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Research Project #1

An Assessment of the Effectiveness of Civil Citation as an Alternative to Arrest among Youth Apprehended by Law Enforcement

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STATEMENT OF THE PROBLEM

Recent policy shifts in juvenile justice have largely focused on rehabilitative rather than punitive approaches (Wundersitz, 1992; Butts & Mears, 2001; Jenson et al., 2001; Benekos & Merlo, 2016). Prominent examples of these types of policies are diversion programs. First implemented in the 1960s, diversion can include a wide variety of interventions, ranging from participation in community service, family intervention, and drug courts (Polk, 1984; Walby, 2008; Ray & Childs, 2015). Although these programs are largely heterogenic in their application, they have a similar goal: to remove or "divert" juveniles away from the traditional justice system by providing non-sanction alternatives (Ray & Childs, 2015). One such diversion program that has been growing in use and popularity is civil citation.

Civil citation is widely used in the state of Florida as a promising response for first-time, non-serious juvenile offenders. Law enforcement issue civil citations to qualifying misdemeanants in lieu of arrest and prior to adjudication. Though there is wide variation in the application of civil citation across the state, most programs refer youth to some kind of services and require the completion of community service or payment of restitution. For those who comply with all requirements, there is no arrest record or further consequences. Those that do not comply, however, are arrested and must proceed with adjudication of the original offense.

The current research explores the variation in the application of civil citation programs in Florida, including variation in the proportion of encounters between the police and juveniles and the resulting outcome of an arrest versus the issuing of a civil citation by jurisdiction, offense type, and offender characteristics. The research will also determine the impact, both short- and long-term, on levels of recidivism among youth receiving civil citations versus those who were

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arrested. Finally, we provide recommendations for policymakers and practitioners for future use of this program.

Goals and Objectives

With the growing popularity of diversion programs in general, and civil citation programs in particular, an understanding of their implementation and effectiveness is beneficial for policymakers, practitioners, and researchers. To this end, this project addressed the following three research objectives:

1. Objective #1: Compile and analyze data captured from Florida Department of Juvenile Justice's (FDJJ) Juvenile Justice Information System (JJIS) and Prevention web, which contains information on youth who receive civil citations, to identify youth who were given civil citations in lieu of being arrested and those who were arrested. Measures of youth demographics, location of contact with the police (county), type of charge, risk assessment level of youth, and recidivism are captured.

2. Objective #2: Determine the effectiveness of civil citation versus formal arrest in reducing recidivism.

3. Objective #3: Determine why civil citation has had disparate levels of implementation across jurisdictions in Florida.

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LITERATURE REVIEW

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Development of Juvenile Diversion

First popularized during the 1960s, diversion programs are intended to serve as alternatives to traditional sanctions by "diverting" individuals away from further penetration into the justice system (Ray & Childs, 2015). Diversion can occur at several stages of juvenile justice system processing, including but not limited to referral, detention, or adjudication, and can

encompass a variety of rehabilitative strategies such as community service, family counseling, or substance abuse therapy (Walby, 2008). Although diversion programs are considerably heterogeneous in their form and implementation, they strive to achieve three primary and interconnected goals: (1) reducing the likelihood of future delinquency; (2) reducing the number of juveniles within the juvenile justice system, or the extent to which they penetrate the system; and (3) reducing strain upon justice system resources (Cocozza et al., 2005; Skowyra & Powell, 2006; Blomberg & Mestre, 2014; Ray & Childs, 2015; Mears et al., 2016). By providing an alternative to punitive sanctioning, diversion programs are anticipated to not only keep juveniles from formal processing, but also reduce the likelihood they will engage in further delinquency (Cocozza et al., 2005). In addition, reducing the number of juveniles that go through formal processing is intended to free up the justice system's limited resources, in order to focus on more serious offenders (Pogrebin et al., 1984; Patrick & Marsh, 2005; Ray & Childs, 2015).

Diversion programs are justified, in part, by labeling theory (Potter & Kakar, 2002; Dick et al., 2004; Cocozza et al., 2005; Sullivan et al., 2010). The theory argues contact with the criminal justice system, rather than deterring future delinquency, can, in fact, stigmatize an individual in such a way that they are more likely to engage in secondary deviance (Tannenbaum, 1938; Lemert, 1951). When juveniles are arrested, they are inevitably forced into extended contact with the justice system. This contact has a myriad of potentially negative consequences, including exposure to the influences of more serious delinquents, damaging the juvenile's self-perceptions, stigmatizing the juvenile in the eyes of pro-social peers, and removing the potential for future opportunities such as continued schooling or employment (Paternoster & Iovanni, 1989; Bernburg & Krohn, 2003; Cocozza et al., 2005). In effect, the justice system's attempts to "help" might result in more harm (Schur, 1973). The premise of

diversion is that redirecting juveniles away from traditional sanctions, and instead involving

them in rehabilitative or preventative programming, can help avoid the negative consequences of

exposure to the justice system (Dick et al., 2004; Sullivan et al., 2010).

Implementation of Juvenile Diversion Programs

The proper implementation of diversion, like any policy or program, is essential to its

success (Klein, 1979; Lipsey, 2009; Berman & Fox, 2010; Mears et al., 2016). Implementation

involves a wide variety of factors. One of the most prominent concerns is the correct

identification of the program's intended clientele (Klein, 1979). Diversion policies should only

be applied to individuals that would have otherwise received a more severe sanction, such as

arrest, detention, or adjudication. However, several studies have suggested that diversion

programs are often used with juveniles and their family members who would not have been

subject to formal sanctions in the absence of diversion programs (Blomberg, 1977, 1980; Klein,

1979; Van Dusen, 1981). As a result, one of the most common criticisms associated with

diversion is the occurrence of net widening (Austin & Krisberg, 1981; Blomberg, 1983;

Wundersitz, 1992; Potter & Kakar, 2002; Ray & Childs, 2015).

Net widening is an outcome in which a larger number of individuals enter the justice

system through programs intended to reduce these numbers (Klein, 1979). Theoretically,

diversion programs should only be used with juveniles who would have otherwise been subject

to formal juvenile justice processing. Net widening occurs when the program is used for

juveniles who would not have entered the justice system in the first place, thereby increasing

their contact with the system, rather than reducing the contact of the intended diversion clientele.

Several studies have found support for the presence of net widening in the

implementation of diversion programs (Blomberg, 1977, 1980, 1983; Van Dusen, 1981;

Pogrebin et al., 1984; Decker, 1985; Wundersitz, 1992; Macallair & Males, 2004). One of the earliest demonstrations of net widening was a case study by Blomberg (1977) on the implementation of a diversion program in a California juvenile court. He found that instead of limiting the scope of the juvenile court, the diversion program actually expanded it. Diverted individuals were required to participate in family counseling, at which point their siblings and parents were required to participate with the potential for additional negative consequences for family members not amenable to family counseling (Blomberg, 1977). However, several studies have also found either mixed or no effects of net widening associated with diversion programs (Lipsey et al., 1981; Dunford et al., 1982; Mainprize, 1992; Doob, Sprott, & Greene, 2003; Barnhorst, 2004; Prichard, 2010). Prichard (2010) examined over 50,000 police records pertaining to youth contact with the Tasmanian criminal justice system and found that court appearances reduced substantially and there was a concomitant rise in participation in diversion.

<u>Predictors of Diversion</u>

Research on diversion programs has demonstrated that both individual and contextual level factors can impact program implementation. Several studies found that the personal characteristics of juveniles affect the type and severity of response they receive from the juvenile justice system (Armstrong & Rodriguez, 2005; Caudil et al., 2013; Anderson, 2015; Maggard, 2015; Mears & Cochran, 2015). The majority of these studies have focused on the impact of individual level factors on the likelihood of receiving more severe sanctions from the police or the courts. For example, in a study of nearly 3,000 juveniles, Anderson (2015) found that black youths were significantly more likely than their white or Hispanic counterparts to be arrested, regardless of their delinquent behaviors. A study by Cochran and Mears (2015) found that both the race and ethnicity of the juvenile significantly affected disposition at multiple points in the

juvenile justice process. For example, black youths were more likely to receive severe sanctions in terms of diversion, probation, commitment, and transfer decisions (Cochran & Mears, 2015).

A number of studies have also examined how these characteristics affect the likelihood of receiving diversion (Ericson & Eckberg, 2016; Leiber & Johnson, 2008; Rodriguez, 2010; Schlesinger, 2013; Cochran & Mears, 2015). The majority of them found that factors such as race, ethnicity, age, and gender all affect the likelihood that a juvenile will receive diversion over a more severe sanction. Lieber and Johnson (2008) examined a sample of male juvenile offenders in Iowa and found that those who were black and older were less likely to receive diversion than their younger white counterparts. Rodriguez (2010) used a multilevel model to determine if the race and ethnicity of a juvenile affected multiple decision points through the juvenile justice process, including whether or not to apply diversion. She found that black youths were less likely to be diverted than white youths; male youth were less likely to receive diversion than female youths; juveniles with less serious offenses were more likely to be diverted; and juveniles currently enrolled in school were more likely to receive diversion (Rodriguez, 2010).

