

PREDICTORS OF DRUG COURT SUCCESS IN A SMALL CITY DRUG COURT

A Thesis  
Submitted to the Graduate Faculty  
of the  
North Dakota State University  
of Agriculture and Applied Science

By

Melinda Sue Fangman

In Partial Fulfillment  
for the Degree of  
MASTER OF SCIENCE

Major Department:  
Criminal Justice and Political Science

April 2013

Fargo, North Dakota

North Dakota State University  
Graduate School

---

**Title**

Predictors of Drug Court Success in a Small City Drug Court

---

**By**

Melinda Sue Fangman

---

The Supervisory Committee certifies that this *disquisition* complies with North Dakota State University's regulations and meets the accepted standards for the degree of

**MASTER OF SCIENCE**

SUPERVISORY COMMITTEE:

Dr. Sarah Browning  
Chair

---

Dr. Kevin Thompson

---

Dr. Kjersten Nelson

---

Dr. Rhonda Magel

---

Approved:

April 3, 2013  
Date

---

Dr. Gary Totten  
Department Chair

---

## **ABSTRACT**

This study examines the factors related to completion outcomes of the East Central Judicial District Drug Court (ECJDDC). The ECJDDC has a 71% graduation rate which far exceeds the national average of approximately 40-45%. The dataset included information on 250 participants who entered the drug court from 2003-2011. Factors included in the analysis include those related to living situation, family situation, socioeconomic status, veteran status, current offense, and prior criminal history in addition to sex, race, and age. Logistic regression determined that the strongest predictors of graduation relate to education, income, employment, and living situation. Policy implications, practice, and future research are discussed with respect to the current results.

## ACKNOWLEDGEMENTS

First and foremost, I would like to thank Dr. Sarah Browning. Thank you for asking me to assist in this project with no intention of me using some of the data for myself. Thank you for agreeing to allow me to use this data for my thesis. Finally, thank you for being so patient with me during this entire process. You have given me valuable feedback throughout the process and taught me a lot about research, writing, and myself.

I would also like to thank my committee members for their dedication and assistance. Thank you, Dr. Kevin Thompson, as your expertise in drug court was invaluable. Thank you, Dr. Kjersten Nelson, for your insight. Some of the comments you provided have given me some different ideas. Thank you, Dr. Rhonda Magel, for providing your statistical expertise. All of you have given me invaluable lessons in this process.

I would like to thank the North Dakota Department of Corrections and Rehabilitation and the North Dakota Bureau of Criminal Investigation for their assistance in data collection; particularly to John, Dave, and Jen for patiently answering all of my questions and their dedication to the East Central Judicial District Drug Court. The residents of Cass County and I are indebted to you for your efforts.

Thank you, Kelsey and McKenzie, for the support and help.

## **DEDICATION**

I would like to dedicate this thesis to my parents, Steve and Sue, for all of their support through this process. Your help and support means a great deal to me. I love you.

More importantly I dedicate this finished work to my daughter, Leilah Jeanenne. You are my inspiration to keep on pushing. I love you more than you will ever understand.

# TABLE OF CONTENTS

ABSTRACT.....	iii
ACKNOWLEDGEMENTS.....	iv
DEDICATION.....	v
LIST OF TABLES.....	viii
INTRODUCTION.....	1
History of Drug Courts.....	1
Definition and the Ten Key Components of Drug Court.....	2
General Impact of Drug Courts.....	5
LITERATURE REVIEW.....	6
Age of Participant.....	6
Race of Participant.....	6
Sex of Participant.....	7
Education and Employment.....	8
Drug of Choice and Referral Offense Type.....	9
Judges.....	11
LSI-R Scores.....	12
Family and Living Status.....	13
Veteran Status.....	13
METHODOLOGY.....	15

The Sample .....	15
Data Collection .....	18
Variables .....	19
RESULTS .....	22
Descriptive Statistics.....	22
Bivariate Analysis.....	24
Multivariate Analysis.....	26
DISCUSSION.....	29
REFERENCES .....	36

## LIST OF TABLES

<u>Table</u>	<u>Page</u>
1:Participant Demographic Information: Frequencies (N=250).....	23
2:Bivariate Analysis of Drug Court Graduation .....	25
3:Logistic Regression of Drug Court Graduation, Reduced Model .....	27



## **INTRODUCTION**

This study examines the East Central Judicial District Drug Court (ECJDDC) in Cass County, North Dakota. This study is focusing specifically on the graduation rate of this court and the distinguishing characteristics of those graduating from this particular court. Policy recommendations and implications for future research regarding graduation rates will also be made.

### **History of Drug Courts**

The 1980s saw the beginnings of the “War on Drugs”. In this decade, the number of arrests for drug related crimes more than doubled from 580,900 in 1980 to 1,361,700 in 1989 (Bureau of Justice Statistics, 1990). The BJS also reports that in 1989 twice as many were arrested for possession of narcotics as for sale/manufacture of narcotics. The number of people in prison increased as well. In the same decade, those arrested for drug crimes occupied 22% of federal prison space in 1980 (Bureau of Justice Statistics, 1990). 48% of federal prison space was being occupied by drug offenders in 1989 (Bureau of Justice Statistics, 1990).

The first drug court appeared in 1989 in Miami as an experiment to reduce the number of drug involved offenders that were later re-arrested. Nonviolent drug offenders were given treatment, but there was still supervision of the offenders (Sechrest and Shichor, 2001). The combination of the control and treatment made drug courts an attractive option when compared to incarceration. Sechrest and Shichor (2001) mentioned that cost savings to the criminal justice system versus incarceration added to the attractiveness of drug courts. A few early evaluations of drug courts confirmed that drug courts contributed to lower recidivism among drug court graduates (Sechrest and Shichor, 2001).

As of June 2012, there were 2,734 courts operating in the United States (National Association of Drug Court Professionals, 2012). While originally designed to serve a general adult population of drug offenders, specialized courts have been designed to serve other populations. There has been an emergence of juvenile drug courts, family drug courts, Tribal Courts, Reentry Drug Courts, and Campus Drug Courts (Huddleston and Marlowe, 2011). Within the last five years, there has been an emergence of Veterans Courts as well (Huddleston and Marlowe, 2011). Veterans Courts focus on the offense as well as the unique challenges a veteran faces such as post-traumatic stress disorder.

### **Definition and the Ten Key Components of Drug Court**

Huddleston and Marlowe (2011) offered a conceptual definition of drug court:

“A Drug Court is a special docket or calendar within the court system that is designed to treat addicted individuals and give them the tools they need to change their lives. The Drug Court judge serves as the leader of an inter-disciplinary team of professionals, which often includes a court coordinator, prosecuting attorney, defense attorney, treatment providers, case managers, probation officers and representatives from law enforcement.” (7)

Drug court is a form of intensive supervision probation which means the offender avoids incarceration in exchange for supervision within the community. Drug courts have a judge, prosecutor, defense attorney, treatment providers, and probation officers that work together to help a drug offender get the treatment and resources that are needed to help the offender eliminate their drug or alcohol dependent behavior. Some drug courts offer GED classes and employment assistance in addition to drug treatment and counseling.

In 1997, the Drug Court Standards Committee gave ten key standards for drug courts. The first is integrating the court system with treatment professionals to service those with drug

and alcohol addiction. The committee also pointed out that “the criminal justice system has the unique ability to influence a person shortly after a significant triggering event such as arrest, and thus, persuade or compel that person to enter and remain in treatment (1).” This standard also recommended three phases for drug court: stabilization, intensive treatment, and transition (Drug Court Standards Committee, 1997).

