenticeship program.

The results of this dissertation can only be generalized to offenders who participated in employment programs. Unfortunately, the dataset did not have a measure which indicated if an offender successfully completed an employment program. Future research should attempt to capture the more restrictive measure of offenders who successfully complete employment programs both while they are incarcerated and after they are released to the community. It would be fruitful to flesh out the differences between employment programming participation and programming completion as it relates employment and re-arrest outcomes. In addition, future research should attempt to classify which type of employment programming is completed, for example, if it is a vocational program, job readiness program, apprenticeship programs, etc. Examining

data and using this level of detail in specificity will allow for the examination of signaling theory by drilling into the specifics of the employment programming. It provides concrete achievements celebrated through a ceremonial right-of-passage (graduation from such programs) which can be measured as a measurement point for a signal. Lastly, future research should examine race and signaling theory. Specifically, it would be interesting to group offenders by racial categories who voluntarily participate in employment programming compared to those who do not to determine if there are differences in employment and re-arrest outcomes.

In summary, the findings from this dissertation are significant. Male offenders who participated in an institutional employment program during their term of incarceration were no more likely to obtain employment or any less likely to be re-arrested after they were released from their term of incarceration than offenders who did not participate in such employment programs among the timeframes analyzed. However, male offenders who participated in community based employment programs were significantly more likely to obtain employment and significantly less likely to be re-arrested among the timeframes analyzed. Female offenders who participated in an institutional employment program and those who participated in community based employment programs were significantly more likely to obtain employment following their release for the timeframes examined. Participation in institutional employment programs did not produce any significant reduction in re-arrest rates. However, participation in community based employment programs did produce a significant reduction in re-arrest rates among the female sample examined.

NOTES

1. Referring to Maruna's (2012) use of the term "secondary desistance" which indicates a reform in identity. Maruna (2012) discusses "primary desistance" as the absence of offending behavior. This is also supported by (Lemert, 1951).

2. There are other benefits and incentives for employers who hire ex-offenders above and beyond identifying potential employees through a signaling approach. Other employer incentives include qualification for federal bonding programs offered through the Department of Labor, wage matching programs which utilize Second Chance Act Funding, and qualification for the Work Opportunity Tax Credit which is a tax credit offered to employers who hire ex-offenders. This tax credit ranges from $2,400 – $9,600, depending on the employee hired (http://www.doleta.gov/business/Incentives/opptax/, http://www.bop.gov/inmate_programs/itb_employing_ex_offenders.jsp, http://www.bop.gov/inmate_programs/itb_bonding.jsp).

3. The male and female samples are examined separately as a result of significant differences between each sample. First, both the male and female samples were screened for multicollinearity among the independent variables. There is a high correlation between White and Black (-0.7286) among the female sample but not the male sample. Black was dropped from the analysis in the female sample but not the male sample to adjust the high degree of multicollinearity. As a result, this created a significant difference between the two samples, justifying a need to examine males and females separately.

Second, combined models were examined in an effort to determine if there are other significant differences between the male and female samples to justify examining each separately. Interaction terms were created using gender and the predictors that produced robust findings across the models examined as depicted in Figure 2. As a result, interaction terms were created between the following variables for the employment models: gender and Black, gender and prior history of mental health treatment, and gender and participation in an institutional employment program. Of the interaction terms examined in the employment models, gender and prior history of mental health treatment produced significant effects at the .05 level. The results using the combined models show that female offenders who have a prior history of mental health treatment are significantly less likely to obtain employment nine and fifteen months after release from their term of incarceration than male offenders who have a history of prior mental health treatment. The Tables are included in the Appendix section under the "Combined Gender Employment Models" heading.

Third, the following interaction terms were created for the combined re-arrest models: gender and Black, gender and education, and gender and the number of days incarcerated. Only gender and education ($z = 1.92$, $p = .055$) and ($z = 1.76$, $p = .079$) was significant in the three month models at the .10 threshold. This finding indicates that there are marginal statistical differences between females and males when examining re-arrest. The Tables are include in the Appendix section under the "Combined Gender Re-arrest Models" heading.

4. Since Iowa and Ohio used a random assignment research design the sample sizes for these two sites were examined. As a result of the reduced sample size, these two sites were included with the other sites which did not use a random assignment research design at the risk of diluting potential statements regarding the power of causality:

Male:

Iowa		Ohio	
SVORI = 114	Non-SVORI = 55	SVORI = 47	Non-SVORI = 38

Total Males (Iowa and Ohio): SVORI = 169, Non-SVORI = 93.

Females:

Iowa		Ohio	
SVORI = 35	Non-SVORI = 3	SVORI = 15	Non-SVORI = 12

Total Females (Iowa and Ohio): SVORI = 50, Non-SVORI = 15.

APPENDIX

Table 30

Variables (males) summary statistics for offenders not receiving SVORI services

Variable(s)/Type	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	455	0.73	0.44	0 - 1
Have Employment (9 mos.)	444	0.81	0.39	0 - 1
Have Employment (15 mos.)	446	0.75	0.43	0 - 1
Re-arrest (3 mos.)	775	0.19	0.39	0 - 1
Re-arrest (9 mos.)	775	0.44	0.50	0 - 1
Re-arrest (15 mos.)	775	0.56	0.50	0 - 1
Independent variables				
Age	834	27.06	7.41	15 - 68
White	834	0.37	0.48	0 - 1
Black	834	0.50	0.50	0 - 1
Hispanic	834	0.04	0.20	0 - 1
Prior Intimate Relationship	834	0.67	0.57	0 - 1
Education	834	11.74	2.26	1 - 18
Employed-Incarceration	834	0.61	0.49	0 - 1
Age of First Arrest	834	15.75	5.70	6 - 67
Prior Perpetration of Violence	834	0.67	0.47	0 - 1
Institutional Misconduct	834	1.96	0.91	0 - 2
Prior Drug Treatment	834	0.41	0.49	0 - 1
Prior Mental Health Treatment	834	0.23	0.63	0 - 1
Number of Days Incarcerated	834	824.33	958.28	44 - 9486
Employment Program (Inst.)	833	0.19	0.39	0 - 1
Employment Program (3 mo.)	455	0.19	0.39	0 - 1

Table 30 continued

Employment Program (9 mo.)	444	0.14	0.34	0 - 1
Employment Program (15 mo.)	445	0.09	0.28	0 - 1

Note: SD = Standard deviation

Table 31

Variables (males) summary statistics for offenders receiving SVORI services

Variable(s)/Type	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	529	0.76	0.43	0 - 1
Have Employment (9 mos.)	543	0.80	0.40	0 - 1
Have Employment (15 mos.)	476	0.80	0.40	0 - 1
Re-arrest (3 mos.)	806	0.16	0.36	0 - 1
Re-arrest (9 mos.)	806	0.41	0.49	0 - 1
Re-arrest (15 mos.)	806	0.55	0.50	0 - 1
Independent variables				
Age	863	26.13	7.49	15 - 61
White	863	0.28	0.72	0 - 1
Black	863	0.53	0.75	0 - 1
Hispanic	863	0.01	0.57	0 - 1
Prior Intimate Relationship	863	0.65	0.74	0 - 1
Education	863	11.86	2.26	1 - 17
Employed-Incarceration	863	0.63	0.48	0 - 1
Age of First Arrest	863	15.82	5.02	6 - 48
Prior Perpetration of Violence	863	0.69	0.46	0 - 1
Institutional Misconduct	863	2.08	1.11	0 - 2
Prior Drug Treatment	863	0.40	0.59	0 - 1

Table 31 continued

Prior Mental Health Treatment	863	0.22	0.62	0 - 1
Number of Days Incarcerated	863	1009.10	898.27	49 - 6617
Employment Program (Inst.)	863	0.37	0.48	0 - 1
Employment Program (3 mo.)	528	0.36	0.48	0 - 1
Employment Program (9 mo.)	540	0.22	0.41	0 - 1
Employment Program (15 mo.)	476	0.15	0.35	0 - 1

Note: SD = Standard deviation

Table 32

Variables (females) summary statistics for offenders not receiving SVORI services

Variable(s)/Type	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	134	0.58	0.50	0 - 1
Have Employment (9 mos.)	130	0.68	0.47	0 - 1
Have Employment (15 mos.)	137	0.64	0.48	0 - 1
Re-arrest (3 mos.)	194	0.16	0.37	0 - 1
Re-arrest (9 mos.)	194	0.40	0.49	0 - 1
Re-arrest (15 mos.)	194	0.52	0.50	0 - 1
Independent variables				
Age	204	30.31	7.51	17 - 53
White	204	0.41	0.49	0 - 1
Hispanic	204	0.05	0.22	0 - 1
Prior Intimate Relationship	204	0.71	0.45	0 - 1
Education	204	11.86	2.34	4 - 17
Employed-Incarceration	204	0.59	0.49	0 - 1
Age of First Arrest	204	18.54	7.64	8 - 45

Table 32 continued

Prior Perpetration of Violence	204	0.67	0.47	0 - 1
Institutional Misconduct	204	1.69	1.15	0 - 2
Prior Drug Treatment	204	0.54	0.50	0 - 1
Prior Mental Health Treatment	204	0.55	0.50	0 - 1
Number of Days Incarcerated	204	487.10	702.57	57 - 5133
Employment Program (Inst.)	204	0.26	0.44	0 - 1
Employment Program (3 mo.)	134	0.17	0.38	0 - 1
Employment Program (9 mo.)	130	0.12	0.32	0 - 1
Employment Program (15 mo.)	137	0.12	0.33	0 - 1

Note: SD = Standard deviation

Table 33

Variables (females) summary statistics for offenders receiving SVORI services

Variable(s)/Type	N	Mean	SD	Range
Dependent variables				
Have Employment (3 mos.)	110	0.66	0.47	0 - 1
Have Employment (9 mos.)	114	0.79	0.41	0 - 1
Have Employment (15 mos.)	110	0.80	0.40	0 - 1
Re-arrest (3 mos.)	143	0.12	0.32	0 - 1
Re-arrest (9 mos.)	143	0.24	0.43	0 - 1
Re-arrest (15 mos.)	143	0.33	0.47	0 - 1
Independent variables				
Age	153	28.86	6.62	16 - 47
White	153	0.48	0.50	0 - 1
Hispanic	153	0.08	0.27	0 - 1
Prior Intimate Relationship	153	0.71	0.45	0 - 1

Table 33 continued

Education	153	12.43	2.33	7 - 18
Employed-Incarceration	153	0.59	0.49	0 - 1
Age of First Arrest	153	18.10	7.51	8 - 42
Prior Perpetration of Violence	153	0.65	0.48	0 - 1
Institutional Misconduct	153	2.02	0.91	0 - 2
Prior Drug Treatment	153	0.58	0.50	0 - 1
Prior Mental Health Treatment	153	0.44	0.50	0 - 1
Number of Days Incarcerated	153	810.45	776.79	3 - 5749
Employment Program (Inst.)	153	0.46	0.50	0 - 1
Employment Program (3 mo.)	110	0.52	0.50	0 - 1
Employment Program (9 mo.)	114	0.23	0.42	0 - 1
Employment Program (15 mo.)	110	0.23	0.42	0 - 1