Another important predictor of the use and success of diversion programs are the characteristics of the jurisdiction implementing the program. Several studies have found that factors such as urbanization, racial heterogeneity, and economic welfare are associated with the use of diversion programs (DeJong & Jackson, 1998; Lieber & Stairs, 1999; Hamilton et al., 2007; Rodriguez, 2007; Hayes-Smith & Hayes-Smith, 2009; Freiburger & Jordan, 2011; Rodriguez, 2013; Lieber Peck, & Rodriguez, 2016). For example, Rodriguez (2007) examined how community-level factors influenced the likelihood of juveniles being placed in detention in a large southwestern city. She found that juveniles who lived in communities characterized by higher unemployment, poverty, and juvenile delinquency were significantly more likely to be

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detained (Rodriguez, 2007). Liebers and Stairs (1999) found that racial heterogeneity and income equality were associated with a greater use of diversion. DeJong and Jackson (1998) used a multilevel analysis to determine if the urbanization of a county affected the likelihood of referral to the juvenile court. They found urban counties were significantly more likely to refer black delinquents to court than were rural counties (DeJong & Jackson, 1998).

Juvenile Diversion and Recidivism

Several studies have examined whether various diversion programs are effective at reducing delinquency (Austin & Krisberg, 1981; Lipsey et al., 1981; Polk, 1984; Patrick & Marsh, 2005; McGrath, 2008; Lipsey, 2009; Wilson et al., 2009; Sullivan & Latessa, 201; Colwell et al., 2012; Schwalbe et al., 2012; Petrosino et al., 2013; Ray & Childs, 2015; Kretschmar et al., 2016). In general, the findings have been mixed, with a number of studies finding a reduction in recidivism (Petrosino et al., 2013) or no effect at all (Wilson et al., 2009; Shwalbe et al., 2012). Findings from a recent meta-analysis of experimental studies of diversion programs for juvenile offenders by Schwalbe et al. (2012) found that, overall, the effect of most diversion programs on recidivism was non-significant. Programs showing promising effects involved family engagement and restorative justice principles (Schwalbe, et al., 2012). The study also found extensive heterogeneity in the various diversion programs. However, findings from another meta-analysis suggested that there were not any consistent effects of diversion across studies (McGrath, 2008). As such, there is little evidence to suggest that diversion does or does not affect juvenile recidivism.

DESCRIPTION OF THE PROGRAM

Civil citation is a form of pre-arrest diversion, whereby police officers are given the discretion to determine whether to officially arrest a juvenile for a non-serious misdemeanor

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offense, or divert them to an intervention program (FDJJ, 2015). The goal of civil citation is to divert first-time, low-level juvenile offenders away from the juvenile justice system at the earliest stage of the process. The program is intended to limit eligible youths' contact with the system and reduce potential stigma associated with an arrest record. In addition, the state of Florida hopes to redirect FDJJ's limited resources to focus on more serious and violent offenders (FDJJ, 2017).

Juvenile delinquents that have committed a non-serious misdemeanor and have no prior offense history are eligible for civil citation (State of Florida Legislature, 2016). When a police officer encounters a juvenile delinquent that meets the eligibility criteria, they can make one of three decisions: (1) arrest the youth and formally process them through FDJJ, (2) present them with a citation directing them to contact a civil citation coordinator, or (3) simply send them home with a warning (FDJJ, 2015). The choice to provide a citation, rather than arrest the youth represents an implementation of the policy as intended.

When the juvenile is cited, they are assessed and subsequently assigned to an intervention program (FDJJ, 2015). These programs vary considerably by county, ranging from community service (the most common sanction) to more tailored programs such as restitution, domestic violence diversion, mental health counseling, or substance abuse treatment (Walby, 2008). If the youth successfully completes the program, their case is closed and they avoid a juvenile arrest record (FDJJ, 2015). The removal of any formal record makes civil citation somewhat unique from other diversion programs. However, if the youth fails to complete their civil citation sanctions, they are arrested for the original offense and formally processed through the juvenile justice system.

Florida's civil citation program received considerable attention in 2011 when it became statewide initiative (Florida Statute, S. 985.12). Although it was officially defined statewide in 2011, the concept of civil citation was already in use in a few Florida counties. However, in its pre-2011 form, civil citation operated much like a traditional diversion and still included the creation of an arrest record and a diversion of the delinquent's case after an official arrest had been made. Some jurisdictions referred to this as a "Juvenile First Time Offender Program." For example, one early implementer of the program was Miami-Dade County, a large urban area with traditionally high levels of delinquent arrests. In an effort to reduce youth contact with the system, Miami-Dade County created a civil citation program for first-time misdemeanor juvenile offenders that diverted them to community programming shortly after their arrest. Other counties developed similar programs and a few modeled their program after Miami-Dade, but each operated independently until 2011.

In 2010, the Governor of Florida appointed a new Secretary of FDJJ from Miami-Dade County. Among other delinquency prevention initiatives, the new secretary brought with her the civil citation program. Initiated by an official legislative request from FDJJ, in 2011 the Florida legislature enacted State Statute 985.12, *Civil Citation*. The statute defines civil citation and created guidelines for its implementation and use. Notably, the statute added the component that, beginning July 1, 2011, civil citations would *not result in an arrest record* for the juvenile. With the intention of reducing juvenile arrests statewide, FDJJ also requested that this *no-arrest* component be added to the program and statute. This was a significant change to local versions of the program, and it is the *no-arrest* record component of the program that makes civil citation unique among other diversion programs. By adding this component to the program, the legislature and FDJJ intended to reduce official arrests of youth who committed first time

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misdemeanor offenses. In addition, although the statute expressly clarified the program, the statue did not mandate its use. The decision to implement the program remained local, at the county and local agency level. Importantly, and due to this local implementation mechanism, today the usage of the program varies throughout the state.

In 2012, the FDJJ developed a comprehensive statewide reform initiative known as the "Roadmap to System Excellence." This reform focused upon: (1) preventing and diverting youth from entering the system, (2) increasing alternatives to secure detention, (3) shifting resources from residential to the front end of the system, and (4) ensuring appropriate use of residential beds. One of the key mechanisms to achieving these goals was the use of the state's new civil citation program. In an attempt to encourage counties and local jurisdictions to use the program, FDJJ held a series of town meetings, press releases, and workshops. As a result, some jurisdictions embraced the program, while others started by narrowly defining youth eligibility, and still others chose not to implement the program or severally limited its use. As FDJJ continued to publish local arrest and civil citation rates, some jurisdictions have expanded its use.

DATA AND METHODS

Current Study

The goal of this report is to assess the implementation and effectiveness of Florida's Civil Citation program. To this end, the following research questions are addressed:

1. What are the historical trends in the use of civil citations in Florida relative to formal arrests?

2. What differences exist in the relative use of civil citations across Florida jurisdictions, types of delinquent acts, characteristics of youth, and what explains any significant variation?

3. What are the short- and long-term outcomes of youth who are issued civil citations compared to those arrested in terms of future arrest?

Data Sources

The Florida Department of Juvenile Justice provided data for this project, including demographic and offense information on all juveniles within the state who met the eligibility requirements for participation in the civil citation program between January 2002 and July 2016. Both juveniles who received civil citation and juveniles who were eligible but were arrested instead, were included in the data set. There were 437,449 cases in this base file, which was then aggregated up to county level counts of civil citation and arrested youth. County-level data from the University of Florida's Bureau of Economic and Business Research, the Florida Department of Law Enforcement (FDLE), the Office of Economic and Demographic Research, and the Florida Department of Education was matched to this file to include county contextual factors. We used this file to assess the implementation of civil citation across all 67 counties in Florida.

We then matched the base juvenile file (original 437,449 cases) to an additional file from FDJJ on any subsequent delinquency, or recidivism, the juvenile committed after their initial offense, as well as a file from the FDLE on any subsequent arrests that occurred after the juvenile turned 18. This merged file was then limited to only juveniles whose first delinquency incident occurred after the 2011 state initiative (Florida Statute 985.12), which enacted the non-arrest component of the civil citation program. This data set totals 110,088 juveniles.

For the final data set used in the analyses, we merged the above data with juvenile responses to risk assessments conducted by FDJJ within 100 days after their arrest or referral to civil citation. Arrested juveniles were given the Residential Positive Achievement Change Tool (RPACT), and civil citation juveniles were given the Prevention Assessment Tool (PAT). The

PAT is a recent addition and has only been used in a small number of counties. Not all juveniles received these risk assessments. Juvenile responses to questions from these assessments, such as their past and current alcohol use, their average grades in school, and their family's history with jail or imprisonment, were merged with the base juvenile information. This results in a final data set of 51,263 juveniles with both risk assessment and recidivism measures.