The second key component gave guidance to the conduct of the prosecution and defense. Both sides need to work together to ensure that the participant in drug court is being adequately served (Drug Court Standards Committee, 1997). However, even with a less adversarial nature, prosecutors need to do their due diligence of ensuring public safety by checking that clients are a right fit for drug court. This tied into the third component set out by the standards committee which stated that participants be offered the opportunity and enter drug court as close to their arrest date as possible. Because of the traumatic nature of arrest, the committee suggests that this is the critical period for getting a person into treatment (Drug Court Standards Committee, 1997).

Components four, five, six, and seven discussed the drug court participants’ experience within the court. Component four stressed the need for access to a range of treatment for drugs and alcohol as well as any other needs (Drug Court Standards Committee, 1997). Co-occurring needs can include mental health, medical needs, homelessness, education, job training, and family counseling (Drug Court Standards Committee, 1997). Key component number five stressed that frequent drug and alcohol testing needs to be done to ensure the participants are maintaining abstinence from drugs and/or alcohol (Drug Court Standards Committee, 1997). Having a strategy to ensure compliance was key component number seven. The Drug Court Standards Committee (1997) pointed out that participants are likely to relapse and strategies need to be put into action by all members of the working group to deal with relapses. The committee

did not advocate for terminating clients for their first relapse (Drug Court Standards Committee, 1997). While abstinence from drugs and alcohol should be the primary indicator of success, the drug court team should be mindful of recognizing other successes such as not missing treatment or completing other requirements like a GED (Drug Court Standards Committee, 1997). Judge's role as the leader of this coordinated effort was discussed in component number seven. They are the liaison among the courtroom working group, the treatment working group and the offender (Drug Court Standards Committee, 1997). They should also provide the guidance and be role model that the participant needs (Drug Court Standards Committee, 1997).

Monitoring the progress and effectiveness of the program was recommended in component number eight. The individual drug courts should have clearly defined goals and need to be flexible to make changes to suit the needs of the public and clients they are trying to serve (Drug Court Standards Committee, 1997). These goals need to be measurable in order to be held accountable and evaluations should be done to make sure that goals are being met (Drug Court Standards Committee, 1997). To ensure that goals and performance are adequate and being met, drug court staff should receive training prior to drug court and receive continued education, which is component number nine (Drug Court Standards Committee, 1997). The committee did not lay out any formal standards, but suggested that the criminal justice working group understand the treatment and vice versa (Drug Court Standards Committee, 1997).

The final component from the Drug Court Standards Committee was making partnerships within the local community to generate support. Partnerships with treatment providers, private organizations, public organizations, and other drug courts are important (Drug Court Standards Committee, 1997). These groups may be able to help an individual drug court provide more services (Drug Court Standards Committee, 1997).

## **General Impact of Drug Courts**

A lot of resources are put into a participant in drug court, but research has shown them to be cost effective. The Court Standards Committee (1997) estimated that for every \$1 put into drug court, the return is \$7. There are other estimates of the cost benefit for drug court. For every \$1 spent on a drug court program, there are \$2.21 of benefits to the criminal justice system (Huddleston and Marlowe, 2011). When the drug court focuses on more high risk offenders (as measured by LSI scores), that benefit of drug court jumps to \$3.36 (Huddleston and Marlowe, 2011).

In addition to being cost effective, drug courts do make an impact. Belenko (2001) reported that, on average, 47% of participants completed drug court, but graduation rates for individual courts ranged from 36-60%. In a national survey that included all 54 states, territories, and commonwealths, Huddleston and Marlowe (2011) found the graduation rate in 2008 was about 53% with rates ranging from 40-65%. For those who complete a drug court program, there is significant reduction (10-15% on average) in recidivism (Marlowe 2010).

In conclusion, drug courts are a form of intensive supervision probation that seeks to provide the participant with treatment. The participant could also receive education and/or employment assistance, if needed. The next chapter will present research about specific variables that affect graduation in drug court.

## LITERATURE REVIEW

### **Age of Participant**

Within the field of criminology, there is the notion of aging out of crime. Put simply, the majority of criminals will naturally exit out of criminality as they age (Hirschi and Gottfredson, 1983). There is no consensus as to why this occurs, however. There have been mixed results when examining the effect of age on drug court completion. Schiff and Terry (1997) and Roll, Pendergast, Richardson, Burdon, and Ramirez (2005) did not find that age was a significant predictor of drug court graduation. Hickert, Boyle, and Tollefsen (2009) found that younger participants were more likely to drop out of drug court. One of the recommendations that the authors gave was more the development of strategies to retain younger drug court participants (Hickert et al, 2009).

### **Race of Participant**

Many studies have concluded that whites have a higher graduation rate than do non-whites (Schiff and Terry, 1997; Belenko, 2001; Hartley and Phillips, 2001; Sechrest and Shichor, 2001). Hartley and Phillips (2001) found that non-whites are less likely to graduate from drug court than are whites in a mid-Atlantic drug court and Sechrest and Shichor (2001) found the same in a California drug court. Butzin, Saum, and Scarpitti (2002) found that whites have a higher graduation rate in the Delaware drug court when compared to African-Americans; however, race was not a significant factor when predicting completion of the program after controlling for other variables. However, other studies found either insignificant results or results indicating higher graduation rates for minorities. Roll et al. (2005) did not find race to be a significant predictor of completion in a southern California drug court. Vito and Tewksburg (1998) found that African-Americans were more likely to graduate in a Kentucky drug court

Belenko's 2001 meta-analysis also reported that whites have higher graduation rates than do non-whites, but there is no consensus as to why. Is there a true racial bias in favor of whites or are other factors at play? Education and employment are thought to be two explanations. Those with at least a high school education are more likely to graduate (Schiff and Terry, 1997; Sechrest and Shichor, 2001; Butzin et al., 2002). In addition, Butzin et al. (2002) found that African-Americans in their sample had a higher rate of dropping out of high school. Besides education, employment is thought to be another factor in graduation and whites had higher graduation rates because they had higher employment rates (Belenko 2001; Butzin et al., 2002).

The type of drug that African-Americans are more likely to use may be an underlying factor. Two evaluations in the Belenko (2001) meta-analysis found that non-whites were more likely to use cocaine or heroin. Dannerbeck, Harris, Sundet, and Lloyd (2006) postulated that using cocaine is a response to social conditions and racism. Therefore, drug use may be motivated by social conditions and racism for some African-Americans.

However, Hartley and Phillips (2001) suggest that discrimination may play a role in termination decisions. Payton and Gossweiler (1999) suggested that one of the biggest problems for drug courts is the lack of specialized programming for racial and ethnic minorities, women, and the mentally ill. Programming would be geared to specifically to those groups rather than a large group mixed setting with focus on the issues that would affect the specialized group.

### **Sex of Participant**

There is mixed literature on the graduation rates of women. Females had lower graduation rates than did males in one New York drug court evaluation, but had higher rates of graduation than males in evaluations in Maine and Iowa (Belenko, 2001). Courts with lower female graduation rates may be due to factors that the drug court may not be addressing since

drug courts were primarily designed for men, and women with substance abuse concerns may have other issues such as dependent children, history of sexual assault, history of abuse, and psychiatric disorders such as depression or eating disorders (Fischer & Geiger, 2011; Hartman, Johnson Listwan, Koetzle Shaffer, 2007). Payton and Gossweiler (1999) reported that only 32% of the 212 drug courts responding to their survey offered childcare. However, some research has shown that females who do graduate have lower recidivism rates compared to male graduates. Hartman et al (2007) found that drug court reduced the number of new court filings and new court filings involving drugs for female methamphetamine users when compared to male methamphetamine users.

