Prison-Based Economic Development: What the Evidence Tells Us

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Abstract

Since the late 1970s, there have been significant increases in the number of prisons and prisoners held in small towns and rural areas in the United States. Rural small towns have used prison construction and management as an economic development strategy. Although prisons were once seen as misfortune and disappointment to residents, since the 1980s, prison hosting has become a last resort for impoverished rural towns with desperate need of jobs. Prisons have been expected to fill the void when local industries and businesses closed down their operations in the 1980s economic crisis. While mass imprisonment and the prison boom in the United States have been important topics of research in the criminal justice field, less is known about prison-based economic development and its effects on local economies. This study conducts a literature review of U.S. studies, discusses theoretical and empirical limitations in the literature, and offers implications for research and policy development.

Keywords: economic development; mass imprisonment; prison-based gerrymandering; prison impact; rural prisons

Introduction

Over the past three decades, prison hosting has been used as an economic development strategy for small towns and rural areas in the United States. During the 1980s's economic crisis, many rural towns were economically depressed and turned to prisons in hopes of filling the void when local industries and businesses collapsed. There was a rush for rural incarceration in the 1980s and 1990s. Rural areas have built new prisons in proximity to their towns for economic recovery.

In the 1960s and 1970s, prisons were usually located in metropolitan areas. It is more convenient and economical to incarcerate offenders in urban areas where most crimes occurred, and most offenders used to live before committing the offense. Since the 1980s, there were significant increases in the number of prisons and prisoners housed in rural areas. During the 1980-91 period, 213 new prisons were built in rural areas (Beale, 1993). There was a total of 390 rural prisons in 1991, housing 317,000 prisoners. 44 percent of state and federal prisoners were incarcerated in rural prisons while the rural population constituted only 23 percent of the U.S. population. According to the latest available data, 245 new prisons opened in 212 rural areas over the 1991-2001 period (Economic Resource Service of the Department of Agriculture, as cited in Mosher, Hooks, & Wood, 2007). Since then, more prisons have been built in rural areas, and a greater percentage of prisoners have been incarcerated in rural prisons, all of which has substantially changed the physical and socio-economic landscape of rural areas.

Under the Trump administration, the Secretary of Homeland Security has been authorized to "take all appropriate action and allocate all legally available resources … to construct, operate, or control facilities to detain aliens at or near the land border with Mexico" (White House, 2017). Trump's get-tough approach to undocumented immigrants and drug- and human-trafficking criminal organizations has led to a greater demand for new correctional and detention facilities. According to American Civil Liberties Union (2020), more than 40 new detention centers were erected during the Trump administration, all operated by public or private corporations. Although the construction of these detention centers' impact is limited to the federal prison system, custodial facilities have expanded across the country.

Despite the substantial growth of rural prisons, an understanding of their impact on host communities is minimal and limited. There has been prior research to answer whether prison building can bring economic benefits to host rural towns. The findings are inconclusive, and there is a divide in both local and academic communities. This is still an ongoing issue warranting further consideration for informed decision making on prison hosting in rural areas. This article consists of four sections. First, it provides historical contexts of prison-based economic development in the United States. Second, it discusses literature search strategies. Third, it conducts a review of empirical literature, discusses the limitations of previous studies,

and offers guidance for future research. Fourth, it concludes with a summary of main findings and implications for policy development. Although the focus of the article is on U.S. studies on prison-based economic development, it provides implications for policy and research at the international level.

Historical Contexts of Prison-Based Economic Development

Mass Imprisonment and Rural Economic Deterioration

The historical contexts in which prisons were built in rural areas for economic growth are significant. The combined needs of state and federal governments to reduce overcrowding, and of rural towns to revamp local economies ushered in an era of rural incarceration in the United States (Besser & Hanson, 2004). Since the late 1970s, there have been dramatic increases in prison populations. Due to a series of get-tough on crime and drug policies, more offenders were imprisoned with longer sentences. Most prisons were overcrowded and operated over capacity, contributing to poor prison conditions and services. They were criticized as constituting cruel and unusual punishment and court-ordered to reform their conditions of confinement (U.S. Department of Justice, 1984). In sum, growing prison populations, overcrowding, and judicial interventions led to an increased demand for new prisons in the 1980s and 1990s.

Mass imprisonment and overcrowding became an economic opportunity for hard-pressed rural towns. Prison hosting offered a new source of employment and income when traditional manufacturing factories and family farms dried up in the 1980s. In the late 1970s, there were economic transformations toward more competitive capitalism, including globalization of labor and automation in manufacturing (Reich, 2007). Many manufacturing industries were relocated to foreign countries where cheaper labor and raw materials were available (Rubin, 1996). Labor-saving technological innovations also increased the productivity of goods and services at lower cost but decreased the availability of manufacturing jobs for less-educated and low-skilled workers.

The above economic reconstructing removed a significant number of existing blue-collar jobs and was devastating to rural towns that were economically dependent on manufacturing factories (Besser & Hanson, 2004; Huling, 1999). Rural towns experienced a significant population loss as young people migrated to find work in larger cities. Rural towns at risk of extinction were desperate to secure a new source of employment and income to revive their economies. Prisons were expected to fill the gap when local industries moved overseas, and automation in manufacturing replaced human workers.

In addition, the farm crisis of the 1980s provides a historical context of prison-based economic development in rural towns that economically relied on farming and agriculture. As

farmers in rural towns experienced a serious financial crisis, local politicians and policy makers used prison hosting as a last resort for economic recovery. There are several reasons for the 1980s farm crisis.