Variables

We created several variables using the above data sets to address the objectives and research questions outlined in the project proposal. The following section provides a brief description of each of the variables used in subsequent analyses.

Civil Citation

The primary variable of interest in this study is whether a juvenile eligible for civil citation actually received a civil citation or was instead arrested. This information was measured using a dummy variable, where 0 indicates that the juvenile was eligible for civil citation but did not receive it (arrested) and a 1 indicates that the juveniles was eligible for and received a civil citation. The variable at the individual level is used as both an outcome and a predictor in the subsequent analyses. For the analyses on the implementation and average use of civil citation across counties, the dummy variable was aggregated up to a county level measure of the number of juveniles that received civil citation for each month in each county in Florida from 2002 to 2016. A similar measure was created for the number of juveniles arrested in each county. These variables are used as outcomes in the county level analyses.

County Contextual Factors

To examine any county-level factors that might predict the relative use of civil citation, we included a number of county contextual variables in this study. The variables included

demographic descriptors: the percent of the county population that is black and the percent

Hispanic, youth density (percent of the population that is between the ages of 10 and 17), the

high school graduation rate, and the urbanization of the county as defined by population density

(number of individuals per square mile). The study also incorporated three economic indicators:

the poverty rate, the unemployment rate, and the median income for each county. Finally, a

number of crime and criminal justice indicators were included. Namely, the overall juvenile

arrest rate (including all arrests, not just those for civil citation eligible juveniles), the index

crime rate, and the number of law enforcement officers per capita.

Juvenile Demographics

Several demographic variables were included for each of the juveniles in our cohort.

These included their race, ethnicity (Hispanic or non-Hispanic), age, and gender. Race, ethnicity,

and gender are all dummy variables, while age is a continuous measure. We also included

dummy variables for the type of offense the juvenile committed (violent, property, drug, or

other). Finally, two additional dummy variables indicate whether or not the offense occurred on

school grounds, and whether the offense involved domestic violence.

Risk Factors

The RPACT and PAT assessments performed by FDJJ assess juveniles on a number of

potential risk factors. Questions that were similar across both instruments were included as

potential predictors of receiving civil citation. The first risk factor included is a dummy variable

indicating whether or not the juvenile had a history of prior misdemeanor referrals.

Approximately 2% of the sample reported that they did (see Table 3). Four questions assessed

the juvenile's involvement in education. Enrollment in school is measured with a dummy

variable indicating if the juvenile was enrolled or graduated at the time of the assessment, or if

they had been suspended or expelled. A second dummy variable, school problems, indicated whether or not the juvenile reported having any problems in school. The measure for school attendance was broken into three categories: a score of "1" indicated good attendance, "2" indicated the juvenile had some excused absences, and "3" indicated that the youth is a habitual truant. The final education variable was a categorical measure of the youth's GPA in their most recent school term.

Next, we included a series of dummy variables about the juveniles' home life. The first, "Run Away from Home" indicates whether or not the juvenile has ever run away or been kicked out of the home. The second variable, "Parental Problem History" measures if any parents currently involved in the household have a history of problems with drugs or alcohol. "Parental Jail History" indicates whether or not any parent currently in the household has a history of time spent in jail or prison. Two variables were used to indicate whether the juvenile reported any past or current alcohol use, and whether or not the juvenile reported any past or current drug use. Finally, three variables assess the juvenile's belief systems. The "Antisocial Beliefs" variable indicates that the youth does not accept responsibility for antisocial behavior or else embraces it as okay. "Conventional Beliefs" indicates whether or not the youth abides by conventional values. Finally, the last measure is a categorical variable capturing the juvenile's opinion on violent conflict resolution. A score of "1" indicates the juvenile responded that physical aggression is never appropriate; "2" indicates a response that physical regression is rarely appropriate; "3" indicates a response that physical aggression is sometimes appropriate; and "4" indicates that the juvenile responded that physical regression is often appropriate. A full listing of these variables and the average juvenile responses can be found in Table 3.

<u>Recidivism</u>

Recidivism was measured by any arrest that occurred after the juvenile completed civil

citation or their disposition following an arrest for a first-time misdemeanor offense. The first

recidivism measure is a dummy variable indicating whether or not the juvenile recidivated, as

measured by an arrest. Subsequent recidivism measures assess the timing to the recidivism event.

Dummy variables indicate whether or not the arrest occurred within 6 months, 1 year, or 3 years.

Methodology

Several analytic strategies were used to address the objectives of this project. The

majority of the outcomes are dichotomous in nature (civil citation or arrest; recidivated or did

not). Therefore, logistic regression is often used as the primary analysis in this study. However,

when examining the implementation of civil citation in terms of county-level influences and

changes over time, two additional types of analyses were conducted: time series and fixed

effects.

<u>Time Series Analysis</u>

An interrupted time series analysis was used to assess the implementation of civil citation

in each of Florida's 67 counties. This analysis is appropriate when examining changes in trends

from to before to after the implementation of a new program. Interrupted time series regressions

are typically estimated using one of two approaches: autoregressive integrated moving-average

(ARIMA) models or ordinary least-squares regression (OLS) models designed to adjust for

autocorrelation (Box & Jenkins, 1976; Linden, 2015). The methodology discussed below uses

the latter approach, employing the itsa command in Stata with controls for autocorrelation and

heteroskedasticity (Linden, 2015). The itsa command relies on OLS regression, as it is often

more flexible and broadly applicable in an interrupted time series context than typical ARIMA

models (Velicer & Harrop, 1983; Linden, 2015; Box et al., 2016). Each county in Florida received a separate analysis. The equation for each of these single-group interrupted time series analyses was as follows (Linden, 2015):

$$Y_t = \beta_0 + \beta_1 T_t + \beta_2 X_t + \beta_3 X_t T_t + e_t$$

In the equation, Y_t is the "aggregated outcome variable measured at each equally spaced time point t" (Linden, 2015: 2). T_t represents the amount of time since the beginning of the study, which in this case would be the number of months after January 2002. X_t is a dummy variable that represents the intervention point. If the time point is prior to the intervention it is 0, otherwise it is 1. β_0 represents the starting level of the outcome variables, for example, the number of arrests in one specific county in January 2002. β_1 is the slope of the dependent variable prior to the intervention, in other words, the pre-intervention trend. β_2 represents the change in the outcome that occurs directly after the intervention. For example, the change in the number of arrests from the month of the intervention to the month following. This demonstrates if there was any immediate effect of the intervention (Shadish et al., 2002). β_3 is the difference between the slopes in the outcome prior to and after the intervention. This variable identifies whether there was a gradual effect of the intervention over time (Shadish et al., 2002).

Fixed Effects Analysis

To assess the effects of county-level characteristics on the use of civil citation, we employed a two-way fixed effects analysis. When incorporating county level characteristics, observations were included for each variable in each counties over a period of 14 years (2003 to 2016). Because the data was in a panel format, there were likely to be problems with serial autocorrelation. Thus, the fixed effects methodology is appropriate when examining this type of data due to its ability to control for time and area-variant influences (Shadish et al., 2002).

Checks for multicollinearity and heteroskedasticity were also conducted. Evidence of heteroskedasticity was corrected by applying the robust standard error function to the final model.

RESULTS

Descriptive Statistics on Civil Citation in Florida

The Use of Civil Citation across Counties

The first research question in this study asks, what are the trends in the use of civil citation across Florida? As of July 2016 (the end of our data collection), 60 out of Florida's 67 counties had implemented a civil citation program. Of these 60 programs, 31% of them began prior to the 2011 state initiative (see Appendix A for a full list of implementation dates). However, none incorporated the non-arrest component until July of 2011. After the statewide initiative took effect, 41,297 juveniles received civil citation, and 71,663 juveniles who were eligible for civil citation, were arrested. As seen in Table 1, between July 2011 and July 2016, on average, civil citation in each county ranged from no use of the program (Bradford county), to 90% of eligible juveniles receiving a citation (Miami-Dade county). For the state as a whole, approximately 25% of eligible juveniles received a civil citation.

[Insert Table 1 about here]

Describing the Youth that Receive Civil Citation

We calculated descriptive statistics for the cohort of 110,088 juveniles eligible for civil citation between July 2011 and July 2016. Approximately 35% of the juveniles were black, 17% were Hispanic, 59% were male and, on average, 15 years old (see Table 2). Juveniles who commit a felony are not eligible for civil citation; as a result, 99.9% of the cohort was referred for a misdemeanor and 72 juveniles (.07%) committed a technical offense. As there was little

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variation in the seriousness of the offense, these variables were not included in the tables. In the whole cohort, 27.5% committed a violent offense, 37.7% committed a property offense, 21.9% committed a drug offense, and 12.8% committed an "other" offense. Finally, 24% of the juveniles committed their offense at school, and around 12% were referred for a domestic violence related offense.