### **Education and Employment**

Studies have found that those without a high school diploma were less likely to graduate from drug court (Schiff and Terry, 1997; Sechrest and Shichor, 2001; Butzin et al., 2002). Many studies that examine the effect of education restrict the comparison to high school graduates versus non-graduates. Schiff and Terry (1997) were able to determine that the odds of successfully completing drug court increased with education beyond high school. While Sechrest and Shichor (2001) ultimately did not use continued education as a variable, the authors noted that 18.2% of removals and 43.1% of graduates regularly attended classes at an education center or community center while participating in drug court. It is possible the additional education during the program is an indicator of motivation.

Employment is one indicator of stability. Hartley and Phillips (2001) found that employment was a significant predictor of program completion if the participant entered drug court already employed or found employment shortly after entry. In Sechrest and Shichor's (2001) sample, 84.3% of all participants were unemployed. 90% of the removals from drug



court in that particular study were unemployed. In Sechrest and Shichor's 2001 study 79.5% of the removals were receiving public financial support versus 60.3% of the graduates, which was a statistically significant difference. Roll et al. (2005) also found that employment was a significant predictor of successful drug court completion.

However, Leukefeld, Smiley McDonald, Staton, and Mateyoke-Scrivener (2004) examined employment as a protective factor against drug use, criminality, and service utilization. The authors found few associations between employment and drug use or criminality. However, substance users that were employed less than full time were more likely to use services for psychological and emotional problems. Because there were no other differences, the authors suggested that employment is not as important as many drug court practitioners believe it to be.

### **Drug of Choice and Referral Offense Type**

The type of drug preferred by the majority of participants is different depending on the setting of the drug court. According to Huddleston and Marlowe's 2011 meta-analysis, participants of urban drug courts report cocaine/crack (27%), alcohol (27%), marijuana (22%), and methamphetamine (16%) as their primary substance. The primary substances of suburban courts are alcohol (33%), marijuana (20%), cocaine/crack (18%), and methamphetamine (18%). Finally, rural courts report the primary drug to be methamphetamine (30%) or alcohol (30%). Koetzle Shaffer, Hartman, Johnson Listwan, Howell, and Latessa (2011) found that drug of choice was significant in graduation in the bivariate analysis, but loses its significance in the multivariate analysis in the Akron, Ohio drug court. In a different study, dropouts were more likely to report cocaine as their most troubling substance compared to those participants that completed (Hickert et al., 2009). Sechrest and Shichor (2001) reported that removals from drug

court have more failed urine tests than graduates; the authors suggested that means that there was marijuana use while in the program.

Hickert et al. (2009) found that a higher percentage of graduates of the Salt Lake County drug court report methamphetamine being their most problematic substance. Methamphetamine offenses are the third most common drug offense by participants in the ECJDDC behind marijuana offenses and alcohol. Marinelli-Casey, Gonzales, Hillhouse, Ang, Zweben, Cohen, Fulton Hora, Rawson (2008) found that methamphetamine users stay in treatment longer, have more drug free urine tests, and are more likely to complete treatment as part of a drug court than with traditional outpatient treatment with no criminal justice supervision. Those who participate in drug court were also more likely to reduce their drug use after the program. Bouffard and Richardson (2007) found that a weighted sample of methamphetamine offenders who completed drug court were less likely to recidivate when compared to traditionally adjudicated methamphetamine offenders. In fact, methamphetamine offender graduates reduced their likelihood of re-arrest by 66% when compared to methamphetamine offenders who followed and completed the traditional prison and parole track.

Crack cocaine is typically the primary drug used by urban drug court participants; however, this is not true in the ECJDDC as there are very few participants with cocaine offenses. Researchers have found that offenders who used crack were less likely to complete drug court than were non crack users (Schiff and Terry, 1997; Butzin et al., 2002). In addition, Hickert et al. (2009) found that dropouts in the Salt Lake County drug court had a significantly higher percentage of reporting that cocaine was their most problematic substance. One reason given for the seemingly lack of success for crack users is drug courts may not be able to provide the specialized treatment in order to help cocaine users (Dannerbeck et al 2006).

Prior literature is scant when looking at the offense type e.g. delivery or ingesting. The focus in the literature is usually on the drug of choice of the participant. The only instance when this is not true is when DUI offenders are the focus. Bouffard and Richardson (2007) and Bouffard, Richardson, and Franklin (2010) examined the effects of hybrid drug courts. Hybrid drug courts are designed to allow both drug and DUI/DWI offenders. Bouffard et al. (2010) included the ECJDDC with the focus on the DWI offenders from the drug court. The authors found that there was no statistical difference in recidivism for the drug court group of DUI offenders and the parolee comparison group (Bouffard and Richardson, 2007; Bouffard et al, 2010).

## **Judges**

The Drug Court Standards Committee (1997) listed judge-participant interaction as its eighth component to a successful drug court. It stated that:

“Drug courts require judges to step beyond their traditionally independent and objective arbiter roles and develop new expertise. The structure of the drug court allows for early and frequent judicial intervention. A drug court judge must be prepared to encourage appropriate behavior and to discourage and penalize inappropriate behavior. A drug court judge is knowledgeable about treatment methods and their limitations.” (15)

Rossman and Zweig (2013) found some common characteristics of judges in the most effective drug courts in the country. First, judges saw their participants at least twice a month. Also, the best judges were the ones that were firm, but fair and offered higher levels praise.

Given the important role judges should play, there is very little research about the role of judges in completion of the program. Saum, Scarpitti, Butzin, Perez, Jennings, and Gray (2002) examined participants’ opinions about judges and found that graduates viewed their experience with their judge more favorably than did non-graduates. However, the opinions were made after

the participant graduated or was terminated from the program. Non-graduates were more likely to not understand what is happening in the courtroom, believe the judge was biased against them in some way, or not view praise from the judge as helpful. Despite these complaints from non-graduates, they did mention that they would have liked more time with the judge. The authors suggest that non-graduates have less stability in their lives and fewer positive bonds to societal institutions and the judge may serve as that authority figure that the participants need; therefore, the judge could also be seen as therapeutic for the non-graduates. Marlowe, Festinger, and Lee (2002) found that offender-judge contact should be based on offender risk: high risk offenders need more judicial supervision to do well; whereas, low risk offenders need less contact with the

### **LSI-R Scores**

The Level of Service Inventory- Revised is a measurement tool commonly used to aid criminal justice practitioners in determining the supervision and treatment needs of an offender (Andrews and Bonta, 1995). Any trained practitioner can administer the scale to an offender. Items included in the fifty-four question scale are criminal history, education/employment, financial status, family and marital status, living accommodations, leisure and recreation, companions/peers, substance abuse, emotional/personal characteristics, and attitudes/orientation. Scores range from 0-54 with 0-13 Low Risk; 14-23 Low-Moderate; 24-33 Moderate; 34-40 Moderate-High; 41-54 High.

The LSI-R has a high predictive ability or has the ability to determine if the offender is likely to recidivate. There has been some controversy in literature whether LSI-R predictive ability holds true for females, but studies have shown that there is high predictive ability for females (Andrews and Bonta, 1995; Smith, Cullen, and Latessa, 2009). However, there have not been many studies that have used LSI-R scores as a predictor of drug court success. There is a

possible reason the LSI-R is not used in studies. Many of the factors examined in drug court completion are contained in the LSI-R; therefore, using LSI-R scores would subject the researcher to having to examine and fix multi-collinearity issues in their analysis between the LSI-R score and the individual factors.

Even without the use of LSI-R scores in research, risk is an important factor. Belenko's 2001 meta-analysis suggested that drug courts appear to be targeting midrange risk level offenders. Koetzle Shaffer et al. (2011) found that the LSI-R score was the only variable that predicted recidivism in their sample. In their sample, odds of program completion decreased by 6% for every one point increase in score (Koetzle Shaffer et al, 2011).