Note: SD = Standard deviation

Logistic Regression Models – Unweighted (Males)

Employment Models

Table 34

Logistic regression employment outcomes among males - Three months (n = 984)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.971	0.011	-2.64	0.008**	0.950 - 0.992
White	1.285	0.240	1.34	0.179	0.891 - 1.853
Black	0.530	0.087	-3.87	0.000**	0.384 - 0.731
Hispanic	1.686	0.515	1.71	0.087	0.926 - 3.069
Prior Relationship	1.088	0.142	0.64	0.519	0.842 - 1.405
Education	1.135	0.043	3.36	0.001**	1.054 - 1.223
Emp. Incarceration	1.167	0.186	0.97	0.333	0.854 - 1.594

Table 34 continued

Age of First Arrest	1.010	0.015	0.64	0.525	0.980 - 1.040
Prior Perp. of Vio.	1.017	0.173	0.10	0.923	0.729 - 1.418
Inst. Misconduct	0.963	0.085	-0.42	0.672	0.809 - 1.146
Prior Drug Tx.	0.897	0.148	-0.66	0.509	0.649 - 1.239
Prior MH Tx.	0.970	0.147	-0.20	0.840	0.720 - 1.306
Days Incarcerated	1.000	0.000	0.74	0.459	0.100 - 1.000
Emp. Program (Inst.)	1.208	0.164	1.40	0.163	0.926 - 1.575
Model χ^2			67.41**		
Pseudo R^2			0.0603		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 35

Logistic regression employment outcomes among males - Three months (n = 984)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.971	0.011	-2.61	0.009**	0.950 - 0.993
White	1.283	0.240	1.34	0.181	0.890 - 1.851
Black	0.523	0.087	-3.91	0.000**	0.378 - 0.723
Hispanic	1.710	0.524	1.75	0.080	0.937 - 3.118
Prior Relationship	1.091	0.143	0.67	0.502	0.845 - 1.411
Education	1.136	0.043	3.36	0.001**	1.054 - 1.223
Emp. Incarceration	1.168	0.186	0.97	0.330	0.855 - 1.596
Age of First Arrest	1.009	0.015	0.62	0.534	0.980 - 1.039
Prior Perp. of Vio.	1.015	0.172	0.09	0.931	0.727 - 1.416
Inst. Misconduct	0.961	0.085	-0.45	0.655	0.808 - 1.144
Prior Drug Tx.	0.887	0.147	-0.72	0.470	0.641 - 1.228

Table 35 continued

Prior MH Tx.	0.970	0.147	-0.20	0.841	0.721 - 1.306
Days Incarcerated	1.000	0.000	0.69	0.490	0.100 - 1.000
Emp. Program (Inst.)	1.199	0.163	1.34	0.181	0.919 - 1.565
Emp. Program (3 mo)	1.100	0.162	0.65	0.516	0.825 - 1.467
Model χ^2			67.82**		
Pseudo R^2			0.0607		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 36

Logistic regression employment outcomes among males - Nine months (n = 987)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.975	0.012	-2.03	0.042*	0.952 - 0.999
White	1.403	0.284	1.68	0.093	0.945 - 2.085
Black	0.642	0.116	-2.45	0.014*	0.451 - 0.915
Hispanic	1.116	0.360	0.34	0.733	0.593 - 2.101
Prior Relationship	1.251	0.150	1.87	0.062	0.989 - 1.584
Education	1.141	0.047	3.20	0.001**	1.052 - 1.238
Emp. Incarceration	1.244	0.219	1.24	0.214	0.881 - 1.756
Age of First Arrest	1.029	0.017	1.77	0.078	0.997 - 1.062
Prior Perp. of Vio.	1.251	0.227	1.23	0.219	0.876 - 1.786
Inst. Misconduct	0.949	0.085	-0.59	0.556	0.796 - 1.131
Prior Drug Tx.	0.775	0.139	-1.43	0.153	0.545 - 1.100
Prior MH Tx.	0.866	0.129	-0.96	0.336	0.647 - 1.160
Days Incarcerated	1.000	0.000	2.13	0.033*	1.000 - 1.001

Table 36 continued

Emp. Program (Inst.)	1.475	0.294	1.95	0.051*	0.998 - 2.181
Model χ^2			65.43**		
Pseudo R^2			0.0677		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 37

Logistic regression employment outcomes among males - Nine months (n = 987)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.973	0.012	-2.18	0.029*	0.950 - 0.997
White	1.489	0.309	1.92	0.055	0.991 - 2.235
Black	0.632	0.117	-2.48	0.013*	0.440 - 0.908
Hispanic	1.054	0.352	0.16	0.874	0.548 - 2.028
Prior Relationship	1.244	0.154	1.77	0.077	0.976 - 1.585
Education	1.146	0.048	3.26	0.001**	1.056 - 1.243
Emp. Incarceration	1.240	0.220	1.21	0.226	0.876 - 1.754
Age of First Arrest	1.028	0.017	1.73	0.084	0.996 - 1.061
Prior Perp. of Vio.	1.276	0.234	1.33	0.184	0.890 - 1.830
Inst. Misconduct	0.953	0.082	-0.55	0.580	0.805 - 1.129
Prior Drug Tx.	0.752	0.136	-1.58	0.114	0.528 - 1.070
Prior MH Tx.	0.846	0.123	-1.15	0.249	0.637 - 1.124
Days Incarcerated	1.000	0.000	1.83	0.067	1.000 - 1.001
Emp. Program (Inst.)	1.478	0.298	1.94	0.053	0.996 - 2.195
Emp. Program (3 mo)	1.095	0.025	3.99	0.000**	1.047 - 1.144
Model χ^2			80.83**		
Pseudo R^2			0.0836		

Table 37 continued

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 38

Logistic regression employment outcomes among males - Nine months (n = 987)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.978	0.012	-1.80	0.071	0.954 - 1.00
White	1.511	0.309	2.02	0.043*	1.013 - 2.255
Black	0.617	0.111	-2.67	0.008**	0.432 - 0.879
Hispanic	1.072	0.345	0.22	0.829	0.570 - 2.016
Prior Relationship	1.224	0.167	1.48	0.139	0.936 - 1.600
Education	1.145	0.048	3.21	0.001**	1.054 - 1.243
Emp. Incarceration	1.284	0.229	1.41	0.160	0.906 - 1.820
Age of First Arrest	1.027	0.017	1.61	0.107	0.994 - 1.060
Prior Perp. of Vio.	1.207	0.222	1.02	0.306	0.842 - 1.730
Inst. Misconduct	0.930	0.085	-0.79	0.430	0.777 - 1.113
Prior Drug Tx.	0.765	0.139	-1.48	0.140	0.536 - 1.091
Prior MH Tx.	0.845	0.130	-1.09	0.274	0.626 - 1.142
Days Incarcerated	1.000	0.000	2.06	0.039*	1.000 - 1.001
Emp. Program (Inst.)	1.419	0.285	1.74	0.082	0.957 - 2.104
Emp. Program (9 mo)	1.709	0.330	2.78	0.005**	1.171 - 2.494
Model χ^2			80.84**		
Pseudo R^2			0.0836		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 39

Logistic regression employment outcomes among males - Fifteen months (n = 922)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.992	0.012	-0.63	0.528	0.969 - 1.016
White	1.305	0.267	1.30	0.193	0.874 - 1.949
Black	0.556	0.102	-3.18	0.001**	0.387 - 0.799
Hispanic	1.287	0.442	0.73	0.462	0.657 - 2.523
Prior Relationship	1.370	0.209	2.07	0.039*	1.016 - 1.847
Education	1.164	0.047	3.81	0.000**	1.077 - 1.259
Emp. Incarceration	1.128	0.196	0.69	0.487	0.802 - 1.585
Age of First Arrest	1.023	0.017	1.41	0.158	0.991 - 1.056
Prior Perp. of Vio.	0.935	0.172	-0.37	0.714	0.652 - 1.341
Inst. Misconduct	0.978	0.087	-0.26	0.798	0.822 - 1.163
Prior Drug Tx.	0.666	0.117	-2.32	0.020*	0.472 - 0.939
Prior MH Tx.	0.853	0.135	-1.00	0.316	0.626 -1.164
Days Incarcerated	1.000	0.000	1.47	0.142	1.000 - 1.001
Emp. Program (Inst.)	1.406	0.274	1.75	0.080	0.960 - 2.061
Model χ^2			64.13**		
Pseudo R^2			0.0651		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 40

Logistic regression employment outcomes among males - Fifteen months (n = 922)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.991	0.012	-0.77	0.443	0.967 - 1.015
White	1.312	0.272	1.31	0.189	0.875 - 1.969

Table 40 continued

Black	0.547	0.102	-3.22	0.001**	0.379 - 0.790
Hispanic	1.276	0.447	0.70	0.487	0.642 - 2.534
Prior Relationship	1.358	0.214	1.95	0.051*	0.998 - 1.849
Education	1.164	0.047	3.77	0.000**	1.076 - 1.260
Emp. Incarceration	1.134	0.198	0.72	0.471	0.806 - 1.596
Age of First Arrest	1.023	0.017	1.39	0.164	0.991 - 1.056
Prior Perp. of Vio.	0.958	0.177	-0.23	0.818	0.667 - 1.377
Inst. Misconduct	0.983	0.086	-0.20	0.845	0.829 - 1.166
Prior Drug Tx.	0.667	0.117	-2.31	0.021*	0.473 - 0.941
Prior MH Tx.	0.838	0.130	-1.14	0.255	0.618 - 1.136
Days Incarcerated	1.000	0.000	1.17	0.241	1.000 - 1.001
Emp. Program (Inst.)	1.366	0.268	1.59	0.112	0.930 - 2.005
Emp. Program (3 mo)	1.056	0.024	2.46	0.014*	1.011 - 1.103
Model χ^2			70.105**		
Pseudo R^2			0.0712		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 41

Logistic regression employment outcomes among males - Fifteen months (n = 922)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.989	0.012	-0.87	0.382	0.965 - 1.014
White	1.321	0.277	1.33	0.184	0.876 - 1.993
Black	0.565	0.106	-3.03	0.002**	0.391 - 0.818
Hispanic	1.21	0.429	0.54	0.589	0.605 - 2.423

Table 41 continued

Prior Relationship	1.358	0.222	1.87	0.062	0.985 - 1.871
Education	1.161	0.048	3.63	0.000**	1.071 - 1.259
Emp. Incarceration	1.200	0.213	1.03	0.303	0.848 - 1.699
Age of First Arrest	1.023	0.017	1.37	0.170	0.990 - 1.057
Prior Perp. of Vio.	0.935	0.176	-0.35	0.723	0.647 - 1.353
Inst. Misconduct	1.007	0.090	0.08	0.936	0.846 - 1.200
Prior Drug Tx.	0.667	0.119	-2.27	0.023*	0.470 - 0.946
Prior MH Tx.	0.848	0.134	-1.04	0.297	0.621 - 1.156
Days Incarcerated	1.000	0.000	1.08	0.279	1.000 - 1.001
Emp. Program (Inst.)	1.349	0.268	1.51	0.131	0.915 - 1.991
Emp. Program (9 mo)	1.129	0.026	5.32	0.000**	1.080 - 1.180
Model χ^2			91.55**		
Pseudo R^2			0.0930		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 42