[Insert Table 2 about here]

We divided demographic measures into categories by whether or not the juvenile was civilly cited or arrested. These demographics are presented in Table 2. We then performed a chi-square analysis between the two groups for each demographic variable to determine if there was any statistical indication of a relationship between the descriptor and receiving a civil citation. All of the variables, with the exception of gender and the "other" offense type, had a statistically significant association with civil citation at the $p<.05$ level. A larger percentage of civil citation juveniles were black or Hispanic than in the arrested group. On average, civil citation youths were slightly younger than their arrested counterparts, a larger percent committed their offense at school, and a smaller percent were involved in a domestic violence offense. Finally, civil citation youths were referred to FDJJ at a higher percentage for property and drug crimes and a lower percentage for violent crimes than the arrested youths.

[Insert Table 3 about here]

We next calculated descriptive statistics on some of the risk factors compiled from the RPACT and PAT assessments given to a portion of the cohort. As shown in Table 3, approximately 2% of the 51,263 juveniles had a prior misdemeanor referral. According to the school-related risk factors included in the assessment, 5% of juveniles were currently enrolled in school or had graduated, 40% reported having problems in school, the majority of students had

either good attendance or only occasional absences, and the average GPA was just under a 2.0. Of the total sample, 13% reported running away from home at some point, approximately 12% reported that their parents had a history of problems with drug or alcohol, and 21% reported that one or both of their parents had previously spent time in jail or prison. Twenty-two percent reported past or current use of alcohol and 41% reported past or current use of drugs. Finally, 22% reported embracing antisocial behaviors as acceptable, 73% of youth indicated that they abide by conventional values, approximately 84% of juveniles indicated they either did not or rarely believed that violence was an acceptable method of conflict resolution.

We performed a chi-square analysis on the sample of juveniles that received civil citation and those that did not, to determine if there was an association between any of the above-mentioned risk factors and receiving civil citation. Almost all of the risk factors had a significant association with a juvenile receiving a civil citation; current school enrollment and the past or current use of alcohol were the only exceptions.

Trends in the Implementation of Civil Citation Across Counties in Florida

Implementation of Civil Citation with Fidelity or Net Widening

To further answer research question one, we examined the trends in arrest across counties to determine if the implementation of civil citation led to a successful reduction in arrests or the unintended outcome of net widening. We conducted interrupted time series analyses for each county in Florida. These analyses revealed changing trends in arrest and the total first-time misdemeanor juvenile population coming into contact with the juvenile justice system. Table 4 presents the findings for the immediate intervention and pre-and post-intervention trend differences in the number of arrests for each county in Florida, including those that did not implement civil citation. Among the 19 counties that implemented civil citation prior to 2011 as

well as the 7 counties that did not implement, the introduction of the state initiative in July 2011 was used as the intervention point. For the remaining 41 counties, we used the actual month of implementation as the intervention point.

[Insert Table 4 about here]

There is evidence of an immediate effect of the implementation of civil citation on arrests in several counties. Twenty-one counties experienced a significant and immediate decrease in the number of arrests in the month following the intervention. These findings could indicate that in those counties, the implementation of the civil citation program with the non-arrest component resulted in an initial drop in juvenile arrests. There is also evidence of a gradual effect of civil citation on the number of arrests across counties. If the statewide implementation of the non-arrest component of civil citation were effective, we would expect to see significant reductions in the number of arrests over time. Out of Florida's 67 counties, 13 experienced a significant decrease in their juvenile arrests trends prior to and post-intervention; nine counties exhibited a significant increase in their arrest trends (Citrus, Gadsden, Gulf, Jefferson, Marion, Santa Rosa, Seminole, Sumter, Taylor), and 45 counties did not have any significant change in arrest trends after the statewide initiative.

[Insert Table 5 about here]

To determine if the changes in the number of arrests, or lack thereof, are indicative of net widening, we next examined the trends in the total number of first-time misdemeanor juveniles (civil citation eligible) who came into contact with the system, either through arrest or civil citation (Table 5). The analyses find that six counties experienced a significant immediate decline in the total number of civil citation eligible juveniles entering the juvenile justice system after the implementation of civil citation. The immediate increase in the number of juveniles

brought into the system would indicate that those counties experienced, at least initially, a net widening effect. This finding is further supported by the fact that all six of these counties experienced either a significant co-occurring decline in arrests or no significant change in arrests. Therefore, the immediate increase in the number of juveniles entering the FDJJ system can be attributed to civil citation. However, none of these counties experienced an additional gradual increase in the number of civil citation eligible juveniles coming into contact with the juvenile justice system (no significant positive difference between pre- and post-intervention trends), indicating the net widening effect was short lived.

Of the 21 counties that experienced a significant immediate decrease in arrests (see Tables 4 and 5), 13 of them also experienced no significant changes in the total number of civil citation eligible juveniles entering the system. This suggests that for those 13 counties there was an immediate successful implementation of the civil citation program.

Five counties exhibited a significant increase in the trend in the total number of eligible juvenile coming into contact with the justice system after the statewide initiative and implementation of civil citation (Gulf, Putnam, Santa Rosa, Sumter, Taylor). Four of these counties also experienced a corresponding increase in arrest trends (Gulf, Santa Rosa, Sumter, Taylor) that might provide an explanation for the increase in the eligible juvenile population beyond net widening. There is evidence of a gradual net widening effect in only one county (Putnam). Putnam County had no significant changes in the number of arrests over time, along with a corresponding gradual increase the total civil citation eligible juvenile population coming into contact with the justice system, indicating that the county was using civil citation as a supplement to arrests, rather than as an alternative.

Finally, nine counties exhibited no significant change in their trends of the total number of eligible juveniles who came into contact with the justice system, while also exhibiting a significant reduction in the trends in the number of arrests per month. The drop in arrests with no change in the total population indicates that for these counties, arrests are being replaced with civil citation. Overall, the findings from these analyses indicate that the implementation of civil citation across the state resulted in a minimal amount of net widening, with 6 counties experiencing it temporarily and only one county experiencing it in the long-term. In general, the majority of counties either experienced a significant long-term reduction in arrests after implementation (9) or no significant changes (47).

Predictors of Civil Citation

Research question two addressed the differences in the use of civil citation across counties. Specifically, what are the differences in terms of what juveniles are receiving civil citation (types of delinquent acts and juvenile characteristics), and what overarching county-level characteristics might explain different levels of use. The following sections on individual- and county-level predictors of civil citation address these questions.

Individual Level Predictors of Civil Citation

We explored the implementation of civil citation by examining what characteristics make juveniles more or less likely to receive civil citation across counties. For the first analysis, we performed a logistic regression for the effects of the juvenile demographic and offense characteristics on the likelihood of receiving civil citation (N=110,088).

[Insert Table 6 about here]

The juvenile's age, race, and ethnicity were not significant predictors of receiving civil citation. However, males were significantly less likely to receive civil citations than were

females (p<.05). Specifically, males were approximately 8% less likely than females to receive a civil citation. With Offense Type – Other as the reference category, juveniles that committed a property offense were significantly more likely to receive a civil citation. Finally, juveniles with an offense that occurred at school were 52% more likely to receive a civil citation, while juveniles with a domestic violence offense were approximately 71% less likely to receive civil citation. These findings suggest that juveniles with more serious offenses, such as domestic violence or violent related incidents, are less likely to receive a civil citation.

[Insert Table 7 about here]

Logistic regressions were then estimates for the subsample of juveniles that were given risk assessments by FDJJ (N=51,263). The first model included the demographic and offense predictor variables (see Table 6). Only the school and domestic violence offense measured remained significant in this sample. The second model in the analysis included the risk factors from the RPACT and PAT assessments. Similar to the findings in Table 5, gender, property offense, and domestic violence offenses were all significant in the same direction. In addition, the juvenile's school attendance, GPA, parental problem history, and past or current drug use all had a significant association with the likelihood of receiving civil citation. More specifically, juveniles who reported greater truancy and those with higher GPAs were less likely to receive a civil citation. Juveniles who indicated that their parents had a history of problems with drugs or alcohol were more likely to receive civil citation, as well as juveniles who had a history of drug use themselves.

County Level Predictors of Civil Citation

Along with individual-level differences in the likelihood of receiving civil citation, it is also likely there are county-level factors that influence the relative use of the civil citation

program. To this end, we performed a two-way fixed effects analysis on the effects of county contextual factors on a county's use of civil citation. Use of civil citation for each county was measured as the rate of civil citations given among the total civil citation eligible juvenile offender population. Table 1 displays the average rates for each county.

[Insert Table 8 about here]

As seen in Table 8, only four county contextual predictors were significant at the $p<.1$[1] level. Counties with a higher high school graduation rate were associated with a significantly lower rate of civil citation. Counties with a higher median income were significantly less likely to use civil citation. More urban counties were significantly more likely to use civil citation. Finally, the implementation of the state initiative in 2011 was significantly associated with an increased rate of civil citation. These findings suggest that counties with a denser, or more urban population, lower socioeconomic status residents, and a less academically successful juvenile population were more likely to implement civil citation at a higher rate.