### **Family and Living Status**

Parenthood is often thought of as an indicator of stability; however, Sechrest and Shichor (2001) did not find a difference between graduates and non-graduates in the number of children participants had. Marriage is also thought to be an indicator of stability and being married was also not a significant predictor of graduation in Schiff and Terry's 1997 evaluation. In addition, Butzin et al. (2002) and Roll et al. (2005) did not find any significant difference in marriage rates between graduates and non-graduates. Similarly, marital status, living situation, and number of children were not significant factors for graduation in Hickert et al's 2009 evaluation of the Salt Lake County Adult Drug Court.

### **Veteran Status**

Huddleston and Marlowe (2011) reported that veteran status is becoming increasingly important factor in drug courts. There is even an emerging trend of Veterans Treatment Courts that only cater to veterans and the special challenges that veterans bring. The first Veterans Treatment Court was seen in 2008; and by 2009, nineteen courts for veterans were in operation

(Huddleston and Marlowe, 2011). The authors point out that veterans have their own unique needs that go beyond substance abuse and include psychological disorders and/or traumatic brain injuries. Veterans Courts often work with federal and state level Veterans Affairs Administration to help with employment and homelessness issues. However, no studies were found that examined veteran status in any type of drug court whether general or for veterans.

This chapter discussed variables that affect successful completion of drug court. Age, race, and gender have been studied extensively with the conclusion that those variables are ultimately dependent upon the drug court. There are few studies that explore judge, LSI-R score, and veteran status. Next, methodology of the current study will be explained.

## METHODOLOGY

### The Sample

The East Central Judicial District Drug Court (ECJDDC) in Fargo, North Dakota, was initially established in 2003 with eleven participants (Irby, 2006). The program eventually grew large enough that a second judge was seated in 2007. The ECJDDC has had four judges serving on the adult drug court. Two judges currently preside over the adult courts with one being seated since the inception in 2003. A third judge moved from the adult court to the juvenile court. Judges maintain regular district court duties in addition to drug court duties (Irby, 2006). Each court has a probation officer to help assist the judge.

ECJDDC participants can enter drug court for drug offenses or for multiple DUI offenses. Offenders must a) not have any current or previous violent convictions b) be willing “to accept responsibility for their addiction and criminal conduct” c) receive a chemical addiction evaluation and diagnosis d) not be a former drug court participant and e) the current or a prior offense does not include delivery, intent to deliver, or manufacturing. In addition, drug offenders must also a) have multiple prior felony or misdemeanor drug offenses with the current offense being at or above a class A misdemeanor or b) the current offense is the first felony with a history of substance abuse. In order to be eligible for drug court based on a DUI offense, a participant must be on at least their third DUI with the current one being a class A misdemeanor or class C felony with no injury to others. Participants can also be nominated by a probation officer if they are facing probation revocation for a qualifying offense. All participants are required to plead guilty to the charges they are facing (ECJDDC Handbook).

Drug courts should be more rehabilitative in nature rather than punitive (The Drug Court Standards Committee, 1997; Goldkamp, White, and Robinson, 2001) and participants of the ECJDDC are required to agree to certain conditions to reflect this nature of drug courts. The first

requirement is submitting to a chemical dependency assessment including baseline drug testing for marijuana, methamphetamine, cocaine, and opiates. The Court also does an LSI-R assessment at entrance and exit. The second condition is continued drug and alcohol screenings to monitor drug habits. The third condition is treatment. Treatment comes in various forms including counseling and self-help meetings (Narcotics Anonymous or Alcoholics Anonymous) with a sponsor involved in the participant's recovery. Treatment can also be inpatient or outpatient depending on the client's needs; however, inpatient care is extremely limited due to the nature of the contract with the treatment provider. Participants must also meet with their supervising probation officer, keep up to date on child support or other court payments, and appear in the courtroom on a regular basis. Finally, participants must have housing and be employed or be attending educational/vocational training or participate in community service (Irby, 2006).

There are three phases of the ECJDDC. The program is designed to last a minimum of one year, but participants may take longer if necessary. Each phase is a minimum of four months in length with less supervision and conditions as one advances to the next phase. Participants are required to complete each phase before continuing to the next. The Drug Court Standards Committee (1997) recommends that drug courts employ an incentive program in order for participants to be successful. Incentives are provided in the ECJDDC for "positive steps toward attaining a drug and crime free lifestyle" (ECJDDC Handbook: 15). Incentives include, but are not limited to, graduating to the next phase, certificates, applause, coffee and donuts for the group, acknowledgment from the judge, early termination from probation, charge dismissed at graduation, and ceremonies that family members may attend.



It is important to add a note about the delivery offense. The ECJDDC's handbook specifically excludes those convicted of delivery, intent to delivery, and manufacturing. However, many potential participants were pleading down their charge to simple possession in order to qualify for drug court. In 2010, the advisory panel of the ECJDDC decided to allow those convicted of delivery of a controlled substance to enter drug court with that offense.

One of the key components to success discusses the use of sanctions. One of the recommendations from the Drug Court Standards Committee regarding sanctioning is to provide participants with verbal and written copy of the responses that can be expected for non-compliance in the program. The ECJDDC handbook states that sanctions that are available are placement in a residential treatment or halfway house placement, doing community service, adjusting the treatment, monitoring via GPS, beginning a sobriety program, starting home confinement, incarcerating in a detention center, setting a curfew, writing a report, and reporting during the day(16). When one of the probation officers was asked about how sanctions were used, they stated that they differ between courts and there were not set criteria about how the judges respond to non-compliance. Both probation officers were emailed and asked how sanctioning was handled in their respective courts and only one responded. The officer stated that sanctioning was doled out once a week and nothing was done in writing. For the first drug offense, the participant could face 1-2 days of incarceration; 2<sup>nd</sup> offense was 2-4 days of incarceration; 3<sup>rd</sup> offense, 3-6 days of incarceration. An additional two days were added if they found the participant to be dishonest. Participants could face entering a halfway house or electronic monitoring for severe or IV drug use. Sanctions for missing court, treatment, probation officer appointment include an essay or community service. Finally, if the participant

does not make an Alcoholics Anonymous or Narcotics Anonymous meeting, they are not given a chance in the reward drawing for candy bars, gift certificates, and waiver of supervision fees.

### **Data Collection**

The ECJDDC provided the information about the drug court participants and their progress through the program. Additional participant information not included in the database was accessed through the state's DocStar offender system at the probation and parole office. The Department of Corrections and Rehabilitation (DOCR) and the state Bureau of Criminal Investigation (BCI) provided records of all participants for crimes committed within the state. However, it was discovered that the BCI reports only contained crimes for which the participant was fingerprinted, which typically excludes DUIs and low level misdemeanors. The state in which the drug court operates is a public access state; therefore, participant names were able to be searched on the state access site, which includes non-fingerprinted court interactions with information on arrest and disposition. The BCI reports were still useful because the reports contained crimes that were dismissed from public record.

The original population contained 252 participants. However, one participant was eliminated from the analysis because they were transferred to the Burleigh County Drug Court, approximately 200 miles away. One participant was included in the descriptive statistics and most of the bivariate statistics, but will not be included in the logistic regression model. When her file was accessed in DocStar, the demographics listed were incorrect. She was listed as black male with dependents instead of a white female without dependents. Her probation officer could not remember some of the other information such as living situation, education, or income. Because of this missing information, the statistical program used automatically excludes her from analysis.

## **Variables**

Previous evaluations of drug courts have used two primary dependent variables: completion of the program and various measures of recidivism. Completion is a major milestone and should be the first step in evaluating the functioning of a drug court. The outcome variable in this study is a binary, nominal level variable indicating graduation. Logistic regression will be used because the dependent variable is binary.

The first set of independent variables is information about the participants' characteristics. Sex, race, age and LSI-R scores were provided by the probation officers' databases. Sex is coded as 0=male and 1=female. "Caucasian", "white", and "Bosnian" were combined into "white" (=0). Due to the small numbers of "black", "Native American", and "Hispanic", minorities were classified together into non-white(=1). Age and LSI-R scores are interval/ratio level variables that will not be collapsed into smaller categories.