Logistic regression employment outcomes among males - Fifteen months (n = 922)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.994	0.012	-0.51	0.609	0.970 - 1.018
White	1.305	0.271	1.28	0.200	0.869 - 1.960
Black	0.523	0.099	-3.43	0.001**	0.362 - 0.757
Hispanic	1.345	0.471	0.85	0.396	0.678 - 2.671
Prior Relationship	1.374	0.212	2.06	0.040*	1.015 - 1.860
Education	1.167	0.047	3.84	0.000**	1.079 - 1.262

Table 42 continued

Emp. Incarceration	1.111	0.194	0.60	0.547	0.789 - 1.564
Age of First Arrest	1.022	0.017	1.32	0.188	0.990 - 1.055
Prior Perp. of Vio.	0.925	0.171	-0.42	0.675	0.645 - 1.329
Inst. Misconduct	0.962	0.086	-0.43	0.670	0.807 - 1.148
Prior Drug Tx.	0.644	0.114	-2.48	0.013*	0.455 - 0.912
Prior MH Tx.	0.845	0.135	-1.06	0.291	0.617 - 1.155
Days Incarcerated	1.000	0.000	1.36	0.174	1.000 - 1.001
Emp. Program (Inst.)	1.387	0.271	1.67	0.094	0.946 - 2.034
Emp. Program(15mo)	1.832	0.500	2.22	0.027*	1.073 - 3.128
Model χ^2			71.42**		
Pseudo R^2			0.0725		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Logistic Regression Models – Unweighted (Females)

Employment Models

Table 43

Logistic regression employment outcomes among females - Three months (n = 244)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.017	0.024	0.69	0.488	0.970 - 1.065
White	1.682	0.548	1.60	0.110	0.888 - 3.186
Hispanic	2.567	1.695	1.43	0.153	0.704 - 9.362
Prior Relationship	1.30278	0.440	0.78	0.433	0.672 - 2.524
Education	1.297	0.081	4.11	0.000**	1.145 - 1.467
Emp. Incarceration	1.463	0.443	1.26	0.209	0.808 - 2.649

Table 43 continued

Age of First Arrest	0.987	0.021	-0.61	0.541	0.946 - 1.030
Prior Perp. of Vio.	1.041	0.324	0.13	0.897	0.565 - 1.918
Inst. Misconduct	1.012	0.133	0.10	0.923	0.782 - 1.311
Prior Drug Tx.	1.541	0.483	1.38	0.168	0.834 - 2.848
Prior MH Tx.	0.557	0.170	-1.92	0.055	0.306 - 1.012
Days Incarcerated	1.000	0.000	1.56	0.118	1.000 - 1.001
Emp. Program (Inst.)	1.627	0.500	1.59	0.113	0.891 - 2.971
Model χ^2			37.91**		
Pseudo R^2			0.1169		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 44

Logistic regression employment outcomes among females - Three months (n = 244)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.020	0.025	0.840	0.403	0.973 - 1.071
White	1.771	0.586	1.73	0.084	0.927 - 3.386
Hispanic	2.747	1.836	1.51	0.131	0.741 - 10.180
Prior Relationship	1.235	0.421	0.62	0.536	0.633 - 2.410
Education	1.285	0.081	3.95	0.000**	1.135 - 1.455
Emp. Incarceration	1.418	0.434	1.14	0.253	0.779 - 2.582
Age of First Arrest	0.986	0.022	-0.63	0.532	0.944 - 1.030
Prior Perp. of Vio.	1.014	0.318	0.05	0.964	0.548 - 1.875
Inst. Misconduct	1.027	0.137	0.20	0.839	0.791 - 1.334
Prior Drug Tx.	1.507	0.474	1.30	0.193	0.813 - 2.792
Prior MH Tx.	0.552	0.170	-1.93	0.054	0.302 - 1.010

Table 44 continued

Days Incarcerated	1.000	0.000	1.49	0.138	1.000 - 1.001
Emp. Program (Inst.)	1.476	0.464	1.24	0.215	0.798 - 2.732
Emp. Program (3 mo)	1.900	0.645	1.89	0.059	0.975 - 3.696
Model χ^2			41.58**		
Pseudo R^2			0.1282		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 45

Logistic regression employment outcomes among females - Nine months (n = 244)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.029	0.028	1.05	0.295	0.976 - 1.085
White	1.155	0.407	0.41	0.684	0.578 - 2.305
Hispanic	2.776	2.071	1.37	0.171	0.643 - 11.980
Prior Relationship	2.087	0.765	2.01	0.045*	1.017 - 4.279
Education	1.325	0.098	3.80	0.000**	1.146 - 1.531
Emp. Incarceration	1.431	0.487	1.05	0.292	0.735 - 2.789
Age of First Arrest	1.032	0.030	1.10	0.270	0.976 - 1.092
Prior Perp. of Vio.	0.862	0.308	-0.41	0.678	0.428 - 1.737
Inst. Misconduct	0.946	0.190	-0.28	0.782	0.638 - 1.403
Prior Drug Tx.	2.387	0.864	2.40	0.016*	1.174 - 4.852
Prior MH Tx.	0.394	0.140	-2.61	0.009**	0.196 - 0.794
Days Incarcerated	1.000	0.000	0.87	0.382	1.000 - 1.001
Emp. Program (Inst.)	2.015	0.696	2.03	0.042*	1.024 - 3.965
Model χ^2			44.25**		
Pseudo R^2			0.1564		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 46

Logistic regression employment outcomes among females - Nine months (n = 244)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.037	0.028	1.31	0.189	0.982 - 1.094
White	1.300	0.467	0.73	0.465	0.643 - 2.627
Hispanic	3.061	2.286	1.50	0.134	0.708 - 13.227
Prior Relationship	1.761	0.669	1.49	0.136	0.837 - 3.709
Education	1.316	0.098	3.70	0.000**	1.138 - 1.521
Emp. Incarceration	1.441	0.497	1.06	0.290	0.733 - 2.833
Age of First Arrest	1.024	0.029	0.85	0.395	0.969 - 1.083
Prior Perp. of Vio.	0.888	0.321	-0.33	0.743	0.438 - 1.803
Inst. Misconduct	0.970	0.199	-0.15	0.883	0.650 - 1.449
Prior Drug Tx.	2.445	0.892	2.45	0.014*	1.196 - 4.999
Prior MH Tx.	0.391	0.142	-2.59	0.010**	0.192 - 0.796
Days Incarcerated	1.000	0.000	0.86	0.390	1.000 - 1.001
Emp. Program (Inst.)	2.096	0.735	2.11	0.035*	1.054 - 4.168
Emp. Program (3 mo)	1.109	0.056	2.06	0.040*	1.005 - 1.225
Model χ^2			48.45**		
Pseudo R^2			0.1713		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 47

Logistic regression employment outcomes among females - Nine months (n = 244)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.033	0.028	1.17	0.242	0.979 - 1.090
White	1.265	0.454	0.65	0.513	0.626 - 2.556

Table 47 continued

Hispanic	2.885	2.164	1.41	0.158	0.663 - 12.551
Prior Relationship	2.050	0.759	1.94	0.053	0.992 - 4.234
Education	1.351	0.102	3.95	0.000	1.163 - 1.568
Emp. Incarceration	1.438	0.494	1.06	0.291	0.733 - 2.819
Age of First Arrest	1.026	0.030	0.89	0.371	0.970 - 1.086
Prior Perp. of Vio.	0.778	0.282	-0.69	0.487	0.382 - 1.581
Inst. Misconduct	0.996	0.206	-0.02	0.986	0.665 - 1.494
Prior Drug Tx.	2.461	0.908	2.44	0.015*	1.194 - 5.073
Prior MH Tx.	0.360	0.132	-2.79	0.005**	0.175 - 0.738
Days Incarcerated	1.000	0.000	0.76	0.445	1.000 - 1.001
Emp. Program (Inst.)	1.974	0.693	1.94	0.053	0.992 - 3.929
Emp. Program (9 mo)	3.170	1.634	2.24	0.025*	1.154 - 8.708
Model χ^2			50.07**		
Pseudo R^2			0.1770		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 48

Logistic regression employment outcomes among females - Fifteen months (n = 247)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.016	0.026	0.64	0.520	0.967 - 1.069
White	1.629	0.551	1.44	0.149	0.840 - 3.159
Hispanic	1.772	1.272	0.80	0.425	0.434 - 7.239
Prior Relationship	1.646	0.570	1.44	0.150	0.834 - 3.247
Education	1.258	0.087	3.34	0.001*	1.100 - 1.440
Emp. Incarceration	0.748	0.251	-0.86	0.387	0.388 - 1.443

Table 48 continued

Age of First Arrest	1.024	0.027	0.93	0.352	0.974 - 1.078
Prior Perp. of Vio.	1.063	0.357	0.18	0.855	0.550 - 2.054
Inst. Misconduct	1.156	0.176	0.95	0.342	0.857 - 1.559
Prior Drug Tx.	0.967	0.320	-0.10	0.919	0.506 - 1.849
Prior MH Tx.	0.397	0.129	-2.83	0.005**	0.209 - 0.752
Days Incarcerated	1.000	0.000	1.15	0.250	1.000 - 1.001
Emp. Program (Inst.)	2.706	0.934	2.89	0.004**	1.376 - 5.321
Model χ^2			41.07**		
Pseudo R^2			0.1378		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 49

Logistic regression employment outcomes among females - Fifteen months (n = 247)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.017	0.026	0.67	0.500	0.967 - 1.070
White	1.784	0.614	1.68	0.092	0.909 - 3.502
Hispanic	1.985	1.455	0.94	0.349	0.472 - 8.348
Prior Relationship	1.333	0.486	0.79	0.429	0.653 - 2.725
Education	1.275	0.089	3.49	0.000**	1.112 - 1.461
Emp. Incarceration	0.740	0.253	-0.88	0.378	0.378 - 1.445
Age of First Arrest	1.017	0.027	0.65	0.514	0.966 - 1.070
Prior Perp. of Vio.	1.050	0.358	0.14	0.886	0.538 - 2.050
Inst. Misconduct	1.217	0.193	1.24	0.215	0.892 - 1.662
Prior Drug Tx.	0.934	0.313	-0.20	0.838	0.484 - 1.802

Table 49 continued

Prior MH Tx.	0.390	0.130	-2.83	0.005**	0.203 - 0.748
Days Incarcerated	1.000	0.000	1.04	0.298	1.000 - 1.001
Emp. Program (Inst.)	2.683	0.932	2.84	0.005**	1.358 - 5.300
Emp. Program (3 mo)	1.122	0.0528	2.44	0.015*	1.023 - 1.230
Model χ^2			46.98**		
Pseudo R^2			0.1576		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 50