The Effect of Civil Citation versus Formal Arrest in Reducing Recidivism

The final objective of this project was to assess whether civil citation is successful in reducing the likelihood that a juvenile will engage in further delinquent activity. To this end, we examined the association between receiving civil citation and the likelihood of the juvenile recidivating, as measured by subsequent arrest. Table 9 presents descriptive Statistics for all variables in the recidivism analyses, broken down by the subsamples that were included for each recidivism outcome.

[Insert Table 9 about here]

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[1] Due to the small size in this analysis, a standard of $p<.1$ was used to determine significance.

Table 10 presents descriptive statistics on the recidivism measures for the total cohort, as well as the cohort broken out by those that received civil citation and juveniles that were eligible for civil citation but arrested. Of the juveniles given civil citation, only those that successfully completed the program were included in the recidivism analyses: 38,964 juveniles received civil citation, with 31,624 (81%) of those juveniles successfully completing the program.

Approximately 24% of the cohort was rearrested during the study period. Fifteen percent of juveniles that received civil citation recidivated, while approximately 28% of missed opportunities juveniles recidivated. A similar pattern emerged when examining arrest at each follow-up period, from six months after their initial referral, to three years. A chi-squared analysis between each recidivism measure and the civil citation variable produced a significant association for all measures.

[Insert Table 10 about here]

Next, logistic regression models estimated the effects of civil citation on the recidivism outcomes, including the juvenile demographics and offense variables as control measures. Table 10 presents the results of these analyses. The model for whether the juvenile was arrested at all during the study period included all juveniles from the cohort. However, for each variable assessing whether an arrest occurred during a specific follow-up period, only juveniles with a referral date early enough to allow the follow-up period were included in the analysis. For example, only juveniles referred for their initial offense on or before July 2015 were included in the 1-year follow-up (see Table 9 for descriptive statistics on each sample).

[Insert Table 11 about here]

As shown in Table 11, juveniles who received a civil citation were significantly less likely to recidivate than the arrested juveniles by approximately 54%. The effect of civil citation

on the likelihood of re-arrest remains significant at the 6-month, 1-year, and 3-year follow-up periods. However, the odds of recidivating increase slightly at later time periods. At 6 months, juveniles that completed civil citation were 49% less likely to be arrested; at one-year civil citation juveniles were 44% less likely to recidivate; and at 3 years juveniles with civil citation were 31% less likely to recidivate than arrested juveniles.

[Insert Table 12 about here]

The analyses were next repeated with the data set including risk factors from the RPACT and PAT assessments. Descriptive statistics for this the samples including risk factors are presented in Table 12. With this sample, civil citation was only a significant predictor of recidivism in the model with the arrest dummy variable as an outcome, still in the expected direction (see Table 13). The likelihood of recidivating at 6 months, 1-year, and 3-years was not significantly associated with receiving civil citation.[2]

[Insert Table 13 about here]

IMPLICATIONS FOR RESEARCH AND POLICY

The findings from this study suggest that the implementation and use of civil citation vary considerably across counties. Currently, 60 out of Florida's 67 counties have implemented a civil citation program, with the majority of those occurring after the 2011 state initiative. For those counties that have implemented the program, their actual use of civil citation ranges from approximately .01% of eligible juveniles (Levy County) to just over 90% of eligible juveniles (Miami-Dade County). Only a small number of counties showed evidence of a successful implementation of the program in the long-term. Thirteen counties demonstrated a significant drop in arrests with no change in the number of juveniles coming into contact with the juvenile

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[2] Because these analyses used the smaller sample of juveniles with risk assessments, the models were also estimated using only the predictors from Table 10. Civil citation was insignificant in those models as well.

justice system immediately after the implementation of civil citation. However, only nine counties demonstrated a similar long-term effect of replacing arrest with civil citation. Six counties actually demonstrated an immediate net-widening effect, with arrests going down or staying the same, but the total number of civil citation eligible juveniles in the system going up. More importantly, however, only one county exhibited a long-term net widening effect. Therefore, it can be concluded that the majority of counties in Florida implemented civil citation without falling into the trap of net widening—supplementing arrest with civil citation rather than using it as an alternative. However, although a majority of Florida's counties use civil citation, only a small percent are using it at a significant level.

A number of county contextual factors were found to have a significant effect on the rate of civil citation use across counties. High school graduation rates, median income, and urbanization were all significantly associated with increases in the use of civil citation. These findings suggest that more rural counties with higher graduation rates and more residents with higher incomes are less likely to use civil citation than more urban counties with lower income residents and lower graduation rates.

Along with differences in implementation, there also appear to be significant differences among which juveniles are most likely to receive civil citation. The findings demonstrate that among demographic characteristics, gender was the only significant predictor of civil citation among juveniles. Female juveniles are significantly more likely than their male counterparts to receive civil citations. However, a number of offense characteristics were predictive of civil citation. For example, juveniles who committed property offenses were significantly more likely to receive a civil citation, while juveniles whose offense involved domestic violence were far less likely to receive a civil citation. These findings could be reflective of the factors officers

take into account when deciding whether or not to issue a citation. It appears that juveniles who could be deemed as harmful to others are less likely to receive civil citation. When additional risk factors were incorporated into the model, it also became apparent that juveniles with greater exposure to substance abuse—either their own or their parents'—were more likely to receive this particular diversion program. In addition, juveniles with higher truancy were less likely to receive civil citation. Interestingly, however, juveniles with better performance in school, as measured through GPA were significantly less likely to receive civil citation over arrest. This relationship should be explored further in future research.

The final goal of this project was to determine whether civil citation, as opposed to arrest, resulted in a reduced likelihood of future recidivism among juvenile offenders. The findings suggest that civil citation does have a significant effect on reducing the likelihood of re-arrest within a 6-month, one-year, and three-year follow up of the juvenile receiving their initial referral. At the 6-month follow up, civil citation reduced the likelihood of recidivism by nearly 50%, and at three years, civil citation juveniles are still 30% less likely to recidivate.

Policy Implications

A number of policy implications arise from these findings. First, the trends in arrest and the number of juveniles coming to contact with FDJJ found in this study indicate that the implementation of civil citation varies considerably across Florida's counties. Although civil citation is part of a statewide initiative, municipalities and their various agencies can choose whether to participate in the program. As a result, the implementation of civil citation and its fidelity across counties is inconsistent. The 2011 statewide initiative highlighted Florida's commitment to the expansion and success of the civil citation program. In order to further expand the implementation of civil citation as well as its proper use, future policy initiative

should focus on the fidelity of implementation across and within counties. Improving

implementation fidelity may not only increase the use but also the desired results of civil citation.

Long-term use of civil citation might also be improved by providing occasional statewide

yearly trainings or stakeholder conferences on the program. The findings from the time series

analyses suggested that after an initial jump in civil citation, most counties experienced a decline

in its use over time. This suggests that a certain level of maintenance may be required to ensure

the successful implementation of a county's civil citation program. The provision of additional

statewide efforts to promote or improve the program could facilitate more stable long-term

implementation.

Finally, although the regression estimates found that juveniles who completed civil

citation were significantly less likely to recidivate than those who were arrested, the program

could be improved by targeting it towards the juveniles that are most likely to benefit. A number

of risk factors were associated with both receiving civil citation and a reduced likelihood of

offending in the future. However, risk assessments for juveniles with civil citation (the PAT) are

used in only a limited number of counties. Expanding the use of the risk assessment amongst a

larger number of juveniles could provide a better picture of which juveniles are most likely to

benefit from the program.

Limitations and Future Research

There were several limitations to this study that could be improved upon in future

research. The individual-level data included a limited number of variables, namely the juvenile's

age, race, ethnicity, gender, and offense information. The RPACT risk assessment that FDJJ

performs for all juveniles that are arrested provides a number of risk factors for each juvenile and

the PAT provides similar measures for civil citation juveniles. However, the PAT was only

recently put into use and it is only administered in a small number of counties. Therefore, the juveniles with PATs may not necessarily be representative of all juveniles who receive a civil citation. As such, the findings on which risk factors are associated with juvenile receiving civil citation versus arrest may not be accurate, as they only represent a small percentage of the total number of civil citation eligible juveniles. The same bias could also apply to the recidivism models. Policymakers should encourage the collection of this type of detailed information on a greater number of juveniles in a larger number of counties to allow for future research to better understand which juveniles are more likely to receive civil citation and the factors that may make it more or less likely they will succeed in the program.