Veteran Status, educational level, employment status, living arrangement information, whether the participant was receiving public assistance, and income level were gathered from the state's DocStar system. Veteran status is a binary variable indicated by a 1 equaling a veteran. If the participant did not graduate high school, the last grade completed was entered into the system. For the present study, those individuals were collapsed into one category: "Less than High School". The DocStar system separated out individuals with a high school diploma and those who received a GED. "Beyond High School" is a combination of some college, tech school, college graduate, and graduate degree. High school is the reference category for educational level.

There were several categories of employment status. There were two categories of unemployed: "Unemployed and not looking" and "Unemployed and looking". These categories

were combined with homemaker and are categorized as “Unemployed”. “Full Time” and “Full Time Seasonal” were separate in the DocStar system, but combined in this study. The final categories are “Part time”, “Not Employable”, and “Student”. Offenders are considered unemployable if there are physical or psychological barriers to employment. Some of the participants may be collecting social security or disability payments.

Living arrangement categories were obtained from the DocStar system. Living alone is the reference category for this variable. The “Family” category includes those living with their spouse only, spouse and children, children only, parents, and siblings. “Friends” includes those living with friends or their boyfriend/girlfriend. “Correctional facility” and “Other” were the final categories for living arrangement. There did not seem to be a consensus in the probation and parole office as to what category someone in a halfway house would be placed in between “correctional facility” and “other”. Two different officers were asked and one said correctional facility and another officer said other. Therefore, those two categories are going to be combined in this study into “correctional facility”.

Receiving public assistance is a binary, nominal level variable with yes=1. If an offender was being housed in a correctional facility, then the DocStar system would list the offender as receiving public assistance. Monthly income categories were determined by the DocStar system. “None” is the reference category for this analysis. Other categories include “Low Income” (\$1-999), “Medium Income (\$1,000-1,999), and “High Income” (\$2000+).

The next set of independent variables relate to prior offenses. BCI reports from the state of North Dakota and the public access sites from North Dakota and Minnesota were used to obtain information about prior offenses. Traffic violations, infractions, and administrative violations were excluded; thus, only misdemeanors and felonies are included as prior offenses.

However, driving under suspension and revocation were included as an offense as the states do not consider these to be traffic violations. The variables included in this analysis are whether the offender had prior drug offenses, prior DUIs, and a prior incarceration. Originally, the variables were an interval/ratio level with actual number of offenses. However, because there were participants that skewed the mean number of prior misdemeanors and there was not much variance in prior number of felonies, these variables will each be collapsed into binary variables with yes=1.

The role of the judge is also examined. Judge Irby has been a judge since the inception of drug court. A second court was added and has seen three judges since its' inception: Judge Irwin, Judge, McCullough, and Judge Corwin. Because of this and the large number of participants that have come before him, Judge Irby will be the reference category.

Referral offense is the last independent variable. After running the initial frequencies on the database provided by the probation officers, forty-five different referral offenses had been recorded. These offenses were collapsed into "Drug", "DUI", and "Other". "Other" includes burglary and robbery. For those that had a drug crime and another offense, they were placed into the drug category.

Many of the variables were gathered by the probation officers assigned to the participants and put into a database that was given to the researcher. Other information such as income, dependent information, marital status, living situation, and education were gathered by the researcher from the state's DocStar system. Next, the results will be presented with descriptive information on the participants, bivariate analysis between individual variables and graduation, and a logistic regression with graduation as the dependent variable.

## RESULTS

### Descriptive Statistics

The ECJDDC has a graduation rate of 71.6% (see table 1) with an average of 368.57 days in the program. The graduation rate is far above the national average of 53% reported by Huddleston and Marlowe in 2011. In addition, participants seem to be completing the program near the one year design of the program. 64% of the participants were referred to drug court for a drug related crime, followed by DUIs (34%). Two percent of the participants were referred to drug court for a crime such as theft or burglary that was drug related. The racial composition of the ECJDDC reflects the racial composition of the county. According to the 2010 census data, Cass County is 91.7% white and the drug court was 93.65% white. Overall, the participants tended to be male (79.68%), with at least a high school diploma or GED (85.5%), and employed (64.3%). What was slightly surprising is with the mean age being 28.57 years (median age being 26.0), approximately one-third of the participants claimed to have no income and living with parents was the most common housing situation. It is not too surprising that Judge Irby has had an overwhelming majority (66.8%) of participants since he has been a presiding judge in drug court since its inception in 2003. In regards to prior record, 78% of the participants have a prior record and 22.4% of the participants have been incarcerated prior to drug court. 39% of the sample has a prior drug offense, while 33% of the sample has a prior DUI.

As stated above in the literature review, veteran status has not been looked at in the literature on drug court graduation rates. The ECJDDC has had 12 veterans (4.8%) go through the program. Veterans are underrepresented in drug court (4.8%) compared to the general population as approximately 9% of the population in Cass County is veterans (United States Census Bureau, 2011).

**Table 1: Participant Demographic Information: Frequencies (N=250)**

		<b>Frequency</b>	<b>Percent</b>
<b>Program Graduate</b>	No	71	28.29%
	Yes	179	71.6
<b>Primary Referral Offense</b>	Drug	160	64.0
	DUI	85	34.0
	Other	5	2.0
<b>Judge</b>	Irby	167	66.8
	Irwin	6	2.4
	Corwin	21	8.4
	McCullough	56	22.4
<b>Race</b>	White	236	93.65
	Non-White	16	6.35
<b>Gender</b>	Male	199	79.68
	Female	51	20.32
<b>Education Level</b>	Less than High School	36	14.5
	High School	49	19.7
	GED	46	18.5
	Beyond High School	118	47.4
<b>Employment Status</b>	Unemployed	47	18.9
	Full time (greater than 35 hours)	138	55.4
	Part time	22	8.8
	Not employable	25	10.0
	Student	17	6.8
<b>Receive Public Assistance</b>	No	202	81.1
	Yes	47	18.9
<b>Monthly Income</b>	None	78	31.3
	Low(\$0-999)	42	16.8
	Medium (\$1000-1999)	85	34.1
	High (\$2000+)	44	17.7
<b>Living Arrangements</b>	Family	129	51.8
	Friends	29	11.6
	Alone	50	20.1
	Other	41	16.4
<b>Marital Status</b>	Single	188	75.5
	Married	22	8.8
	Divorced	39	15.7
<b>Dependents</b>	No	173	69.5
	Yes	76	30.5
<b>Veteran Status</b>	Non-veteran	237	95.2
	Veteran	12	4.8
<b>Prior Record</b>	No	54	22.0
	Yes	192	78.0
<b>Prior Drug Offense</b>	No	151	60.64
	Yes	98	39.36
<b>Prior DUIs</b>	No	168	66.67
	Yes	84	33.33
<b>Prior Incarceration</b>	No	194	77.6
	Yes	56	22.4
	<b>Mean</b>	<b>Std. Dev</b>	<b>Median</b>
<b>Age</b>	28.6	8.88	26.0
<b>LSI Score</b>	23.09	6.37	23

Table 1 also shows the means for age and LSI-R score. The mean age of the participants is 28.57 years, which is similar to Butzin et al. (2002). The mean LSI-R score is 23 (low-moderate), with a minimum score of 7 and maximum of 41.

### **Bivariate Analysis**

Table 2 displays the results of the bivariate analysis for this study. Chi-squared was used in the bivariate analysis for nominal and ordinal variables, and a t-test was utilized for interval/ratio variables. Employment, income level, and living arrangements are all significant at  $p < .0001$ . Participants that are not employable have the lowest graduation rate at 24%, while students had the highest graduation rate at 88%. Those that are unemployed have a fairly high graduation rate of 70.2%. Such a low graduation for those not employable is probably more of a function of any underlying physical or mental issue that may interfere with successful graduation rather than employment itself. Those living in a correctional facility have a graduation rate of 29.27%.