Logistic regression employment outcomes among females - Fifteen months (n = 247)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.017	0.026	0.67	0.505	0.967 - 1.070
White	1.635	0.554	1.45	0.147	0.842 - 3.176
Hispanic	1.779	1.279	0.80	0.423	0.434 - 7.285
Prior Relationship	1.699	0.598	1.51	0.132	0.852 - 3.389
Education	1.257	0.087	3.31	0.001**	1.098 - 1.439
Emp. Incarceration	0.748	0.251	-0.87	0.386	0.388 - 1.442
Age of First Arrest	1.026	0.027	0.99	0.324	0.975 - 1.080
Prior Perp. of Vio.	1.072	0.361	0.21	0.835	0.555 - 2.074
Inst. Misconduct	1.155	0.173	0.96	0.337	0.861 - 1.550
Prior Drug Tx.	0.981	0.326	-0.06	0.953	0.512 - 1.881
Prior MH Tx.	0.397	0.130	-2.83	0.005**	0.209 - 0.753
Days Incarcerated	1.000	0.000	1.17	0.240	1.000 - 1.001
Emp. Program (Inst.)	2.7844	0.974474	2.93	0.003**	1.402 - 5.529

Table 50 continued

Emp. Program (9 mo)	0.972	0.0528	-0.52	0.605	0.874 - 1.081
Model χ^2			41.34**		
Pseudo R^2			0.1387		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 51

Logistic regression employment outcomes among females - Fifteen months (n = 247)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.021	0.027	0.83	0.405	0.971 - 1.075
White	1.825	0.629	1.75	0.081	0.929 - 3.586
Hispanic	2.040	1.499	0.97	0.332	0.483 - 8.613
Prior Relationship	1.658	0.583	1.44	0.150	0.833 - 3.302
Education	1.252	0.087	3.24	0.001**	1.092 - 1.434
Emp. Incarceration	0.709	0.241	-1.01	0.311	0.364 - 1.379
Age of First Arrest	1.019	0.027	0.72	0.469	0.968 - 1.074
Prior Perp. of Vio.	0.953	0.324	-0.14	0.889	0.489 - 1.858
Inst. Misconduct	1.201	0.196	1.13	0.260	0.873 - 1.653
Prior Drug Tx.	0.958	0.320	-0.13	0.897	0.498 - 1.842
Prior MH Tx.	0.397	0.130	-2.82	0.005**	0.209 - 0.755
Days Incarcerated	1.000	0.000	0.87	0.384	1.000 - 1.001
Emp. Program (Inst.)	2.604	0.914	2.73	0.006**	1.308 - 5.181
Emp. Program(15mo)	2.794	1.423	2.02	0.044*	1.030 - 7.580
Model χ^2			45.70**		
Pseudo R^2			0.1533		

Note: * p < .05, ** p < .01. MH = Mental Health.

Logistic Regression Models – Unweighted (Males)

Re-arrest Models

Table 52

Logistic regression re-arrest outcomes among males - Three months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.006	0.010	0.63	0.529	0.987 - 1.026
White	0.748	0.181	-1.20	0.229	0.466 - 1.200
Black	1.342	0.300	1.32	0.188	0.866 - 2.080
Hispanic	1.490	0.510	1.16	0.244	0.762 - 2.915
Prior Relationship	1.003	0.099	0.03	0.976	0.826 - 1.218
Education	0.932	0.027	-2.39	0.017*	0.880 - 0.987
Emp. Institution	0.749	0.104	-2.08	0.038*	0.570 - 0.984
Age of First Arrest	0.989	0.014	-0.79	0.428	0.962 - 1.016
Prior Perp. of Vio.	0.950	0.142	-0.35	0.730	0.708 - 1.274
Inst. Misconduct	0.987	0.072	-0.18	0.856	0.855 - 1.139
Prior Drug Tx.	1.065	0.139	0.49	0.627	0.825 - 1.375
Prior MH Tx.	1.135	0.145	0.98	0.327	0.881 - 1.463
Days Incarcerated	1.000	0.000	-3.21	0.001**	1.000 - 1.001
Emp. Program (Inst.)	0.857	0.111	-1.19	0.235	0.665 - 1.105
Model χ^2			51.10**		
Pseudo R^2			0.0353		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 53

Logistic regression re-arrest outcomes among males - Three months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.008	0.010	0.75	0.452	0.988 - 1.028
White	0.746	0.195	-1.12	0.264	0.447 - 1.247
Black	1.369	0.334	1.28	0.199	0.848 - 2.209
Hispanic	1.539	0.573	1.16	0.246	0.742 - 3.191
Prior Relationship	1.031	0.104	0.30	0.765	0.846 - 1.256
Education	0.939	0.028	-2.11	0.035*	0.887 - 0.996
Emp. Incarceration	0.767	0.108	-1.89	0.059	0.582 - 1.010
Age of First Arrest	1.000	0.014	-0.71	0.479	0.963 - 1.018
Prior Perp. of Vio.	0.947	0.143	-0.36	0.718	0.704 - 1.273
Inst. Misconduct	0.978	0.071	-0.31	0.759	0.849 - 1.127
Prior Drug Tx.	1.114	0.148	0.81	0.415	0.859 - 1.444
Prior MH Tx.	1.150	0.148	1.09	0.274	0.895 - 1.479
Days Incarcerated	1.000	0.000	-2.92	0.003**	1.000 - 1.001
Emp. Program (Inst.)	0.877	0.118	-0.98	0.329	0.674 - 1.141
Emp. Program (3 mo)	0.9252041	0.015	-4.66	0.000**	0.895 - 0.956
Model χ^2			72.99**		
Pseudo R^2			0.0504		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 54

Logistic regression re-arrest outcomes among males - Nine months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.002	0.008	0.23	0.817	0.986 - 1.018
White	1.043	0.221	0.20	0.839	0.690 - 1.580
Black	1.649	0.335	2.46	0.014*	1.108 - 2.454
Hispanic	1.304	0.420	0.82	0.411	0.693 - 2.451
Prior Relationship	0.974	0.076	-0.34	0.733	0.836 - 1.134
Education	0.910	0.022	-3.84	0.000**	0.868 - 0.955
Emp. Incarceration	0.817	0.089	-1.85	0.064	0.661 - 1.011
Age of First Arrest	0.979	0.010	-1.91	0.056	0.959 - 1.001
Perp. of Vio.	1.241	0.146	1.84	0.066	0.986 - 1.562
Inst. Misconduct	1.052	0.061	0.88	0.379	0.940 - 1.178
Prior Drug Tx.	0.927	0.094	-0.74	0.457	0.759 - 1.132
Prior MH Tx.	1.080	0.095	0.87	0.382	0.909 - 1.284
Days Incarcerated	1.000	0.000	-4.04	0.000**	1.000 - 1.001
Emp. Program (Inst.)	0.961	0.100	-0.38	0.703	0.784 - 1.178
Model χ^2			77.89**		
Pseudo R^2			0.0362		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 55

Logistic regression re-arrest outcomes among males - Nine months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.003	0.008	0.38	0.706	0.987 - 1.019
White	1.043	0.226	0.20	0.845	0.683 - 1.594
Black	1.696	0.353	2.54	0.011*	1.128 - 2.549

Table 55 continued

Hispanic	1.360	0.448	0.93	0.351	0.713 - 2.596
Prior Relationship	1.001	0.079	0.01	0.992	0.858 - 1.168
Education	0.915	0.023	-3.55	0.000**	0.872 - 0.961
Emp. Incarceration	0.836	0.092	-1.63	0.104	0.674 - 1.037
Age of First Arrest	0.980	0.011	-1.79	0.074	0.959 - 1.001
Prior Perp. of Vio.	1.248	0.148	1.87	0.062	0.990 - 1.576
Inst. Misconduct	1.043	0.060	0.73	0.465	0.932 - 1.167
Prior Drug Tx.	0.967	0.099	-0.32	0.747	0.791 - 1.183
Prior MH Tx.	1.101	0.097	1.09	0.276	0.926 - 1.310
Days Incarcerated	1.000	0.000	-3.71	0.000**	1.000 - 1.001
Emp. Program (Inst.)	0.994	0.106	-0.06	0.956	0.807 - 1.225
Emp. Program (3 mo)	0.924	0.012	-6.06	0.000**	0.901 - 0.948
Model χ^2			114.88**		
Pseudo R^2			0.0534		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 56

Logistic regression re-arrest outcomes among males - Nine months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.002	0.008	0.26	0.792	0.986 - 1.018
White	1.061	0.230	0.27	0.786	0.694 - 1.621
Black	1.655	0.344	2.42	0.015*	1.101 - 2.488
Hispanic	1.351	0.446	0.91	0.361	0.708 - 2.579
Prior Relationship	0.998	0.079	-0.03	0.979	0.854 - 1.166
Education	0.917	0.023	-3.45	0.001**	0.873 - 0.963
Emp. Incarceration	0.805	0.089	-1.96	0.050*	0.648 - 1.000

Table 56 continued

Age of First Arrest	0.980	0.011	-1.81	0.071	0.959 - 1.001
Prior Perp. of Vio.	1.245	0.149	1.84	0.066	0.985 - 1.573
Inst. Misconduct	1.023	0.060	0.38	0.702	0.912 - 1.147
Prior Drug Tx.	0.961	0.099	-0.38	0.703	0.785 - 1.177
Prior MH Tx.	1.072	0.100	0.78	0.435	0.900 - 1.278
Days Incarcerated	1.000	0.000	-3.71	0.000**	1.000 - 1.000
Emp. Program (Inst.)	1.015	0.107	0.14	0.887	0.826 - 1.248
Emp. Program (9 mo)	0.912	0.012	-7.04	0.000**	0.889 - 0.936
Model χ^2			128.04**		
Pseudo R^2			0.0595		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 57

Logistic regression re-arrest outcomes among males - Fifteen months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.996	0.008	-0.44	0.657	0.981 - 1.012
White	0.863	0.099	-1.28	0.200	0.689 - 1.081
Black	1.490	0.158	3.76	0.000**	1.210 - 1.835
Hispanic	0.854	0.155	-0.87	0.384	0.598 - 1.219
Prior Relationship	0.933	0.079	-0.82	0.414	0.791 - 1.101
Education	0.917	0.023	-3.50	0.000**	0.874 - 0.963
Emp. Incarceration	0.867	0.095	-1.30	0.193	0.700 - 1.074
Age of First Arrest	0.974	0.011	-2.39	0.017*	0.954 - 0.995
Prior Perp. of Vio.	1.452	0.169	3.20	0.001**	1.155 - 1.824
Inst. Misconduct	1.043	0.059	0.74	0.458	0.934 - 1.165

Table 57 continued

Prior Drug Tx.	0.942	0.097	-0.57	0.565	0.770 - 1.153
Prior MH Tx.	1.091	0.094	1.02	0.306	0.923 - 1.291
Days Incarcerated	1.000	0.000	-5.03	0.000**	1.000 - 1.001
Emp. Program (Inst.)	1.000	0.103	0.00	1.000	0.817 - 1.225
Model χ^2			97.18**		
Pseudo R^2			0.0447		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 58