Another important factor in determining which juveniles are likely to receive civil citation is the decision making process of the officers themselves. The majority of civil citations are handed out by law enforcement at the time of the offense. It is ultimately up to their discretion who gets civil citation and who does not. Therefore, information on officers would be useful measures to include in any model predicting the use of civil citation. That information was not available for this study. Future research should explore the factors that may impact an officer's decision to assign a juvenile to civil citation instead of making an arrest. In addition, future research should also explore the role of different municipalities in the implementation of the civil citation program as a whole. Although civil citation is part of a statewide initiative, the implementation and use of the program is largely local. The different municipalities within each county can choose whether or not to incorporate a civil citation program and what that program will look like outside of the basic requirements outlined by the state statute. Therefore, a mixed methods approach should be used to study stakeholders within each county and municipality to better understand the barriers to the implementation of civil citation and its subsequent use.

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TABLES AND FIGURES

Table 1. Average Use of Civil Citation per Month by County and State from 2011 to 2016

County	Rate of Use	Number of Citations	County	Rate of Use	Number of Citations
Alachua	0.458	13	Lake	0.228	7
Baker	0.358	1	Lee	0.243	14
Bay	0.274	12	Leon	0.606	19
Bradford	0.000	0	Levy	0.032	.06
Brevard	0.267	13	Liberty	0.183	.13
Broward	0.481	61	Madison	0.135	.38
Calhoun	0.000	0	Manatee	0.126	4
Charlotte	0.172	4	Marion	0.583	25
Citrus	0.373	4	Martin	0.293	4
Clay	0.120	3	Monroe	0.785	7
Collier	0.402	17	Nassau	0.299	2
Columbia	0.177	1	Okaloosa	0.094	2
Miami-Dade	0.903	127	Okeechobee	0.143	1
Desoto	0.126	1	Orange	0.151	19
Dixie	0.043	.01	Osceola	0.129	5
Duval	0.264	21	Palm Beach	0.297	28
Escambia	0.323	14	Pasco	0.461	22
Flagler	0.274	2	Pinellas	0.817	93
Franklin	0.133	.21	Polk	0.000	0
Gadsden	0.180	1	Putnam	0.240	2
Gilchrist	0.098	.13	Santa Rosa	0.218	3
Glades	0.189	.09	Sarasota	0.117	2
Gulf	0.037	.02	Seminole	0.486	24
Hamilton	0.113	.10	St Johns	0.458	8
Hardee	0.000	0	St Lucie	0.176	5
Hendry	0.168	1	Sumter	0.010	.51
Hernando	0.427	10	Suwannee	0.084	.51
Highlands	0.056	1	Taylor	0.000	0
Hillsborough	0.342	47	Union	0.561	1
Holmes	0.155	.36	Volusia	0.250	14
Indian River	0.275	3	Wakulla	0.639	2
Jackson	0.056	.31	Walton	0.016	.23
Jefferson	0.290	.28	Washington	0.000	0
Lafayette	0.250	.06	*State Total*	*0.250*	*10*

Table 2. Descriptive Statistics on Youth Demographics and Offense Variables

Youth Variables	Total		Civil Citation		Arrested	
	Mean	SD	Mean	SD	Mean	SD
Black*	.354	.48	.358	.48	.352	.48
Hispanic*	.173	.38	.218	.41	.148	.35
Age*	14.9	1.78	14.9	1.76	15.0	1.79
Male	.591	.49	.588	.49	.592	.49
Offense Type – Violent*	.275	.45	.180	.38	.329	.47
Offense Type – Property*	.377	.48	.449	.50	.336	.47
Offense Type – Drug*	.219	.41	.240	.43	.208	.40
Offense Type - Other	.128	.33	.130	.34	.127	.33
Offense at School*	.237	.42	.291	.45	.207	.40
Domestic Violence Offense*	.124	.33	.037	.19	.174	.38

N = 110,088
Civil Citation N = 39,594
Arrest N = 70,494
*p<.05

Table 3. Descriptive Statistics on Youth Risk Factors

Youth Risk Factors	Total		Civil Citation		Arrested	
	Mean	SD	Mean	SD	Mean	SD
Prior Misdemeanor Referrals*	.017	.13	.022	.15	.016	.12
Current School Enrollment	.050	.22	.055	.23	.049	.22
School Problems*	.399	.49	.419	.49	.395	.49
School Attendance*	1.359	.56	1.254	.49	1.377	.57
GPA*	1.922	.93	1.818	.97	1.940	.92
Run Away from Home*	.132	.34	.114	.32	.135	.34
Parental Problem History*	.116	.32	.144	.35	.111	.31
Parental Jail History*	.210	.41	.220	.41	.209	.41
Past or Current Alcohol Problem	.226	.42	.218	.41	.227	.42
Past or Current Drug Problem*	.407	.49	.668	.47	.361	.48
Antisocial Beliefs*	.221	.41	.234	.42	.219	.41
Conventional Values*	.729	.44	.707	.45	.732	.44
Belief in Violent Conflict Resolution*	1.555	.79	1.572	.78	1.552	.79

N = 51,263
Civil Citation N = 7,699
Arrest N = 43,564
*p<.05

Table 4. Times Series Analysis on Arrests in Counties

County	Time Series Outcomes			
	Immediate Intervention		Pre- vs. Post-Intervention Trend	
	β	SE	β	SE
Implemented Before 2011				
Brevard	-20.933 **	6.21	-0.058	0.15
Citrus	-3.992 **	0.95	0.065 **	0.02
Miami-Dade	4.043	6.62	1.822 **	0.18
Flagler	-3.180	1.62	-0.171 **	0.03
Hernando	-3.189 *	1.57	-0.077 *	0.04
Hillsborough	-67.219 **	14.32	0.413	0.33
Indian River	0.266	2.10	-0.182 **	0.05
Lee	1.184	6.41	-0.403	0.15
Leon	-0.187	1.54	0.005	0.03
Marion	-2.269	2.76	0.229 **	0.07
Monroe	-4.625 **	1.03	0.006	0.01
Okeechobee	-0.729	1.58	0.021	0.04
Pasco	-8.296 *	3.37	-0.229 **	0.07
Pinellas	-25.075 **	9.54	0.574 **	0.21
Putnam	-2.428	2.15	0.030	0.05
Santa Rosa	-7.699 **	1.61	0.129 **	0.04
St Johns	-4.711 *	1.82	-0.036	0.04
St Lucie	-10.514 **	3.76	-0.113	0.08
Wakulla	-0.586	0.47	0.012	0.01
Implemented After 2011				
Alachua	2.951	2.30	-0.152 **	0.05
Baker	-2.793 **	0.64	0.011	0.02
Bay	-15.356	12.10	0.030	0.39
Broward	-95.476 **	15.21	-1.413 **	0.34
Charlotte	-0.496	2.16	-0.029	0.05
Clay	-1.896	2.93	-0.064	0.11
Collier	-9.968 **	3.22	-0.213 **	0.07
Columbia	-0.301	1.25	0.015	0.03
Desoto	1.704	1.00	-0.111 *	0.04
Dixie	0.892	0.51	-0.032	0.02
Duval	-25.898 **	9.85	0.173	0.30
Escambia	-6.657	5.00	-0.228	0.14
Franklin	-0.619	0.37	0.011	0.01
Gadsden	-2.020 *	0.83	0.045 *	0.02

Gilchrist	-0.921	0.48	0.039	0.02
Glades	-0.706	0.37	-0.001	0.01
Hamilton	-0.348	0.48	0.038	0.02
Hendry	1.010	1.29	0.008	0.03
Highlands	-2.873	1.79	0.064	0.13
Holmes	-0.551	0.54	-0.007	0.01
Jackson	-0.493	0.82	-0.002	0.04
Jefferson	-0.787 **	0.24	0.011 *	0.00
Lafayette	-0.230	0.13	0.009	0.01
Lake	-8.102 *	3.45	-0.245 **	0.07
Levy	-0.000	0.89	-0.000	0.05
Liberty	0.272	0.26	0.001	0.01
Madison	-0.734	0.85	-0.008	0.02
Manatee	-11.413 *	4.88	-0.155	0.38
Martin	0.093	2.13	-0.245 **	0.04
Nassau	2.267	1.23	-0.045	0.03
Okaloosa	-11.774	8.06	0.076	0.21
Orange	-16.814	11.66	-0.606	0.38
Osceola	-11.944 *	5.55	-0.397 **	0.15
Palm Beach	-20.361 **	4.96	-0.516 **	0.15
Sarasota	-4.074	2.74	-0.414	0.54
Seminole	-32.204 **	3.31	0.209 *	0.09
Sumter	-0.478	0.81	0.067 **	0.02
Suwannee	-1.162	1.13	0.062	0.07
Union	0.110	0.35	-0.013	0.01
Volusia	4.641	6.46	-0.373 *	0.16
Walton	-0.926	11.20	-0.073	0.52
No Implementation				
Bradford	-1.043	0.67	0.029	0.02
Calhoun	0.101	0.42	0.007	0.01
Gulf	-0.658	0.48	0.027 *	0.01
Hardee	-0.095	0.90	-0.032	0.02
Polk	-11.481	9.38	-0.186	0.21
Taylor	-0.822	0.53	0.042 **	0.01
Washington	0.325	0.56	0.002	0.01