Participants with no income had a graduation rate of 53.85% while those with income of \$2,000 or more a month had a graduation rate of 86.36%. 83.33% of those with low income graduated from drug versus 75.29% of those with medium level income. However, those with medium income made up the largest group of graduates at 35.75%. Receipt of public assistance was also significant ( $\chi^2 = 4.2603$  p-value=.0390). Those who received public assistance had a graduation rate of 59.6% while those who did not receive public assistance had a graduation rate of 74.6%.



**Table 2: Bivariate Analysis of Drug Court Graduation**

		<b>Graduation %</b>	$\chi^2$	<b>p-value</b>
<b>Primary Referral Offense</b>	Drug DUI Other	71.7 71.8 60.0	0.3304	.8477
<b>Judge</b>	Irby Irwin Corwin McCullough	70.1 100.0 71.4 73.2	2.6468	.4494
<b>Race</b>	White Non-White	71.4 75.0	.0972	.7552
<b>Gender</b>	Male Female	72.6 66.7	.7668	.3812
<b>Employment Status</b>	Unemployed Full time Part Time Not Employable Student	70.2 79.0 72.7 24.0 88.2	34.1295	<.0001
<b>Receive Public Assistance</b>	No Yes	74.6 59.6	4.2603	.0390
<b>Living Arrangements</b>	Family Friends Alone Other	82.17 72.41 80.0 29.27	45.2323	<.0001
<b>Marital Status</b>	Single Married Divorced	68.09 86.36 82.05	5.6198	.0602
<b>Dependents</b>	No Yes	74.57 65.79	2.0128	.1560
<b>Veteran Status</b>	Non-Veteran Veteran	71.73 75.00	.0604	.8058
<b>Prior Record</b>	No Yes	77.78 70.83	1.0162	.3134
<b>Prior Drug Offense</b>	No Yes	73.65 70.41	.3095	.5780
<b>Prior DUIs</b>	No Yes	73.9 69.9	.4593	.5003
<b>Prior Incarceration</b>	No Yes	70.0 76.7	.9967	.3181
<b>Education Level</b>	Less than High School High School GED Only Beyond HS	50.0 77.6 69.6 77.1	11.0321	.0116
<b>Income</b>	None Low(\$0-999) Medium (\$1000-1999) High (\$2000+)	53.9 83.33 75.3 86.4	20.3359	.0001
			<b>T-test</b>	<b>p-value</b>
<b>Age</b>			.04	.9663
<b>LSI</b>			1.03	.3054

Education was significant at the  $p < .05$  level. 50% of those without at least a high school diploma did not graduate from drug court. To examine if there was a difference between high school graduates ( $n=49$ ) and participants with a GED ( $n=46$ ), 77.55% of those with a high school diploma and 69.57% of those with a GED graduated ( $\chi^2= 18.4587$   $p$ -value=.0024). For those who have educational attainment beyond a high school diploma or GED, 77.1% graduated from drug court.

Marital status approached significance ( $\chi^2= 5.6198$   $p$ -value=.0602). Having dependents was not associated with drug court graduation. Other variables that were significant in prior literature such as race, gender, and prior record were not found to be significant in the current study. Judge was not significant in the bivariate analysis. Because there was the possibility of the small  $n$  for Judge Irwin affecting the results, the judge category was collapsed into Irby vs. non-Irby. There still was not any significance with  $\chi^2= 0.5868$  and  $p$ -value=.4437.

Finally, age and LSI-R scores were analyzed using a t-test and using the Pooled method to test for unequal variances. Neither of these variables was significant. The frequency distributions and Q-plots looked identical for both groups for both variables. Therefore, there seems to be no difference between graduates and non-graduates with regards to age or LSI-R score.

### **Multivariate Analysis**

Table 3 shows the estimates, odds ratios, and  $p$ -values for the logistic regressions for two different models examined for this study. A reduced model was run using only the variables that were significant in the bivariate analysis. Included in this model were employment status, living arrangements, education level, public assistance, and income. The  $r$ -square for this model was .2273 and a max-rescaled  $r$ -square of .3267; however,  $r$ -squared is not appropriate for assessing

the fit of a logistic regression model (as is typical in OLS regression). Instead it is used for purposes of comparing two models and was used to compare this model with a complete model.

The Hosmer and Lemeshow Goodness of Fit test was applied. If the test statistic is significant in this test, then the model is not adequate (Meyers, Gamst, Guarino, 2006). The p-value for the Hosmer and Lemeshow test statistic for the reduced model was .2458.

**Table 3:** Logistic Regression of Drug Court Graduation, Reduced Model

		<b>Estimate</b>	<b>Odds Ratio</b>	<b>p-value</b>
<b>Intercept</b>		1.5801		.0095
<b>Employment Status</b>	Unemployed	-0.1045	0.901	.8403
	Full time			
	Part Time	-1.4855	0.226	.0478
	Not Employable	-0.6266	0.534	.4562
	Student	0.9913	2.695	.2974
<b>Receive Public Assistance</b>		-0.5989	0.549	.1406
<b>Living Arrangements</b>	Family	0.4062	1.501	.3688
	Friends	-0.5119	0.599	.3953
	Alone			
	Correctional Facility	-1.9217	0.146	.0071
<b>Education Level</b>	Less than High School	-1.3066	0.271	.0264
	High School			
	GED Only	-0.2529	0.777	.6453
	Beyond High School	-0.2834	0.753	.5607
<b>Income</b>	None			
	Low(\$1-999)	1.2232	3.369	.0888
	Medium (\$1000-1999)	-0.0366	0.964	.9364
	High (\$2000+)	1.0227	2.781	.0474

Correctional facility was significant in the reduced model ( $p=.0071$ ). Participants living in a correctional facility had 85.4% decreased odds of graduation compared to those living alone. Living with friends or family did not reach or approach significance. Those with less than a high school level education had decreased odds of graduation by 72.9% compared to those with a high school diploma. None of the other educational levels reached or approached significance. Working part time was the only employment status category that emerged as significant in this reduced model. Those who worked part time had 77.4% decreased odds of graduation compared to their counterparts working full time. Having an income \$2,000 or more per month is

significant with  $p=.0474$ . Participants with \$2,000 or more monthly income increased their odds of graduation by 178% compared to participants with no income. Having an income of \$1-999 approached significance with  $p=.0888$ . Having income of \$1,000-1,999 did not reach or approach significance. Finally, receipt of public assistance did not reach or approach significance.

A complete model was also analyzed. The overall r-squared value for the complete model with all variables was .2561 with a max rescaled r-squared of .3713. The p-value for the Hosmer and Lemeshow statistic was .1625, which was not significant at the .05 level. Therefore, the model is adequate. The only variable to remain significant in the model was living in a correctional facility

The models supported each other in that living in a correctional facility was a predictor of graduation. In addition, the reduced model also had working part time and having a “high” income as significant predictors of graduation. The r-square and max-rescaled r-square values are fairly close, the reduced model will be chosen because of the number of predictor variables that emerged as significant and because the change in the r-square of the full model does not support using the full model while reducing the number of predictor variables that are significant.

The predictor variables of the ECJDDC court have been established using a logistic regression. The variables that emerged as significant in reducing odds of graduation were living in a correctional facility, working part time, and having less than a high school education. Having an income of \$2000 or more a month increased the odds of graduation for this particular court. The last chapter will discuss how the results of this court fit with previous research and provide some policy implications.