Logistic regression re-arrest outcomes among males - Fifteen months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.997	0.008	-0.33	0.742	0.982 - 1.013
White	0.841	0.098	-1.49	0.136	0.670 - 1.056
Black	1.493	0.160	3.74	0.000**	1.210 - 1.842
Hispanic	0.853	0.157	-0.86	0.387	0.595 - 1.223
Prior Relationship	0.957	0.081	-0.51	0.607	0.811 - 1.130
Education	0.921	0.023	-3.26	0.001**	0.877 - 0.968
Emp. Incarceration	0.887	0.098	-1.09	0.277	0.714 - 1.101
Age of First Arrest	0.975	0.010	-2.27	0.023*	0.954 - 0.997
Prior Perp. of Vio.	1.466	0.172	3.25	0.001**	1.164 - 1.846
Inst. Misconduct	1.036	0.059	0.62	0.534	0.927 - 1.158
Prior Drug Tx.	0.980	0.102	-0.19	0.846	0.799 - 1.201
Prior MH Tx.	1.110	0.096	1.21	0.225	0.938 - 1.314
Days Incarcerated	1.000	0.000	-4.77	0.000**	1.000 - 1.001
Emp. Program (Inst.)	1.033	0.109	0.31	0.757	0.840 - 1.270

Table 58 continued

Emp. Program (3 mo)	0.931	0.012	-5.48	0.000**	0.907 - 0.955
Model χ^2			127.62**		
Pseudo R^2			0.0587		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 59

Logistic regression re-arrest outcomes among males - Fifteen months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.996	0.008	-0.44	0.660	0.981 - 1.013
White	0.863	0.101	-1.26	0.208	0.686 - 1.086
Black	1.482	0.160	3.63	0.000**	1.198 - 1.832
Hispanic	0.865	0.160	-0.78	0.434	0.601 - 1.244
Prior Relationship	0.958	0.082	-0.51	0.613	0.809 - 1.133
Education	0.923	0.023	-3.14	0.002**	0.879 - 0.970
Emp. Incarceration	0.851	0.095	-1.45	0.147	0.684 - 1.059
Age of First Arrest	0.975	0.011	-2.28	0.023*	0.954 - 0.996
Prior Perp. of Vio.	1.467	0.174	3.23	0.001**	1.162 - 1.851
Inst. Misconduct	1.013	0.058	0.23	0.818	0.906 - 1.133
Prior Drug Tx.	0.979	0.103	-0.20	0.843	0.797 - 1.203
Prior MH Tx.	1.085	0.094	0.95	0.343	0.916 - 1.285
Days Incarcerated	1.000	0.000	-4.73	0.000**	1.000 - 1.001
Emp. Program (Inst.)	1.064	0.112	0.59	0.555	0.866 - 1.308
Emp. Program (9 mo)	0.907	0.012	-7.38	0.000**	0.883 - 0.931
Model χ^2			153.14**		
Pseudo R^2			0.0705		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 60

Logistic regression re-arrest outcomes among males - Fifteen months (n = 1581)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.998	0.008	-0.25	0.805	0.982 - 1.014
White	0.904	0.107	-0.86	0.391	0.717 - 1.139
Black	1.517	0.166	3.82	0.000**	1.225 - 1.879
Hispanic	0.809	0.151	-1.13	0.257	0.561 - 1.167
Prior Relationship	0.959	0.084	-0.48	0.631	0.808 - 1.138
Education	0.922	0.023	-3.19	0.001**	0.877 - 0.969
Emp. Incarceration	0.879	0.098	-1.15	0.250	0.706 - 1.095
Age of First Arrest	0.977	0.011	-2.12	0.034*	0.956 - 0.998
Prior Perp. of Vio.	1.457	0.174	3.16	0.002**	1.154 - 1.841
Inst. Misconduct	1.038	0.060	0.64	0.520	0.927 - 1.163
Prior Drug Tx.	0.974	0.103	-0.25	0.801	0.791 - 1.198
Prior MH Tx.	1.113	0.098	1.21	0.226	0.936 - 1.323
Days Incarcerated	1.000	0.000	-4.82	0.000**	1.000 - 1.001
Emp. Program (Inst.)	1.001	0.107	0.09	0.926	0.821 - 1.242
Emp. Program(15mo)	0.898	0.012	-8.27	0.000**	0.876 - 0.921
Model χ^2			167.57**		
Pseudo R^2			0.0771		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Logistic Regression Models – Unweighted (Females)

Re-arrest Models

Table 61

Logistic regression re-arrest outcomes among females - Three months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.046	0.027	1.77	0.077	0.995 - 1.100
White	0.660	0.237	-1.16	0.247	0.326 - 1.334
Hispanic	0.823	0.669	-0.24	0.811	0.167 - 4.052
Prior Relationship	0.923	0.341	-0.22	0.828	0.448 - 1.902
Education	1.090	0.080	1.17	0.241	0.944 - 1.258
Emp. Incarceration	1.499	0.544	1.12	0.264	0.736 - 3.052
Age of First Arrest	0.910	0.020	-4.18	0.000**	0.871 - 0.951
Prior Perp. of Vio.	1.104	0.402	0.27	0.785	0.541 - 2.256
Inst. Misconduct	1.157242	0.228	0.74	0.458	0.787 - 1.702
Prior Drug Tx.	1.380	0.502	0.88	0.377	0.676 - 2.817
Prior MH Tx.	1.547	0.544	1.24	0.215	0.776 - 3.081
Days Incarcerated	1.000	0.000	-0.43	0.667	1.000 - 1.001
Emp. Program (Inst.)	1.359	0.462	0.90	0.366	0.698 - 2.645
Model χ^2			31.18**		
Pseudo R^2			0.1130		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 62

Logistic regression re-arrest outcomes among females - Three months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.049	0.028	1.82	0.069	1.000 - 1.105
White	0.606	0.223	-1.36	0.174	0.294 - 1.247

Table 62 continued

Hispanic	0.713	0.609	-0.40	0.692	0.134 - 3.799
Prior Relationship	1.163	0.449	0.39	0.696	0.546 - 2.480
Education	1.084	0.083	1.06	0.290	0.933 - 1.260
Emp. Incarceration	1.672	0.625	1.38	0.169	0.804 - 3.477
Age of First Arrest	0.911	0.002	-3.99	0.000**	0.870 - 0.953
Prior Perp. of Vio.	1.190	0.456	0.45	0.650	0.561 - 2.522
Inst. Misconduct	1.125	0.236	0.56	0.574	0.746 - 1.697
Prior Drug Tx.	1.390	0.517	0.89	0.376	0.670 - 2.881
Prior MH Tx.	1.442	0.528	1.00	0.318	0.703 - 2.957
Days Incarcerated	1.000	0.000	-0.24	0.814	1.000 - 1.001
Emp. Program (Inst.)	1.433	0.508	1.01	0.310	0.715 - 2.871
Emp. Program (3 mo)	0.856	0.036	-3.70	0.000**	0.788 - 0.929
Model χ^2			45.15**		
Pseudo R^2			0.1637		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 63

Logistic regression re-arrest outcomes among females - Nine months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.033	0.020	1.68	0.094	0.995 - 1.073
White	0.787	0.208	-0.90	0.366	0.469 - 1.322
Hispanic	0.970	0.528	-0.06	0.955	0.334 - 2.817
Prior Relationship	0.654	0.175	-1.59	0.113	0.386 - 1.105
Education	0.964	0.051	-0.70	0.485	0.869 - 1.069
Emp. Incarceration	1.095	0.282	0.35	0.723	0.661 - 1.814
Age of First Arrest	0.932	0.018	-3.64	0.000**	0.898 - 0.968

Table 63 continued

Prior Perp. of Vio.	0.969	0.257	-0.12	0.905	0.576 - 1.629
Inst. Misconduct	1.179	0.161	1.21	0.225	0.903 - 1.542
Prior Drug Tx.	1.693	0.455	1.96	0.050*	1.000 - 2.867
Prior MH Tx.	1.029	0.266	0.11	0.913	0.619 - 1.708
Days Incarcerated	1.000	0.000	-1.05	0.295	1.000 - 1.001
Emp. Program (Inst.)	0.954	0.241	-0.19	0.851	0.581 - 1.566
Model χ^2			33.71**		
Pseudo R^2			0.0787		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 64

Logistic regression re-arrest outcomes among females - Nine months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.036	0.021	1.75	0.081	0.996 - 1.077
White	0.736	0.201	-1.12	0.261	0.431 - 1.256
Hispanic	0.983	0.563	-0.03	0.976	0.320 - 3.021
Prior Relationship	0.820	0.232	-0.70	0.483	0.471 - 1.428
Education	0.960	0.052	-0.76	0.447	0.863 - 1.067
Emp. Incarceration	1.196	0.319	0.67	0.504	0.708 - 2.018
Age of First Arrest	0.938	0.018	-3.33	0.001**	0.903 - 0.974
Prior Perp. of Vio.	1.000	0.276	-0.00	0.999	0.582 - 1.717
Inst. Misconduct	1.139	0.162	0.91	0.362	0.861 - 1.505
Prior Drug Tx.	1.796	0.498	2.11	0.035*	1.043 - 3.093
Prior MH Tx.	0.979	0.263	-0.08	0.936	0.578 - 1.657
Days Incarcerated	1.000	0.000	-0.76	0.449	0.999 - 1.000
Emp. Program (Inst.)	0.970	0.255	-0.12	0.906	0.580 - 1.622

Table 64 continued

Emp. Program (3 mo)	0.868	0.028	-4.41	0.000**	0.815 - 0.924
Model χ^2			53.52**		
Pseudo R^2			0.1249		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 65

Logistic regression re-arrest outcomes among females - Nine months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.034	0.020	1.72	0.085	0.995 - 1.074
White	0.794	0.216	-0.87	0.384	0.472 - 1.335
Hispanic	1.023	0.560	0.04	0.967	0.350 - 2.992
Prior Relationship	0.691	0.187	-1.36	0.172	0.406 - 1.175
Education	0.962	0.051	-0.72	0.469	0.868 - 1.068
Emp. Incarceration	1.115	0.289	0.42	0.673	0.672 - 1.852
Age of First Arrest	0.937	0.018	-3.34	0.001**	0.902 - 0.974
Prior Perp. of Vio.	0.980	0.261	-0.08	0.940	0.581 - 1.653
Inst. Misconduct	1.177032	0.157	1.22	0.222	0.906 - 1.529
Prior Drug Tx.	1.664	0.449	1.89	0.059	0.980 - 2.823
Prior MH Tx.	1.021	0.266	0.08	0.938	0.613 - 1.699
Days Incarcerated	1.000	0.000	-0.97	0.330	0.999 - 1.000
Emp. Program (Inst.)	0.977	0.249	-0.09	0.926	0.593 - 1.609
Emp. Program (9 mo)	0.949	0.030	-1.65	0.099	0.891 - 1.010
Model χ^2			36.40**		
Pseudo R^2			0.0849		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 66