Table 5. Time Series Analysis on Total Eligible Juveniles in Counties

County	Time Series Outcomes			
	Immediate Intervention		Pre- vs. Post-Intervention Trend	
	β	SE	β	SE
Implemented Before 2011				
Brevard	-11.912 *	6.01	-0.457 **	0.14
Citrus	2.405	1.60	0.022	0.04
Miami-Dade	-82.129 **	19.57	-1.946 **	0.47
Flagler	-2.143	1.85	-0.131 **	0.04
Hernando	9.313 *	3.79	-0.185 *	0.09
Hillsborough	-33.318	18.14	-0.436	0.41
Indian River	-1.826	2.04	-0.091	0.06
Lee	-3.615	7.38	-0.414 *	0.19
Leon	-3.082	3.74	-0.053	0.08
Marion	8.414	7.41	0.015	0.21
Monroe	-3.964	2.20	0.004	0.04
Okeechobee	-0.186	1.71	0.023	0.04
Pasco	12.302 **	4.61	-0.166	0.12
Pinellas	61.304 **	14.14	0.593	0.40
Putnam	-0.203	2.29	0.130 *	0.05
Santa Rosa	-4.323 *	1.66	0.121 **	0.04
St Johns	-2.103	2.92	-0.067	0.07
St Lucie	-18.527 **	4.75	-0.085	0.11
Wakulla	-0.419	1.07	-0.028	0.02
Implemented After 2011				
Alachua	5.134	3.06	-0.067	0.07
Baker	-1.919 **	0.67	0.019	0.02
Bay	26.773	26.02	-1.049	1.21
Broward	-53.003 **	14.05	-0.643 *	0.38
Charlotte	0.935	2.51	0.013	0.07
Clay	-1.137	3.64	-0.060	0.16
Collier	3.027	6.64	-0.197	0.17
Columbia	0.576	1.21	0.022	0.03
Desoto	2.913 *	1.15	-0.139 **	0.05
Dixie	0.888	0.51	-0.030	0.02
Duval	1.386	11.07	-0.350	0.36
Escambia	3.411	7.09	0.110	0.22
Franklin	-0.569	0.42	0.025	0.01
Gadsden	0.253	1.45	0.062	0.03

Gilchrist	-0.814	0.51	0.042	0.02
Glades	-0.701	0.38	0.002	0.01
Hamilton	-0.212	0.48	0.034	0.02
Hendry	2.373	1.72	-0.014	0.05
Highlands	-1.648	1.99	0.049	0.13
Holmes	0.514	0.79	-0.037	0.02
Jackson	0.685	1.15	-0.038	0.05
Jefferson	-0.761 *	0.37	-0.002	0.01
Lafayette	0.156	0.26	-0.009	0.01
Lake	-4.155	3.86	-0.135	0.09
Levy	0.173	0.87	-0.006	0.05
Liberty	0.377	0.29	0.000	0.01
Madison	0.270	0.91	-0.030	0.02
Manatee	1.003	5.28	-0.315	0.43
Martin	3.251	2.47	-0.243 **	0.05
Nassau	4.464 **	1.41	-0.055	0.04
Okaloosa	-11.114	8.03	0.102	0.21
Orange	-11.550	13.19	-0.542	0.44
Osceola	-11.067	5.84	-0.222	0.16
Palm Beach	-8.437	9.33	0.778	0.48
Sarasota	3.521	3.16	0.747	0.90
Seminole	-4.474	4.65	0.261	0.15
Sumter	-0.269	0.91	0.085 **	0.03
Suwannee	-0.361	1.55	0.104	0.11
Union	1.569 **	0.48	-0.028	0.02
Volusia	10.551	6.49	-0.016	0.17
Walton	-0.344	11.58	-0.087	0.54
No Implementation				
Bradford	-1.086	0.66	0.027	0.02
Calhoun	0.104	0.42	0.007	0.01
Gulf	-0.591	0.48	0.027 *	0.01
Hardee	-0.095	0.90	-0.032	0.02
Polk	-11.703	9.39	-0.185	0.21
Taylor	-0.830	0.53	0.042 **	0.01
Washington	0.325	0.56	0.002	0.01

Table 6. Logistic Regression on Individual Level Predictors of Civil Citation

Individual Level Predictors	Civil Citation	
	Odds Ratio	SE
Black	1.145	.25
Hispanic	1.736	.82
Age	0.973	.02
Male	0.918 *	.04
Offense Type - Violent	0.866	.10
Offense Type - Property	1.539 **	.22
Offense Type - Drug	1.259	.23
Offense at School	1.528 *	.28
Domestic Violence Offense	0.288 ***	.10

N = 110,088
*p<.05; **p<.01; ***p<.001
Note: Offense Type – Other omitted as a reference category

Table 7. Logistic Regression on Risk Assessment Factors as Predictors of Civil Citation

Individual Level Predictors	Civil Citation			
	Model 1		Model 2	
	Odds Ratio	SE	Odds Ratio	SE
Black	1.317	.33	1.405	.34
Hispanic	1.463	.48	1.510	.47
Age	1.014	.03	0.961	.03
Male	0.923	.05	0.827 **	.05
Offense Type - Violent	0.964	.20	1.019	.20
Offense Type - Property	1.676	.52	1.779 *	.52
Offense Type - Drug	1.343	.37	0.773	.21
Offense at School	1.419 *	.25	1.422	.27
Domestic Violence Offense	0.292 *	.15	0.254 **	.13
Prior Misdemeanor Referrals			1.321	.50
School Problems			0.980	.07
School Attendance			0.484 **	.12
GPA			0.850 ***	.04
Run Away from Home			0.819	.14
Parental Problem History			1.479 **	.18
Parental Jail History			0.957	.19
Past or Current Drug Use			4.757 ***	1.45
Antisocial Beliefs			1.120	.16
Conventional Values			1.010	.12
Belief in Violent Conflict Resolution			1.087	.05

N = 51,263
*p<.05; **p<.01; ***p<.001
Note: Offense Type – Other omitted as a reference category

Table 8. Fixed Effects Analysis on County Predictors of Civil Citation

Independent Variables	Civil Citation Rate	
	β	SE
Percent Black	1.468	0.96
Percent Hispanic	0.110	0.82
Youth Density	0.402	1.87
Poverty Rate	0.564	0.36
Unemployment Rate	-0.626	0.80
Graduation Rate	-1.103 *	0.65
Juvenile Arrest Rate	-0.093	0.23
Median Income	-2.648 **	1.23
Crime Rate	-0.059	0.62
Urbanization	4.489 ***	1.36
Law Enforcement Officers per Capita	0.807	0.49
Post 2011 State Initiative	4.340 ***	0.74

N = 938
*p<.1; **p<.05; ***p<.001

Table 9. Descriptive Statistics for Recidivism Analytic Samples

Variables	Arrested (Y/N) (N = 102,024)		Arrested at 6 Months (N = 89,725)		Arrested at 1 Year (N = 81,992)		Arrested at 3 Years (N = 43,266)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Recidivism Outcome	0.24	0.43	0.10	0.30	0.17	0.37	0.32	0.46
Civil Citation	0.31	0.46	0.29	0.46	0.29	0.45	0.23	0.42
Age	15.00	1.78	14.99	1.78	14.98	1.78	14.96	1.78
Male	0.59	0.49	0.59	0.49	0.59	0.49	0.59	0.49
Black	0.34	0.47	0.35	0.48	0.35	0.48	0.35	0.47
Hispanic	0.17	0.38	0.17	0.37	0.17	0.37	0.16	0.37
Offense at School	0.23	0.42	0.23	0.42	0.23	0.42	0.22	0.41
Domestic Violence	0.13	0.33	0.12	0.33	0.12	0.33	0.12	0.32
Offense Type - Violent	0.28	0.45	0.27	0.44	0.27	0.44	0.27	0.44
Offense Type - Property	0.38	0.48	0.38	0.49	0.38	0.48	0.39	0.49
Offense Type - Drug	0.22	0.41	0.22	0.41	0.22	0.41	0.21	0.41
Offense Type - Other	0.13	0.33	0.12	0.33	0.13	0.33	0.13	0.33

Table 10. Descriptive Statistics and Chi-Square Analysis for Recidivism Outcomes

Recidivism Outcomes	Total		Civil Citation		Arrested	
	Mean	SD	Mean	SD	Mean	SD
Arrested after completed disposition*	.243	.43	.151	.36	.285	.45
Arrested within 6 months*	.091	.29	.050	.22	.109	.31
Arrested within 1 year*	.141	.35	.085	.28	.167	.37
Arrested within 3 years*	.226	.42	.143	.35	.263	.44

Total N = 102,024
Civil Citation N = 31,620
Arrested N = 70,404
*p<.001 (chi-square analysis)

Table 11. Logistic Regression Models for the Effect of Civil Citation on Recidivism