## **DISCUSSION**

Many of the variables that are significantly related to success in this study have not had support in previous literature or a clear consensus in the previous literature. Living arrangement has not been found to be a significant predictor of graduation (Hickert et al, 2009). However, the authors used a dichotomous variable of independent or dependent status. Dependent status was living with a relative, in a shelter, or in an institution. This current study has found that those living in a correctional facility have decreased odds of graduating compared to those living alone.

Upon further evaluation of the database provided by the probation officers, it was noted that some drug court participants were terminated due to not following halfway house rules. This suggests that participants living in a correctional facility have more guidelines to follow than participants not living in a correctional facility, putting more pressure on them, and hindering graduation. These participants could be the ones that need drug court the most. It is also possible that of those who do graduate from drug court and living in a correctional facility may benefit those most and extending the study to examine this would be beneficial.

Ways of retaining individuals placed in a correctional facility need to be examined rather than disqualifying them from drug court. To increase graduation rates among these individuals, the ECJDDC may want to look in to providing another form of support within their living situation to help monitor the participant or provide more support when the participant may truly need it while in the halfway house.

Another suggestion is to change how sanctioning is done for these individuals. The participants have another set of standards that are not required of the other participants. Drug use or sale or other crimes should be treated the same; however, house infractions such as curfew or other rules should be given leniency at the beginning of drug court participation or examined

on a case by case basis. Increased sanctions for failure to follow house rules could be implemented the further a participant is in the program.

Finally, there is the option of no contact between the halfway house and the drug court. The halfway house should be a separate entity from the drug court. The house alone would be responsible for any sanctioning for failure to follow house rules. This would put the participant at a more even level with the rest of the participants who do not have additional house rules to follow.

Previous literature has consistently found that those who have not graduated high school are less likely to complete drug court compared to those who have at least a high school education. This study did not dichotomize education into high school graduates versus non-graduates unlike many previous studies and still found those who do not have at least a high school education have lower odds of graduating.

Like those living in a correctional facility or other living situation, those without at least a high school diploma or GED are probably the highest risks and most in need of the services that drug court provides; therefore, retaining these individuals should be the priority versus disqualifying them from drug court participation. Lack of motivation may be an underlying factor as to why high school dropouts without a GED are less likely to complete drug court. Similar to Saum et al (2002) that found non-graduates are less likely to understand what is happening inside the courtroom, perhaps level of education or learning disabilities are barriers for participants' understanding the requirements of drug court or understanding the instructions placed upon them. It may be worthwhile for the probation officers and judges to spend more time with participants who have lower levels of education in order to ensure that the participants

understand everything that they are required to do. In addition, treatment providers may need to adjust treatment to accommodate the education level of these participants.

Working part time was found to decrease the odds of graduation compared to those working full time. Employment was a significant predictor of graduation in Sechrest and Shichor's (2001) and Roll et al's (2005) examination of graduation from drug court. However, Sechrest and Shichor found that non-graduates were likely to be unemployed and Roll et al found that employment was a predictor of graduation. Both studies dichotomized employment and did not look at the level of employment, which is a strength of this study. The results of part time employment decreasing the odds of graduation compared to those working full time suggests that it is not enough for the participant to be simply employed, but they need to be working 35 hours or more a week. Working less hours gives them more time to participate in drug activity compared to those working 35 or more hours per week. Also, similar to education, the element of motivation may be a factor. Those working full time may be more motivated to complete drug court compared to those working part time.

Having a high income level increased the odds of graduation in this particular study and goes hand in hand with gainful employment. There is very little literature that uses the income of the participant as a variable in successful drug court completion. Having an income of \$2,000 or more per month was the only category to be significant. This group of participants may have more to lose if they do not graduate from drug court such as their income source. Having more leverage over a participant is one of the keys to a successful drug court (Rossman and Zweig, 2013). While the literature focuses on leverage being alternative sanctions that are more punitive in nature if the participant is not successful in drug court, it is possible that if there is a positive social leverage, participants may be more encouraged to graduate from drug court. The

ECJDDC could further utilize this positive leverage theory in helping the offender who is underemployed to seek resources that may get the participant more gainful employment.

The effect of age and sex has not been adequately established in the prior literature regarding drug court completion. The results of this study add to the body of literature that determines that age has no effect on drug court completion (Schiff and Terry, 1997; Roll et al, 2005). This could be due to not a lot of variation in age among the participants in this particular court. Because there is a lack of consensus on the effect of age in drug court, research needs to continue to examine this factor, particularly in courts with more variance in age. This study adds to the literature that sex was not a significant predictor variable in determining graduation (Belenko, 2001).

Race has been a significant variable in many studies (Schiff and Terry, 1997; Belenko, 2001; Hartley and Phillips, 2001; Sechrest and Shichor, 2001; Butzin et al, 2002). This study did not find a similar effect for race in this drug court. While the participants' racial demographics mirror the demographics of Cass County, there may not be enough minorities to definitively determine an effect of race in the ECJDDC and contribute to the existing body of literature. Any future studies on the ECJDDC should continue to look at this variable.

This study failed to find veterans status as a significant predictor of drug court graduation. Once again, this may possibly be due to the small number of participants considered veterans. According to Huddleston and Marlowe (2011), veterans courts are becoming more prevalent. Because of this, researchers need to be prudent in researching veterans in specialized courts. Researchers will also need to further examine if there are different best practices in the treatment of veterans compared to the general population and advocate for those best practices. The reason for lack of significance may also not be able to be determined from the nature of this



study and a more comprehensive process evaluation may be needed. As Huddleston and Marlowe (2011) stated, veterans do have some specialized needs. Perhaps those needs are not being met by the current set up of the ECJDDC.

The East Central Judicial District Drug Court has a fairly high graduation rate compared to the rest of the country based on the research from Belenko (2001) and Huddleston and Marlowe (2011). However, most of the participants in the ECJDDC are fairly low risk with average LSI scores of 23. Rossman and Zweig (2013) found that the most effective drug courts have greater leverage over their participants, including alternative sanctions. Many of the participants in the ECJDDC would have been sentenced to regular probation rather than prison, so the consequences of not completing are minimal. If the participants have a low risk of recidivating and are not facing any prison time according to their probation officers are they really gaining?

Drug court research has consistently shown that those who are higher risk have the most personal benefit as well as substantial benefits to the community (Rossman and Zweig, 2013). Rossman and Zweig (2013) also found that those with a history of violence or previous heavy drug behavior do not use any more resources than those without these histories. Therefore, rejecting those participants on cost-effectiveness grounds is not supported (Rossman and Zweig, 2013). It is worth suggesting that the drug court re-examine their policies regarding exclusion from drug court based on prior history even if it will hurt the graduation rate as the long term consequences will be more beneficial.

Predictability of sanctions is also a characteristic of the most effective drug courts. Participants should be given a schedule of infractions and their consequences. By talking with the probation officers, the researcher learned that both of the drug courts had different

procedures regarding sanctions. The probation officer who provided more information about sanctioning policies did state that nothing was in writing. With one of the key components of drug is to have explicit sanctions written out so the participants know what to expect, it is recommended that this drug court provide a written schedule of sanctions to the participants (Drug Court Standards Committee, 1997). Also, both courts should have fairly similar sanctioning practices. The courts, however, do need to maintain some flexibility and special circumstances should be taken on a case by case basis.

There are several strengths of this study. The first is the relatively large sample. Most of the previous studies examined had sample sizes around 100-150, and this study had sample of 250. A second strength of this study was being able to explore variables that were not studied as heavily in drug court literature or expanding variables that have been explored. Variables in this study that are not usually included in other studies of drug court graduation included judge and veteran status. While judge and veteran status were not found to be significant in this study, both warrant future analysis. Variables that were expanded upon were living situation and educational attainment since these were dichotomous variables in previous literature and this study was able to have four categories for each.