Logistic regression re-arrest outcomes among females - Fifteen months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.026	0.019	1.38	0.168	0.989 - 1.063
White	0.797	0.197	-0.92	0.358	0.492 - 1.293
Hispanic	1.095	0.547	0.18	0.856	0.411 - 2.915
Prior Relationship	0.661	0.169	-1.62	0.105	0.401 - 1.090
Education	0.930	0.046	-1.45	0.148	0.844 - 1.026
Emp. Incarceration	1.110	0.267	0.44	0.663	0.693 - 1.778
Age of First Arrest	0.960	0.016	-2.35	0.019*	0.929 - 0.993
Prior Perp. of Vio.	1.156	0.288	0.58	0.560	0.709 - 1.885
Inst. Misconduct	1.195	0.152	1.40	0.161	0.932 - 1.533
Prior Drug Tx.	1.414	0.350	1.40	0.162	0.870 - 2.296
Prior MH Tx.	0.964	0.234	-0.15	0.880	0.599 - 1.552
Days Incarcerated	1.000	0.000	-1.57	0.116	1.000 - 1.001
Emp. Program (Inst.)	1.173	0.277	0.67	0.501	0.738 - 1.864
Model χ^2			25.17*		
Pseudo R^2			0.0544		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 67

Logistic regression re-arrest outcomes among females - Fifteen months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.027	0.019	1.40	0.162	0.989 - 1.065
White	0.751	0.191	-1.13	0.259	0.456 - 1.235
Hispanic	1.138	0.584	0.25	0.801	0.417 - 3.111
Prior Relationship	0.797	0.213	-0.85	0.396	0.473 - 1.345

Table 67 continued

Education	0.927	0.047	-1.49	0.137	0.840 - 1.024
Emp. Incarceration	1.197	0.296	0.73	0.468	0.737 - 1.943
Age of First Arrest	0.966	0.017	-1.98	0.047*	0.934 - 1.000
Prior Perp. of Vio.	1.204	0.310	0.72	0.472	0.727 - 1.992
Inst. Misconduct	1.159	0.151	1.13	0.259	0.897 - 1.496
Prior Drug Tx.	1.487	0.379	1.56	0.119	0.903 - 2.450
Prior MH Tx.	0.919	0.229	-0.34	0.735	0.564 - 1.499
Days Incarcerated	1.000	0.000	-1.33	0.185	0.999 - 1.000
Emp. Program (Inst.)	1.198	0.291	0.75	0.456	0.745 - 1.929
Emp. Program (3 mo)	0.883	0.027	-4.02	0.000**	0.830 - 0.938
Model χ^2			41.79*		
Pseudo R^2			0.0904		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 68

Logistic regression re-arrest outcomes among females - Fifteen months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.027	0.019	1.44	0.149	0.990 - 1.066
White	0.807	0.202	-0.86	0.391	0.495 - 1.317
Hispanic	1.205	0.607	0.37	0.710	0.449 - 3.232
Prior Relationship	0.718	0.186	-1.28	0.202	0.432 - 1.195
Education	0.928	0.047	-1.49	0.137	0.841 - 1.024
Emp. Incarceration	1.138	0.277	0.53	0.597	0.706 - 1.833
Age of First Arrest	0.968	0.017	-1.86	0.063	0.935 - 1.002
Prior Perp. of Vio.	1.182	0.299	0.66	0.509	0.720 - 1.940
Inst. Misconduct	1.193	0.147	1.43	0.153	0.937 - 1.519

Table 68 continued

Prior Drug Tx.	1.385	0.347	1.30	0.193	0.848 - 2.263
Prior MH Tx.	0.950	0.234	-0.21	0.836	0.587 - 1.540
Days Incarcerated	1.000	0.000	-1.46	0.143	0.999 - 1.000
Emp. Program (Inst.)	1.230	0.295	0.86	0.389	0.768 - 1.969
Emp. Program (9 mo)	0.917	0.028	-2.79	0.005**	0.863 - 0.975
Model χ^2			33.05**		
Pseudo R^2			0.0715		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 69

Logistic regression re-arrest outcomes among females - Fifteen months (n = 337)

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.028	0.019	1.48	0.139	0.991 - 1.066
White	0.777	0.195	-1.01	0.315	0.475 - 1.270
Hispanic	1.117	0.557	0.22	0.825	0.420 - 2.970
Prior Relationship	0.713	0.185	-1.30	0.193	0.429 - 1.187
Education	0.932	0.047	-1.41	0.160	0.845 - 1.028
Emp. Incarceration	1.161	0.283	0.61	0.540	0.720 - 1.873
Age of First Arrest	0.965	0.017	-2.04	0.041*	0.933 - 0.999
Prior Perp. of Vio.	1.134	0.287	0.50	0.620	0.690 - 1.862
Inst. Misconduct	1.159	0.147	1.15	0.250	0.901 - 1.490
Prior Drug Tx.	1.443	0.363	1.46	0.145	0.881 - 2.362
Prior MH Tx.	0.935	0.230	-0.27	0.784	0.577 - 1.515
Days Incarcerated	1.000	0.000	-1.33	0.184	0.999 - 1.000
Emp. Program (Inst.)	1.180	0.283	0.69	0.490	0.738 - 1.888
Emp. Program(15mo)	0.913	0.028	-3.01	0.003**	0.860 - 0.969

Table 69 continued

Model χ^2	34.35**
Pseudo R^2	0.0743

Note: * p < .05, ** p < .01. MH = Mental Health.

Combined Gender Employment Models

Table 70

Logistic regression combined gender employment model - Three months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.978	0.009	-2.20	0.028*	0.959 - 0.998
White	1.262	0.191	1.54	0.124	0.938 - 1.698
Black	0.581	0.078	-4.03	0.000**	0.446 - 0.757
Hispanic	1.540	0.368	1.81	0.071	0.964 - 2.460
Prior Relationship	1.110	0.134	0.87	0.386	0.876 - 1.407
Education	1.177	0.037	5.11	0.000**	1.105 - 1.252
Emp. Incarceration	1.240	0.172	1.55	0.120	0.945 - 1.627
Age of First Arrest	1.004	0.012	0.39	0.696	0.981 - 1.029
Prior Perp. of Vio.	1.000	0.146	-0.06	0.953	0.742 - 1.324
Inst. Misconduct	0.983	0.071	-0.24	0.809	0.853 - 1.132
Prior Drug Tx.	1.000	0.144	0.00	0.998	0.753 - 1.327
Prior MH Tx.	0.980	0.145	-0.14	0.889	0.733 - 1.308
Days Incarcerated	1.000	0.000	1.11	0.267	0.999 - 1.000
Emp. Program (Inst.)	1.268	0.158	1.91	0.057	0.993 - 1.000
Gender	0.641	0.142	-2.01	0.045*	0.416 - 0.990
Gender*Prior MH	0.604	0.189	-1.61	0.108	0.327 - 1.117
Model χ^2			106.96**		
Pseudo R^2			0.0734		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 71

Logistic regression combined gender employment model - Three months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.979	0.010	-2.13	0.033*	0.960 - 0.998
White	1.258	0.191	1.51	0.130	0.935 - 1.693
Black	0.566	0.077	-4.17	0.000**	0.433 - 0.740
Hispanic	1.581	0.381	1.90	0.057	0.987 - 2.534
Prior Relationship	1.115	0.135	0.90	0.368	0.880 - 1.414
Education	1.176	0.037	5.09	0.000**	1.105 - 1.252
Emp. Incarceration	1.240	0.172	1.55	0.122	0.944 - 1.627
Age of First Arrest	1.004	0.012	0.38	0.703	0.981 - 1.029
Prior Perp. of Vio.	0.988	0.146	-0.08	0.933	0.740 - 1.320
Inst. Misconduct	0.982	0.071	-0.25	0.803	0.853 - 1.131
Prior Drug Tx.	0.982	0.143	-0.12	0.901	0.739 - 1.305
Prior MH Tx.	0.979	0.144	-0.15	0.884	0.733 - 1.306
Days Incarcerated	1.000	0.000	1.00	0.317	0.999 - 1.000
Emp. Program (Inst.)	1.247	0.155	1.77	0.076	0.977 - 1.592
Emp. Program (3 mo)	1.201	0.153	1.44	0.149	0.936 - 1.541
Gender	0.635	0.141	-2.05	0.040*	0.412 - 0.981
Gender*Prior MH	0.604	0.189	-1.61	0.108	0.326 - 1.117
Model χ^2			108.94**		
Pseudo R^2			0.0748		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 72

Logistic regression combined gender employment model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.982	0.010	-1.66	0.096	0.961 - 1.003
White	1.185	0.207	0.97	0.331	0.841 - 1.670
Black	0.638	0.102	-2.80	0.005**	0.465 – 0.874
Hispanic	1.262	0.351	0.84	0.403	0.732 - 2.175
Prior Relationship	1.290	0.152	2.17	0.030*	1.024 - 1.625
Education	1.178	0.041	4.66	0.000**	1.010 - 1.262
Emp. Incarceration	1.267	0.194	1.55	0.121	0.939 - 1.710
Age of First Arrest	1.033	0.014	2.38	0.017*	1.006 - 1.061
Prior Perp. of Vio.	1.129	0.181	0.76	0.447	0.825 - 1.546
Inst. Misconduct	0.950	0.076	-0.64	0.519	0.811 - 1.111
Prior Drug Tx.	0.961	0.151	-0.25	0.799	0.706 - 1.307
Prior MH Tx.	0.883	0.127	-0.86	0.388	0.665 - 1.171
Days Incarcerated	1.000	0.000	2.10	0.036*	1.000 - 1.000
Emp. Program (Inst.)	1.553	0.264	2.59	0.010**	1.113 - 2.168
Gender	0.857	0.222	-0.60	0.551	0.515 - 1.425
Gender*Prior MH	0.476	0.163	-2.16	0.031*	0.243 - 0.932
Model χ^2			95.56**		
Pseudo R^2			0.0761		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 73

Logistic regression combined gender employment model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.981	0.010	-1.68	0.092	0.960 - 1.003

Table 73 continued

White	1.240	0.223	1.20	0.231	0.872 - 1.764
Black	0.618	0.102	-2.90	0.004**	0.447 – 0.856
Hispanic	1.231	0.355	0.72	0.471	0.700 - 2.165
Prior Relationship	1.262	0.149	1.96	0.050*	1.000 - 1.591
Education	1.179	0.042	4.66	0.000**	1.100 - 1.263
Emp. Incarceration	1.268	0.195	1.54	0.124	0.937 - 1.715
Age of First Arrest	1.031	0.014	2.22	0.026*	1.004 - 1.059
Prior Perp. of Vio.	1.150	0.186	0.87	0.386	0.838 - 1.579
Inst. Misconduct	0.957	0.074	-0.56	0.573	0.823 - 1.115
Prior Drug Tx.	0.943	0.149	-0.37	0.713	0.692 - 1.286
Prior MH Tx.	0.858	0.122	-1.08	0.281	0.650 - 1.133
Days Incarcerated	1.000	0.000	1.84	0.066	0.999 - 1.000
Emp. Program (Inst.)	1.569	0.270	2.62	0.009**	1.121 - 2.198
Emp. Program (3 Mo)	1.093	0.022	4.42	0.000**	1.051 - 1.138
Gender	0.815	0.214	-0.78	0.438	0.487 - 1.365
Gender*Prior MH	0.485	0.168	-2.09	0.036*	0.246 - 0.955
Model χ^2			114.47**		
Pseudo R^2			0.0911		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 74