Independent Variables	Recidivism Outcomes: Arrest							
	Arrest (Y/N) (N = 102,204)		6 Months (N = 89,725)		1 Year (N = 81,992)		3 Years (N = 43,266)	
	OR	SE	OR	SE	OR	SE	OR	SE
Civil Citation	0.463*	0.04	0.510*	0.04	0.557*	0.04	0.689*	0.04
Age	0.922*	0.01	0.962*	0.01	0.957*	0.01	0.918*	0.01
Male	1.817*	0.05	1.762*	0.04	1.804*	0.04	1.950*	0.07
Black	1.620*	0.06	1.695*	0.07	1.701*	0.06	1.749*	0.07
Hispanic	1.069	0.07	1.123	0.07	1.101	0.07	1.087	0.06
Offense at School	0.968	0.05	0.928	0.05	0.968	0.05	1.040	0.05
Domestic Violence	1.448*	0.07	1.737*	0.09	1.656*	0.08	1.652*	0.09
Offense Type - Violent	0.730*	0.03	0.698*	0.04	0.750*	0.03	0.796*	0.05
Offense Type - Property	0.714*	0.04	0.633*	0.04	0.644*	0.04	0.691*	0.06
Offense Type - Drug	0.841*	0.06	0.761*	0.06	0.803	0.06	0.858	0.07

*$p<.001$

Note: Offense Type – Other omitted as a reference category

Table 12. Descriptive Statistics for Recidivism Analytic Samples with Risk Factors

Variables	Arrested (Y/N) (N = 48,416)		Arrested at 6 Months (N = 45,672)		Arrested at 1 Year (N = 41,692)		Arrested at 3 Years (N = 21,880)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Recidivism Outcome	0.32	0.46	0.14	0.34	0.21	0.41	0.38	0.49
Civil Citation	0.11	0.31	0.10	0.30	0.09	0.28	0.0.03	0.17
Age	14.89	1.73	14.89	1.74	14.88	1.73	14.86	1.73
Male	0.60	0.49	0.60	0.49	0.60	0.49	0.60	0.49
Black	0.37	0.48	0.37	0.48	0.37	0.48	0.37	0.48
Hispanic	0.16	0.37	0.16	0.37	0.16	0.36	0.15	0.36
Offense at School	0.23	0.42	0.23	0.42	0.24	0.42	0.24	0.43
Domestic Violence	0.18	0.38	0.18	0.38	0.18	0.38	0.17	0.38
Offense Type - Violent	0.32	0.47	0.32	0.47	0.32	0.47	0.32	0.46
Offense Type - Property	0.36	0.48	0.36	0.48	0.36	0.48	0.35	0.48
Offense Type - Drug	0.18	0.39	0.18	0.39	0.19	0.39	0.19	0.39
Offense Type - Other	0.13	0.34	0.13	0.34	0.13	0.34	0.14	0.34
Prior Misdemeanor Referrals	0.01	0.12	0.01	0.12	0.01	0.12	0.02	0.12
School Problems	0.39	0.49	0.39	0.49	0.39	0.49	0.40	0.49
School Attendance	1.35	0.55	1.35	0.55	1.36	0.56	1.37	0.56
GPA	1.94	0.92	1.94	0.92	1.94	0.92	1.93	0.91
Run Away from Home	0.13	0.33	0.13	0.33	0.13	0.33	0.13	0.33
Parental Problem History	0.11	0.31	0.11	0.32	0.11	0.31	0.11	0.31
Parental Jail History	0.20	0.40	0.20	0.40	0.20	0.40	0.20	0.40
Past or Current Drug Use	0.39	0.49	0.39	0.49	0.38	0.49	0.34	0.47
Antisocial Beliefs	0.21	0.41	0.21	0.41	0.22	0.41	0.22	0.41
Conventional Values	0.74	0.44	0.74	0.44	0.73	0.44	0.73	0.44
Belief in Violence	1.54	0.78	1.54	0.78	1.55	0.78	1.57	0.79

Table 13. Logistic Regression Models for the Effect of Civil Citation on Recidivism with Risk Predictors

Independent Variables	Recidivism Outcomes: Arrest							
	Arrest (Y/N) (N = 48,416)		6 Months (N = 45,672)		1 Year (N = 41,692)		3 Years (N = 21,880)	
	OR	SE	OR	SE	OR	SE	OR	SE
Civil Citation	0.353*	0.08	0.614	0.19	0.603	0.16	1.015	0.22
Age	0.907*	0.01	0.934*	0.01	0.929*	0.01	0.894*	0.01
Male	1.835*	0.05	1.735*	0.05	1.755*	0.04	1.919*	0.08
Black	1.606*	0.07	1.674*	0.08	1.708*	0.07	1.772*	0.07
Hispanic	0.950	0.05	1.013	0.07	1.009	0.06	0.948	0.05
Offense at School	0.803*	0.03	0.737*	0.03	0.769*	0.03	0.785*	0.03
Domestic Violence	1.221*	0.06	1.212*	0.08	1.210*	0.07	1.221*	0.07
Offense Type - Violent	0.713*	0.04	0.735*	0.04	0.769*	0.05	0.799*	0.05
Offense Type - Property	0.724*	0.04	0.670*	0.04	0.686*	0.03	0.727*	0.04
Offense Type - Drug	0.834*	0.05	0.698*	0.05	0.766*	0.04	0.792*	0.06
Prior Misdemeanor Referrals	3.460*	0.45	3.852*	0.72	3.328*	0.58	2.960*	0.54
School Problems	1.343*	0.04	1.297*	0.06	1.283*	0.05	1.375*	0.05
School Attendance	1.155*	0.04	1.220*	0.04	1.213*	0.04	1.153*	0.04
GPA	0.847*	0.01	0.821*	0.02	0.819*	0.02	0.832*	0.02
Run Away from Home	1.682*	0.05	1.796*	0.05	1.792*	0.05	1.641*	0.07
Parental Problem History	1.001	0.03	1.008	0.04	0.997	0.04	1.035	0.07
Parental Jail History	1.170*	0.03	1.104*	0.04	1.161*	0.03	1.254*	0.04
Past or Current Drug Use	1.424*	0.08	1.638*	0.09	1.644*	0.09	1.739*	0.07
Antisocial Beliefs	1.146*	0.04	1.159*	0.06	1.132*	0.05	1.140*	0.05
Conventional Values	0.884*	0.03	0.817*	0.03	0.855*	0.03	0.932	0.04
Belief in Violence	1.148*	0.02	1.101*	0.02	1.134*	0.02	1.117*	0.03

*$p<.01$

Note: Offense Type – Other omitted as a reference category

APPENDICES

Appendix A. Implementation of Civil Citation in Florida Counties

County	Implementation Date	Implemented Prior to 2011
Alachua	7/2011	No
Baker	4/2012	No
Bay	3/2014	No
Bradford	---	---
Brevard	10/2009	Yes
Broward	7/2012	No
Calhoun	---	---
Charlotte	2/2012	No
Citrus	6/1997	Yes
Clay	12/2012	No
Collier	8/2011	No
Columbia	12/2011	No
Miami-Dade	4/2007	Yes
Desoto	10/2013	No
Dixie	1/2014	No
Duval	5/2012	No
Escambia	8/2012	No
Flagler	1/2010	Yes
Franklin	12/2011	No
Gadsden	12/2011	No
Gilchrist	4/2013	No
Glades	10/2012	No
Gulf	---	---
Hamilton	2/2013	No
Hardee	---	---
Hendry	10/2012	No
Hernando	2/2009	Yes
Highlands	3/2014	No
Hillsborough	1/2006	Yes
Holmes	2/2012	No
Indian River	7/2007	Yes
Jackson	4/2014	No
Jefferson	12/2011	No

County	Implementation Date	Implemented Prior to 2011
Lafayette	2/2014	No
Lake	9/2011	No
Lee	12/2007	Yes
Leon	1/2000	Yes
Levy	5/2014	No
Liberty	12/2011	No
Madison	6/2012	No
Manatee	8/2014	No
Marion	1/2007	Yes
Martin	7/2011	No
Monroe	7/2010	Yes
Nassau	3/2012	No
Okaloosa	10/2011	No
Okeechobee	7/2007	Yes
Orange	8/2012	No
Osceola	5/2012	No
Palm Beach	9/2013	No
Pasco	7/2010	Yes
Pinellas	7/1996	Yes
Polk	---	---
Putnam	1/2010	Yes
Santa Rosa	10/1998	Yes
Sarasota	9/2015	No
Seminole	7/2012	No
St Johns	1/2010	Yes
St Lucie	7/2007	Yes
Sumter	6/2012	No
Suwannee	8/2014	No
Taylor	---	---
Union	10/2012	No
Volusia	1/2012	No
Wakulla	1/2009	Yes
Walton	10/2013	No
Washington	---	---

Implementation data provided by the Florida Department of Juvenile Justice

Appendix B. Article 1 Submitted for Publication