The effect of prison gang membership on recidivism

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ABSTRACT

Purpose: How does prison gang membership affect recidivism? In this paper, we use a unique dataset of all releasees from prisons operated by the Illinois Department of Corrections during the month of November 2000, which includes demographic information and data on gang participation. We attempt to control for confounding factors that are traditionally associated with both prison gang membership and rearrest.
Methods: We develop a potential-outcomes framework and describe the conditions under which a counterfactual can be estimated when gang membership is not randomly assigned. We combine regression analysis with Coarsened Exact Matching, which has several advantages over the more popular propensity score matching, to estimate the effect of gang membership on recidivism.
Results: Prison gang membership results in a six percentage point increase in recidivism.
Conclusions: Despite the strengths of the data, unobserved heterogeneity among inmates could still bias estimates. However, there are probably important subtleties to the gang participation decision such that experimental or quasi-experimental data are unlikely to increase our understanding of the relationship between gang-membership and post-release outcomes. We recommend incorporating ethnography with survey data collection, because ethnographers are able to document otherwise unobservable contextual information concerning the selection process which could be used to identify causal relationships.

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Introduction

How does prison gang membership affect recidivism? There are many reasons to assume that it increases the potential for reoffending relative to releasees who lack a connection to a criminal organization. Although there has been an increasing amount of research dedicated to examining the correlates of recidivism, relatively little has been devoted to the role of prison gang membership specifically. There are two primary obstacles to answering this question. First, the lack of data is a practical problem. Second, there is an important methodological challenge about how to effectively control for potential confounders in establishing a causal relationship between gang membership and post-release outcome.

Gang members likely have many attributes, both observed and un-observed, which are correlated with gang membership and also predict persistent criminal behavior. The researcher has to account for selection bias because other factors influence both gang membership and recidivism. If these covariates are not controlled for, then they will bias our measure of the affect of prison gangs on recidivism. In theory, an experimental design that randomly assigned offenders into treatment (prison gang affiliated) and control groups (non-gang affiliated) would eliminate the confounding influence. A practical alternative is to use a multivariate regression framework with observational data and control for potentially confounding criminogenic attributes. However, causal interpretation of regression coefficients requires strict, and often unrealistic, assumptions concerning the relationship between unobservables and the gang participation decision. Standard regression analysis focuses attention on the estimated outcomes rather than on the selection mechanism, which is often of more interest to the researcher. Additionally, regression is a purely parametric approach and requires assumptions concerning the distributions of the covariates which may not reflect actual sample properties. For example, randomized trials, in an ideal setting, match all other relevant characteristics of sample units and then randomly apply a "treatment" to some portion of the sample. Hence, a controlled experiment would balance the covariate distributions across treatment and control units, allowing the researcher to isolate the independent affect of prison gang membership. A regression analysis, on the other hand, will often have covariate values outside the area of common support thus creating estimates which depend more on the specific assumptions associated with the estimator than the characteristics of the data.

In this paper, we examine 2,534 releasees from Illinois prisons in November of 2000 who were tracked for a period of two years after release. These data address the practical limitation of finding records on prison gang membership collected by prison authorities who are reluctant to dispense information on "security threat groups." Using a potential outcomes framework, we first address the underlying assumptions

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necessary to identify the average treatment effect of prison gang membership on recidivism (see Imbens & Wooldridge, 2009).[1] This is an important step because it allows us to think more clearly about the selection mechanism of gang membership without placing the problem in the context of a specific statistical model. In addition, it also points to what types of information future qualitative criminological research, particularly ethnography, could provide to guide model selection. We apply Coarsened Exact Matching (Iacus, King, & Porro, 2011), a matching algorithm which has several statistical advantages over other popular matching techniques such as propensity score matching, to the sample of post releases. We find that prison gang membership results in a six percentage point increase in recidivism after balancing the sample on a key set of determinants for prison gang membership.

Review of existing literature

The reintegration question has drawn a great deal of attention from criminology and criminal justice (Petersilia, 2003). Each year more than 675,000 prisoners are released (West, Sabol, & Greenman, 2010). Prison beds cost state governments an average of $22,500 annually (Stephan, 2004). Finding ways of reducing the expenditures associated with recidivism would be welcome fiscal news (Baumer, 1997). The rebirth of the rehabilitative correctional philosophy offers insights into how this might be accomplished. Aiming services at high-risk offenders is one solution that has demonstrated promise (Gendreau, Little, & Goggin, 1996). This leads to the issue that guides nearly all of criminal justice, classifying and managing risk.