Logistic regression combined gender employment model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.985	0.011	-1.38	0.169	0.963 - 1.007
White	1.256	0.221	1.30	0.164	0.890 - 1.774
Black	0.611	0.098	-3.06	0.002**	0.445 - 0.837

Table 74 continued

Hispanic	1.232	0.342	0.75	0.453	0.715 - 2.122
Prior Relationship	1.281	0.163	1.95	0.051	0.999 - 1.646
Education	1.185	0.042	4.76	0.000**	1.105 - 1.270
Emp. Incarceration	1.310	0.203	1.74	0.081	0.967 - 1.774
Age of First Arrest	1.030	0.014	2.15	0.031*	1.003 - 1.059
Prior Perp. of Vio.	1.079	0.175	0.47	0.640	0.785 - 1.481
Inst. Misconduct	0.939	0.076	-0.77	0.440	0.801 - 1.101
Prior Drug Tx.	0.954	0.152	-0.30	0.765	0.698 - 1.303
Prior MH Tx.	0.862	0.128	-1.00	0.316	0.645 - 1.152
Days Incarcerated	1.000	0.000	1.97	0.049*	1.000 - 1.000
Emp. Program (Inst.)	1.494	0.256	2.34	0.019*	1.067 - 2.091
Emp. Program (9 Mo)	1.859	0.368	3.13	0.002**	1.262 - 2.739
Gender	0.844	0.220	-0.65	0.515	0.506 - 1.406
Gender*Prior MH	0.469	0.162	-2.19	0.029*	0.238 - 0.924
Model χ^2			115.23**		
Pseudo R^2			0.0917		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 75

Logistic regression combined gender employment model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.996	0.011	-0.37	0.711	0.975 - 1.017
White	1.262	0.217	1.36	0.175	0.901 - 1.768
Black	0.587	0.093	-3.35	0.001**	0.430 - 0.802
Hispanic	1.235	0.347	0.75	0.453	0.712 - 2.142
Prior Relationship	1.407	0.199	2.41	0.016*	1.066 - 1.856

Table 75 continued

Education	1.181	0.040	4.88	0.000**	1.104 - 1.262
Emp. Incarceration	1.068	0.162	0.43	0.664	0.794 - 1.437
Age of First Arrest	1.023	0.014	1.67	0.094	0.996 - 1.050
Prior Perp. of Vio.	0.922	0.147	-0.51	0.611	0.674 - 1.261
Inst. Misconduct	1.011	0.072	0.16	0.877	0.879 - 1.163
Prior Drug Tx.	0.717	0.110	-2.17	0.030*	0.530 - 0.969
Prior MH Tx.	0.859	0.133	-0.98	0.325	0.634 - 1.163
Days Incarcerated	1.000	0.000	1.71	0.088	0.999 - 1.000
Emp. Program (Inst.)	1.642	0.278	2.93	0.003**	1.179 - 2.289
Gender	0.984	0.249	-0.06	0.949	0.599 - 1.617
Gender*Prior MH	0.434	0.147	-2.46	0.014*	0.223 - 0.844
Model χ^2			101.77**		
Pseudo R^2			0.0791		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 76

Logistic regression combined gender employment model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.995	0.011	-0.49	0.625	0.974 - 1.016
White	1.262	0.221	1.33	0.184	0.895 - 1.780
Black	0.570	0.093	-3.46	0.001**	0.414 - 0.784
Hispanic	1.239	0.359	0.74	0.459	0.703 - 2.185
Prior Relationship	1.367	0.197	2.17	0.030*	1.030 - 1.813
Education	1.182	0.040	4.89	0.000**	1.105 - 1.264
Emp. Incarceration	1.076	0.164	0.48	0.630	0.798 - 1.451
Age of First Arrest	1.021	0.014	1.57	0.117	0.995 - 1.049

Table 76 continued

Prior Perp. of Vio.	0.940	0.151	-0.39	0.699	0.686 - 1.287
Inst. Misconduct	1.021	0.072	0.29	0.768	0.889 - 1.172
Prior Drug Tx.	0.716	0.110	-2.17	0.030*	0.529 - 0.969
Prior MH Tx.	0.839	0.127	-1.16	0.247	0.623 - 1.129
Days Incarcerated	1.000	0.000	1.38	0.169	1.000 - 1.000
Emp. Program (Inst.)	1.598	0.272	2.76	0.006**	1.144 - 2.231
Emp. Program (3 mo)	1.067	0.021	3.26	0.001**	1.026 - 1.109
Gender	0.953	0.242	-0.19	0.849	0.578 - 1.569
Gender*Prior MH	0.440	0.149	-2.42	0.015*	0.226 - 0.855
Model χ^2			112.12**		
Pseudo R^2			0.0871		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 77

Logistic regression combined gender employment model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.994	0.011	-0.52	0.600	0.973 - 1.016
White	1.244	0.229	1.24	0.214	0.881 - 1.755
Black	0.581	0.094	-3.34	0.001**	0.423 - 0.799
Hispanic	1.234	0.358	0.73	0.467	0.699 - 2.180
Prior Relationship	1.371	0.201	2.15	0.031*	1.028 - 1.827
Education	1.181	0.041	4.82	0.000**	1.104 - 1.264
Emp. Incarceration	1.107	0.170	0.66	0.509	0.819 - 1.497
Age of First Arrest	1.020	0.014	1.45	0.148	0.993 - 1.047
Prior Perp. of Vio.	0.913	0.148	-0.56	0.574	0.665 - 1.254
Inst. Misconduct	1.024	0.074	0.33	0.745	0.888 - 1.180

Table 77 continued

Prior Drug Tx.	0.712	0.111	-2.18	0.029*	0.525 - 0.966
Prior MH Tx.	0.856	0.132	-1.00	0.316	0.633 - 1.160
Days Incarcerated	1.000	0.000	1.43	0.153	1.000 - 1.000
Emp. Program (Inst.)	1.572	0.269	2.65	0.008**	1.125 - 2.199
Emp. Program (9 mo)	1.103	0.023	4.75	0.000**	1.059 - 1.149
Gender	0.949	0.243	-0.20	0.839	0.575 - 1.567
Gender*Prior MH	0.427	0.146	-2.49	0.013*	0.218 - 0.835
Model χ^2			123.61**		
Pseudo R^2			0.0960		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 78

Logistic regression combined gender employment model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	0.998	0.011	-0.19	0.846	0.977 - 1.020
White	1.276	0.223	1.39	0.163	0.906 - 1.797
Black	0.550	0.089	-3.68	0.000**	0.400 - 0.757
Hispanic	1.279	0.366	0.86	0.389	0.731 - 2.240
Prior Relationship	1.412	0.203	2.40	0.016*	1.066 - 1.871
Education	1.181	0.040	4.86	0.000**	1.104 - 1.263
Emp. Incarceration	1.048	0.160	0.31	0.757	0.777 - 1.414
Age of First Arrest	1.021	0.014	1.53	0.127	0.994 - 1.048
Prior Perp. of Vio.	0.898	0.144	-0.67	0.504	0.656 - 1.230
Inst. Misconduct	1.001	0.072	0.08	0.934	0.875 - 1.157
Prior Drug Tx.	0.693	0.108	-2.36	0.018*	0.511 - 0.940
Prior MH Tx.	0.845	0.133	-1.07	0.283	0.621 - 1.149

Table 78 continued

Days Incarcerated	1.000	0.000	1.50	0.133	1.000 - 1.000
Emp. Program (Inst.)	1.610	0.274	2.80	0.005**	1.154 - 2.247
Emp. Program(15mo)	2.017	0.489	2.90	0.004**	1.255 - 3.243
Gender	0.936	0.239	-0.26	0.795	0.568 - 1.543
Gender*Prior MH	0.440	0.151	-2.40	0.017*	0.225 - 0.861
Model χ^2			113.15**		
Pseudo R^2			0.0879		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Combined Gender Re-arrest Models

Table 79

Logistic regression combined gender re-arrest model - Three months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.015	0.009	1.64	0.101	0.997 - 1.033
White	0.750	0.141	-1.53	0.127	0.518 - 1.085
Black	1.283	0.224	1.43	0.153	0.912 - 1.806
Hispanic	1.375	0.375	1.17	0.243	0.806 - 2.346
Prior Relationship	0.996	0.094	-0.04	0.967	0.828 - 1.199
Education	0.931	0.027	-2.43	0.015*	0.880 - 0.986
Emp. Incarceration	0.839	0.108	-1.37	0.171	0.653 - 1.079
Age of First Arrest	0.964	0.011	-3.19	0.001**	0.943 - 0.986
Prior Perp. of Vio.	0.953	0.131	-0.35	0.726	0.728 - 1.247
Inst. Misconduct	1.001	0.068	0.15	0.882	0.886 - 1.152
Prior Drug Tx.	1.065	0.128	0.52	0.600	0.841 - 1.349
Prior MH Tx.	1.188	0.152	1.35	0.178	0.924 - 1.527
Days Incarcerated	1.000	0.000	-3.28	0.001**	0.999 - 1.000
Emp. Program (Inst.)	0.903	0.111	-0.83	0.408	0.709 - 1.150
Gender	0.140	0.128	-2.15	0.031*	0.024 - 0.839
Gender*Education	1.152	0.085	1.92	0.055	0.997 - 1.332
Model χ^2			62.67**		
Pseudo R^2			0.0363		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 80

Logistic regression combined gender re-arrest model - Three months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.016	0.009	1.76	0.078	0.998 - 1.035
White	0.741	0.154	-1.44	0.150	0.493 - 1.114
Black	1.306	0.254	1.38	0.169	0.893 - 1.912
Hispanic	1.403	0.423	1.12	0.262	0.777 - 2.533
Prior Relationship	1.036	0.101	0.37	0.715	0.856 - 1.256
Education	0.940	0.028	-2.10	0.036*	0.887 - 0.996
Emp. Incarceration	0.864	0.112	-1.13	0.260	0.670 - 1.114
Age of First Arrest	0.966	0.011	-2.98	0.003**	0.944 - 0.988
Prior Perp. of Vio.	0.956	0.133	-0.33	0.744	0.728 - 1.255
Inst. Misconduct	0.997	0.066	-0.04	0.968	0.876 - 1.136
Prior Drug Tx.	1.116	0.137	0.90	0.369	0.878 - 1.419
Prior MH Tx.	1.201	0.152	1.44	0.149	0.936 - 1.540
Days Incarcerated	1.000	0.000	-2.92	0.004**	1.000 - 1.000
Emp. Program (Inst.)	0.930	0.120	-0.56	0.574	0.722 - 1.198
Emp. Program (3 mo)	0.914	0.014	-5.81	0.000**	0.887 - 0.924
Gender	0.168	0.156	-1.92	0.055	0.027 - 1.038
Gender*Education	1.142	0.086	1.76	0.079	0.984 - 1.323
Model χ^2			96.67**		
Pseudo R^2			0.0560		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 81