There are some limitations to this particular study. The biggest limitation of this study is the homogeneity of the participants in ECJDDC. This affects the generalizability of this study to other sites. In addition, other variables did not have enough variability to adequately assess whether the variable was not truly significant such as veteran status. It is possible that as more participants enter the ECJDDC, these variables can be re-examined. Another limitation, due to the nature of the study, is the inability to distinguish why some variables are significant and why some are not. A process evaluation may be useful to fully understand these relationships.

In conclusion, this study examined the characteristics of participants who graduated from the East Central Judicial District Drug Court. The independent variables of interest were age, race, sex, prior record, current offense, income, receipt of public assistance, employment status, education level, veteran status, marital status, whether the participant had dependents, and judge. The ECJDDC had a graduation rate of 71%, which is much higher than the average of 51% (Huddleston and Marlowe, 2011). The model chosen found that living in a correctional facility, having less than a high school education, and having an income of \$2000 or more were significant predictors of graduation. Policy implications for this particular court are examining policies to retain participants living in a correctional facility, and having less than a high school education.

## REFERENCES

- Andrews, D. A., & Bonta, J. (1995). LSI-R: The level of service inventory-revised user's manual. *Toronto: Multi-Health Systems*.
- Belenko, S. (2001). Research on drug courts: A critical review. 2001 Update. New York: The National Center on Addiction and Substance Abuse at Columbia University.
- Bouffard, J.A. & Richardson, K (2007). The effectiveness of drug court programming for specific kinds of offenders: Methamphetamine and DWI offenders versus other drug-involved offenders. *Criminal Justice Policy Review*, 18(3), 274-293.
- Bouffard, J.A., Richardson, K., Franklin, T. (2010). Drug courts for DWI offenders? The effectiveness of two hybrid drug courts on DWI offenders. *Journal of Criminal Justice*, 38(1), 25-33.
- Bureau of Justice Statistics (1990). Drugs and crime facts. Rockville, MD: U.S. Department of Justice, Office of Justice Programs.
- Butzin, C. A., Saum, C. A., & Scarpitti, F. R. (2002). Factors associated with completion of a drug treatment court diversion program. *Substance Use and Misuse*, 37, 1615-1633.
- Dannerbeck, A., Harris, G., Sundet, P., & Lloyd, K. (2006). Understanding and responding to racial differences in drug court outcomes. *Journal of Ethnicity in Substance Abuse*, 5(2), 1-22.
- Drug Court Standards Committee (1997). Defining drug courts: The key components. Washington, DC: Office of Justice Programs, Drug Courts Programs Office.
- East Central Judicial District Drug Court Committee. *East Central Judicial District Drug Court Handbook*. Fargo, ND.

- Fischer, M. & Geiger, B. (2011). What “works” in drug court: A bottom-up female participants’ perspective. *Journal of Human Behavior in the Social Environment*, 21, 752-765.
- Goldkamp, J., White, M., & Robinson, J. (2001). Do drug courts work? Getting inside the drug court black box. *Journal of Drug Issues*, 31(1), 27-72.
- Hartley, R. & Phillips, R. (2001). Who graduates from drug courts? Correlates of client success. *American Journal of Criminal Justice*, 26(1), 107-119.
- Hartman, J.L., Johnson Listwan, S., Koetzle Shaffer, D. (2007). Methamphetamine Users in a community based drug court: Does gender matter?. *Journal of Offender Rehabilitation*, 45(3/4), 109-130.
- Hickert, A.O., Boyle, S.W., Tollefson, D.R., (2009). Factors that predict drug court completion and dropout: Findings from an evaluation of Salt Lake County’s adult felony drug court. *Journal of Social Service Research*, 35, 149-162.
- Hirschi, T. & Gottfredson, M. (1983). Age and the explanation of crime. *American Journal of Sociology*, 89(3), 552-584.
- Huddleston, W. & Marlowe, D. (2011). *Painting the current picture: A national report on drug courts and other problem solving courts in the United States*. Alexandria, VA: National Drug Court Institute.
- Irby, J. (2006). Adult drug court in the east central judicial district. *North Dakota Law Review*, 82(4), 1425-1430.
- Johnson, C.M. & Wallace, S. (2002). Critical elements to consider for methodologically sound impact evaluation of drug court programs. *Drug Court Review*, IV(2), 35-48.

- Koetzle Shaffer, D., Hartman, J.L., Johnson Listwan, S., Howell, T., & Latessa, E.J. (2011). Outcomes among drug court participants: Does drug of choice matter? *International Journal of Offender Therapy and Comparative Criminology*, 55(1), 155-174.
- Leukefeld, C., Smiley McDonald, H., Staton, M., & Mateyoke-Scriver, A. (2004). Employment, employment-related problems, and drug use at drug court entry. *Substance Use & Misuse*, 39(13-14), 2559-2579.
- Marlowe, B., Festinger, D., & Lee, P. (2002). The judge is a key component of drug court. *Drug Court Review*, IV(2), 1–34.
- Marlowe, D. (2010). Research update on adult drug courts. Alexandria, VA: National Association of Drug Court Professionals.
- Marinelli-Casey, P., Gonzales, R., Hillhouse, M., Ang, A., Zweben, J., Cohen, J., Fulton Hora, P., Rawson, R.A. (2008). Drug Court treatment for methamphetamine dependence: Treatment response and post-treatment outcomes. *Journal of Substance Abuse Treatment*, 34 (2), 242-248.
- Meyers, L.S., Gamst, G., Guarino, A.J. (2006). *Applied Multivariate Research*. Thousand Oaks, CA: Sage Publications, Inc.
- National Association of Drug Court Professionals (2012).History. Alexandria, VA: National Association of Drug Court Professionals.
- Payton, E. A., & Gossweiler, R. (2001). *Treatment services in adult drug courts: Report on the 1999 national drug court treatment survey. Executive summary*. Washington, DC: U.S. Department of Justice.

- Roll, J.M., Pendergast, M., Richardson, K., Burdon, W., & Ramirez, A. (2005). Identifying predictors of treatment outcome in a drug court program. *The American Journal of Drug and Alcohol Abuse*, 31, 641-656.
- Rossman, S.B. & Zweig, J.M. (2012). What have we learned from the multisite adult drug court evaluation? Implications for practice and policy. Alexandria, VA: National Association of Drug Court Practitioners.
- Saum, C., Scarpitti, F.R., Button, C.A., Perez, V.W., Jennings, D., & Gray, A.R. (2002). Drug court participants' satisfaction with treatment and the court experience. *Drug Court Review*, IV(1), 39-66.
- Schiff, M. & Terry, W.C. (1997). Predicting graduation from Broward County's dedicated drug treatment court. *The Justice System Journal*, 19(3), 291-310.
- Sechrest, D.K. & Shichor, D. (2001). Determinates of graduation from a day treatment drug court in California: A preliminary study. *Journal of Drug Issues*, 31(1), 129-148.
- Smith, P., Cullen, F., & Latessa, E. (2009). Can 14,737 women be wrong? A meta-analysis of the LSI-R and recidivism for female offenders. *Criminology and Public Policy*, 8(1), 183-208.
- U. S. Census Bureau. (2010). Profile of General Population and Housing Characteristics: 2010 2010 Demographic Profile Data: Cass County, N.D. Retrieved November 30, 2012, from [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC\\_10\\_DP\\_DPDP1](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_DP_DPDP1)
- U. S. Census Bureau. (2011). Sex by age by veteran status for the civilian population 18 years and over: Cass County, N.D. Retrieved January 3, 2013, from [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_1YR\\_B21001&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_B21001&prodType=table)

Vito, G. F., & Tewksbury, R. A. (1998). The impact of treatment: The Jefferson County (Kentucky) drug court program. *Federal Probation*, 62(2), 46-51.