The first step in the process involves locating that group of offenders who face an elevated risk of reoffending. Identifying a characteristic that captures a combination of risk factors would improve the effectiveness of classification and risk management. Alternatively, if a unique identifier, one uncorrelated with others, could be located this could help correctional authorities and service providers focus their efforts more effectively by reducing the potential for fruitless supervision and services. In the first scenario, this would involve directing resources at programs that address broad issues such as improving employment prospects or reducing substance abuse problems. The second involves the more focused project of finding ways to attenuate the causal factor itself in the hopes of reducing recidivism.

Despite the outward appearance that gang affiliation is the source of the reoffending problem, it might be that other factors determine both gang membership and reoffending. This poses a problem for how to allocate resources. For example, offenders may have more opportunities to reoffend once they join a prison gang. Street gang members often maintain ties to their organizations or create new alliances while serving prison sentences. Past work suggests that their commitment to the gang identity is likely to gain strength while incarcerated (Moore, 1978) which might have a bearing on behavior post-release (Moore, 1996). Another complicating factor is in differentiating those inmates with street gang connections (Varano, Huebner, and Bynum, 2011) from those who only have a prison gang affiliation. Separating these complicated and intertwined issues will be instrumental in terms of generating more effective post-release supervision and service strategies.

Criminology has typically approached the issue of gang membership and recidivism in two parallel literatures that both indirectly address the topic: recidivism in general and the factors that influence the choice to join gangs. We merge the two literatures through a comparison of inmates who the Illinois Department of Corrections (IDOC) identified as prison gang members and non-members. A reading of the two literatures suggests that the independent effect of gang membership increases reoffending post-release. We will motivate this hypothesis in two stages and follow it with an empirical foundation in the remainder of the work. First, we survey the research that examines factors affecting the risk of ex-offender recidivism in general. This literature gives an account of the characteristics that are correlated with post-release success and failure.

The second related literature provides theoretical explanations about why gang identified inmates are at an increased risk of reoffending. Here we offer possible explanations for why gang members are less likely to stop offending. Canvassing the street gang and prison gang literature lends credibility to the argument that there are numerous reasons to suspect that gang membership, in and of itself, will draw offenders back into the criminal justice system.

Recidivism

There have been several major efforts to determine what factors influence recidivism on both the national level and within the state of Illinois. Regarding the former, there have been two studies of recidivism drawing on large, nationally representative samples. The first measured recidivism as rearrest and reconviction with return to prison, the two most common measures found in the literature. Within three years, 63 percent of releasees were rearrested for a felony or serious misdemeanor and 41 percent were recommitted to prison during the same period (Beck & Shipley, 1989). Survival analysis revealed that achieving success during the first year of release is critical, as two-thirds of the rearrests occurred within the first year. Younger, minority, male, high school dropouts, who committed property offenses, and those who had more extensive arrest histories were more prone to recidivism (ibid).

Subsequent research, also conducted by the Bureau of Justice Statistics (Langan & Levin, 2002), using the same definition and measure of recidivism found an increase in the overall level of recidivism. The rearrest rate and reincarceration rates increased to 68 percent and 63 percent. The former is relatively slight in comparison to the marked boost in the recommitment rate, suggesting the correctional system had become more risk averse. The analysis reaffirmed a few of the findings of the earlier study in terms of the correlates evident in the recidivism patterns. Rearrest rates were significantly curtailed following the first year of release and the association between age, gender, race, conviction for a property offense and recidivism was consistent with the earlier study.

These same general patterns were found in a series of studies conducted in Illinois in the 1980s. Sixty percent of releasees followed for 27 to 29 months were rearrested (Illinois Criminal Justice Information Authority, 1986b) and 32 percent reincarcerated (ICJIA, 1985). The first nine months of release was dubbed the "critical period" for rearrests (ICJIA, 1986a). After this period, the rearrest rate declines. Through survival analysis, the researchers predicted that 63 percent of the sample was ultimately expected to be rearrested (ibid). Survival analysis also highlighted the effects of several factors. Younger releases, those convicted of a property offense, and those housed in maximum-security institutions experienced rearrest at a quicker pace than older, violent, and minimum security releasees. Age, race, marital status, prior incarceration, and prior arrests were all associated with rearrest. The report concludes that the factors that proved best in predicting rearrest were the number of prior arrests, prior state prison incarcerations and the holding offense classification (ICJIA, 1986b).

How are these elements related to prison gang status? The same factors that are responsible for enhancing the chances of post-release rearrest or recommitment appear in greater proportions of gang members than non-affiliated inmates. Analysis of a cohort of prisoners confined in Nebraska found that gang members were younger, less likely to have a high school diploma, and less likely to be married or have children than their non-gang counterparts (Krienert & Fleisher, 2001). Furthermore gang members had a more criminally involved past. For instance, gang members reported an earlier age of arrest, less education, less commitment to legal employment, more drug use and more prior arrests than non-gang members. Gang members also have a similar number of prior convictions when compared with non-gang members despite their being younger overall (ibid). Combining these results with the well substantiated findings about recidivism leads to the