Logistic regression combined gender re-arrest model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.008	0.007	1.04	0.297	0.993 - 1.022
White	1.040	0.197	0.21	0.837	0.717 - 1.508
Black	1.587	0.291	2.52	0.012*	1.108 - 2.272
Hispanic	1.278	0.365	0.86	0.390	0.730 - 2.237
Prior Relationship	0.937	0.071	-0.86	0.389	0.808 - 1.087
Education	0.910	0.022	-3.89	0.000**	0.867 - 0.954
Emp. Incarceration	0.857	0.085	-1.56	0.118	0.706 - 1.040
Age of First Arrest	0.966	0.009	-3.71	0.000**	0.949 - 0.984
Prior Perp. of Vio.	1.172	0.125	1.49	0.137	0.951 - 1.444
Inst. Misconduct	1.077	0.057	1.40	0.161	0.971 - 1.194
Prior Drug Tx.	0.998	0.093	-0.02	0.981	0.831 - 1.197
Prior MH Tx.	1.078	0.090	0.90	0.368	0.916 - 1.269
Days Incarcerated	0.999	0.000	-4.21	0.000**	1.000 - 1.000
Emp. Program (Inst.)	0.961	0.092	-0.42	0.676	0.797 - 1.159
Gender	0.378	0.256	-1.44	0.150	0.100 - 1.424
Gender*Education	1.054	0.058	0.95	0.342	0.945 - 1.175
Model χ^2			108.23**		
Pseudo R^2			0.0399		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 82

Logistic regression combined gender re-arrest model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.009	0.007	1.18	0.239	0.994 - 1.024

Table 82 continued

White	1.040	0.203	0.20	0.841	0.709 - 1.526
Black	1.648	0.312	2.64	0.008**	1.137 - 2.388
Hispanic	1.348	0.397	1.02	0.310	0.757 - 2.400
Prior Relationship	0.975	0.074	-0.33	0.744	0.840 - 1.132
Education	0.915	0.023	-3.55	0.000**	0.872 - 0.961
Emp. Incarceration	0.881	0.089	-1.26	0.206	0.723 - 1.072
Age of First Arrest	0.968	0.009	-3.46	0.001**	0.950 - 0.986
Prior Perp. of Vio.	1.186	0.128	1.57	0.116	0.959 - 1.466
Inst. Misconduct	1.064	0.056	1.18	0.238	0.960 - 1.179
Prior Drug Tx.	1.043	0.098	0.45	0.653	0.867 - 1.255
Prior MH Tx.	1.098	0.092	1.12	0.263	0.932 - 1.293
Days Incarcerated	0.999	0.000	-3.81	0.000**	1.000 - 1.000
Emp. Program (Inst.)	0.996	0.098	-0.04	0.967	0.821 - 1.208
Emp. Program (3 mo)	0.915	0.011	-7.48	0.000**	0.893 - 0.936
Gender	0.432	0.297	-1.22	0.221	0.112 - 1.660
Gender*Education	1.047	0.060	0.82	0.413	0.938 - 1.169
Model χ^2			159.78**		
Pseudo R^2			0.0617		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 83

Logistic regression combined gender re-arrest model - Nine months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.008	0.007	1.05	0.292	0.993 - 1.023
White	1.075	0.210	0.37	0.710	0.733 - 1.578
Black	1.632	0.308	2.59	0.010**	1.126 - 2.364

Table 83 continued

Hispanic	1.362	0.400	1.05	0.293	0.765 - 2.424
Prior Relationship	0.965	0.074	-0.47	0.637	0.830 - 1.120
Education	0.916	0.023	-3.51	0.000**	0.873 - 0.962
Emp. Incarceration	0.851	0.086	-1.60	0.110	0.699 - 1.037
Age of First Arrest	0.969	0.009	-3.36	0.001**	0.951 - 0.987
Prior Perp. of Vio.	1.179	0.128	1.52	0.128	0.954 - 1.458
Inst. Misconduct	1.056	0.056	1.03	0.305	0.952 - 1.171
Prior Drug Tx.	1.027	0.097	0.29	0.775	0.854 - 1.236
Prior MH Tx.	1.070	0.090	0.80	0.424	0.907 - 1.262
Days Incarcerated	0.999	0.000	-3.91	0.000**	1.000 - 1.000
Emp. Program (Inst.)	0.012	0.098	0.12	0.901	0.837 - 1.224
Emp. Program (9 mo)	0.916	0.011	-7.38	0.000**	0.894 - 0.937
Gender	0.438	0.300	-1.21	0.228	0.114 - 1.677
Gender*Education	1.046	0.059	0.80	0.424	0.937 - 1.168
Model χ^2			158.16**		
Pseudo R^2			0.0611		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 84

Logistic regression combined gender re-arrest model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.002	0.007	0.24	0.809	0.987 - 1.016
White	0.857	0.089	-1 .49	0.137	0.700 - 1.050
Black	1.397	0.135	3.47	0.001**	1.157 - 1.688
Hispanic	0.913	0.148	-0.56	0.575	0.664 - 1.255
Prior Relationship	0.894	0.074	-1.35	0.178	0.760 - 1.052

Table 84 continued

Education	0.915	0.023	-3.62	0.000**	0.872 - 0.960
Emp. Incarceration	0.906	0.089	-1.00	0.316	0.747 - 1.099
Age of First Arrest	0.970	0.009	-3.29	0.001**	0.953 - 0.989
Prior Perp. of Vio.	1.376	0.145	3.04	0.002**	1.120 - 1.690
Inst. Misconduct	1.072	0.054	1.37	0.170	0.971 - 1.184
Prior Drug Tx.	0.999	0.093	-0.01	0.989	0.832 - 1.199
Prior MH Tx.	1.074	0.086	0.89	0.374	0.918 - 1.256
Days Incarcerated	0.999	0.000	-5.30	0.000**	1.000 - 1.000
Emp. Program (Inst.)	1.033	0.098	0.34	0.730	0.858 - 1.244
Gender	0.516	0.341	-1.00	0.317	0.141 - 1.884
Gender*Education	1.019	0.055	0.35	0.725	0.917 - 1.133
Model χ^2			124.52**		
Pseudo R^2			0.0470		

Note: * $p < .05$, ** $p < .01$. MH = Mental Health.

Table 85

Logistic regression combined gender re-arrest model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.002	0.007	0.33	0.741	0.988 - 1.017
White	0.831	0.087	-1 .76	0.078	0.677 - 1.021
Black	1.403	0.137	3.48	0.001**	1.159 - 1.699
Hispanic	0.914	0.150	-0.54	0.586	0.663 - 1.262
Prior Relationship	0.930	0.077	-0.88	0.377	0.791 - 1.093
Education	0.919	0.023	-3.36	0.001**	0.875 - 0.966
Emp. Incarceration	0.930	0.093	-0.73	0.468	0.765 - 1.131
Age of First Arrest	0.973	0.009	-3.01	0.003**	0.955 - 0.990

Table 85 continued

Prior Perp. of Vio.	1.398	0.149	3.15	0.002**	1.134 - 1.721
Inst. Misconduct	1.062	0.054	1.18	0.239	0.961 - 1.174
Prior Drug Tx.	1.039	0.098	0.41	0.681	0.864 - 1.250
Prior MH Tx.	1.090	0.088	1.07	0.283	0.931 - 1.277
Days Incarcerated	1.000	0.000	-4.98	0.000**	1.000 - 1.000
Emp. Program (Inst.)	1.070	0.105	0.70	0.486	0.884 - 1.296
Emp. Program (3 mo)	0.922	0.011	-6.76	0.000**	0.901 - 0.944
Gender	0.575	0.384	-0.83	0.407	0.155 - 2.127
Gender*Education	1.014	0.055	0.25	0.800	0.911 - 1.128
Model χ^2			171.02**		
Pseudo R^2			0.0645		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 86

Logistic regression combined gender re-arrest model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.002	0.007	0.22	0.829	0.987 - 1.016
White	0.857	0.090	-1 .46	0.144	0.697 - 1.054
Black	1.396	0.137	3.39	0.001**	1.151 - 1.692
Hispanic	0.927	0.153	-0.46	0.648	0.670 - 1.283
Prior Relationship	0.924	0.077	-0.95	0.344	0.785 - 1.088
Education	0.921	0.023	-3.27	0.001**	0.876 - 0.967
Emp. Incarceration	0.898	0.090	-1.07	0.284	0.738 - 1.093
Age of First Arrest	0.974	0.009	-2.87	0.004**	0.956 - 0.992
Prior Perp. of Vio.	1.395	0.149	3.12	0.002**	1.131 - 1.720
Inst. Misconduct	1.050	0.054	0.96	0.336	0.950 - 1.161

Table 86 continued

Prior Drug Tx.	1.029	0.098	0.30	0.763	0.854 - 1.239
Prior MH Tx.	1.066	0.086	0.79	0.427	0.911 - 1.248
Days Incarcerated	1.000	0.000	-5.02	0.000**	1.000 - 1.000
Emp. Program (Inst.)	1.098	0.106	0.97	0.331	0.909 - 1.328
Emp. Program (9 mo)	0.908	0.012	-7.97	0.000**	0.867 - 0.930
Gender	0.600	0.404	-0.76	0.449	0.160 - 2.249
Gender*Education	1.012	0.055	0.19	0.846	0.908 - 1.125
Model χ^2			189.51**		
Pseudo R^2			0.0715		

Note: * p < .05, ** p < .01. MH = Mental Health.

Table 87

Logistic regression combined gender re-arrest model - Fifteen months

Variable	Odds Ratio	Std. Err.	z	p-value	Conf. Interval
Age	1.003	0.007	0.44	0.658	0.989 - 1.018
White	0.883	0.094	-1 .17	0.243	0.718 - 1.088
Black	1.419	0.140	3.54	0.000**	1.169 - 1.723
Hispanic	0.885	0.147	-0.73	0.464	0.639 - 1.226
Prior Relationship	0.923	0.078	-0.94	0.345	0.782 - 1.090
Education	0.920	0.023	-3.30	0.001**	0.876 - 0.967
Emp. Incarceration	0.922	0.093	-0.81	0.420	0.757 - 1.123
Age of First Arrest	0.974	0.009	-2.85	0.004**	0.956 - 0.992
Prior Perp. of Vio.	1.377	0.148	2.98	0.003**	1.115 - 1.699
Inst. Misconduct	1.063	0.055	1.18	0.240	0.960 - 1.177
Prior Drug Tx.	1.029	0.098	0.30	0.766	0.853 - 1.241
Prior MH Tx.	1.088	0.089	1.03	0.301	0.927 - 1.277

Table 87 continued

Days Incarcerated	1.000	0.000	-5.02	0.000**	1.000 - 1.000
Emp. Program (Inst.)	1.044	0.100	0.45	0.650	0.865 - 1.261
Emp. Program(15mo)	0.900	0.010	-8.86	0.000**	0.880 - 0.921
Gender	0.597	0.403	-0.76	0.444	0.159 - 2.239
Gender*Education	1.015	0.056	0.27	0.783	0.912 - 1.130
Model χ^2			205.13**		
Pseudo R^2			0.0774		

Note: * p < .05, ** p < .01. MH = Mental Health.

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