First, thanks to advances in agricultural technology, farm commodities could be made in larger quantities at a lower cost. Earl Butz, President Nixon's Secretary Agriculture, also encouraged farmers to plant "fencerow to fencerow" and "get big or get out" (O'Connor, 2012). For the mass production of commodities, most farmers took out loans from banks to purchase land and equipment. The farm debt increased between the 1970s and early 1980s (Barnett, 2003). As the overall supply of money in the economy increased, inflation ran high and was rampant in the 1980s. As the Federal Reserve raised interest rates to reduce inflation in the economy, most farmers could not repay the loan principals and interests and were forced into bankruptcy and foreclosure.

Second, as mass production generated more agricultural commodities than needed for domestic consumption, resulting in lower prices of commodities, farmers sold their surplus products to international markets (O'Connor, 2012). However, grain exports fell during the 1980s in part because of the U.S. grain embargo against the Soviet Union (Paarlberg, 1980). The Carter administration used the grain embargo as a punishment in response to the Soviet Union's military occupation of Afghanistan in 1979 (Friedmann, 1995). Its effects were devastating to family farms in rural towns. Finally, there were two droughts, one in 1980 and the other in 1983. High temperatures and droughts in the 1980s were catastrophic and damaging to rural towns for extended periods, especially in the Midwest (Barnett, 2003; O'Connor, 2012).

In sum, many manufacturing and farm operations in small towns and rural areas financially collapsed in the 1980s due to a confluence of several socio-economic factors, including globalization of labor, labor-saving technological innovations, farm debts for land and equipment purchases, a failed foreign policy, and droughts. The closing of traditional rural industries created high levels of unemployment, poverty, and financial anxiety among residents. As many young people moved to urban areas to secure jobs, rural towns lost populations and tax revenues and were threatened with extinction. They turned to prisons when no other alternatives were left for economic recovery.

Building Prisons as Economic Development in Rural America

Before 1980, prisons were seen as a locally unwanted/undesirable land use (LULU). NIMBY, an acronym for "Not In My Back Yard", expresses the opposition of residents to the sting of LULU facilities in their areas. Residents were reluctant to host prisons in their vicinity due to many anticipated problems, such as increased threats from escapees and released prisoners, an influx of prisoner families, decreased property values, a decline in quality of rural

life, civic pride concerns, and the squeezing out of local businesses (Huling, 1999; Shichor, 1992; Whitfield, 2008).

There was a change in sentiment from NIMBY to YIMBY/PIMBY. The latter is a phrase coined as a reaction to the NIMBY opposition. It stands for "Yes/Please In My Back Yard," referring to a pro-economic development movement within certain communities. In the 1980s, rural towns started welcoming prisons in their proximity when there was no alternative way out of the financial depression associated with the economic restructuring and farm crisis of the 1980s (Eason, 2017).

When family farms and manufacturing factories shrank in the 1980s, rural towns were at risk of extinction. Local businesses and jobs disappeared; employment was scarce, and welfare dependence/recipiency was high. Many people left for work in bigger cities. Local politicians were anxious to create new jobs and bring population and economic growth to their hard-pressed areas (Besser & Hanson, 2004). They attracted prisons as a means of economic development and competitively lobbied and bid to host prisons in their areas. Prison hosting was expected to improve and manage the reputation of host towns in economic distress (Eason, 2017). Towns often organized campaigns and sponsored town meetings to praise the benefits of prison hosting to the communities (Huling, 1999).

There are many anticipated benefits rural towns can accrue from prison hosting (Blankenship & Yanarella, 2004). Prison building produces jobs for people working in the design, construction, and operation of prison facilities. Once the prisons are built, jobs are needed for prison management. Prisons are touted as a recession-resistant, non-polluting industry whose hiring needs do not vary much depending on the time of year. Prison jobs are year-round, full time employment with adequate benefits (Beale, 1993). In addition, prisons and their employees can help local businesses by purchasing local goods and services, which in turn creates more demand for supermarkets, schools, hospitals, and banks. These spin-off businesses would produce new jobs for residents. Further, prison hosting can improve capital revenues for local governments through increased taxes and federal funds due to population growth. The issue in question is whether all of the expected benefits have been achieved or not, which will be discussed in the following sections.

A Review of Prior Research: Findings, Limitations, and Suggestions

The goal of the present article is to conduct a literature review, discuss the findings and limitations of prior research, and offer implications for research and policy development. A keyword search of online databases was performed to identify relevant articles on the topic under consideration. The key words included *prison hosting, rural prisons, prison-based economic development, community perceptions, economic growth,* and/or *prison-based gerrymandering*.

The databases searched were Social Sciences Citation Index, EBSCO, Criminology: A Sage Full-Text Collection, Sociology: A Sage Full-Text Collection, and Google Scholar. The bibliographies of relevant studies were also reviewed to find additional literature. The literature review is bound by the following selection criteria:

- Type of studies: any studies that empirically examined the (perceived) impact of prison hosting in a quantitative or qualitative manner.
- Type of publications: published articles and gray literature (working papers, dissertations, and theses).
- Location: U.S. studies only.
- Language: studies written in English.

After the screen procedures were done, a total of 17 studies have met the above selection criteria and are eligible for the literature review (see Appendix A). The focus of the literature review is limited to U.S. studies, since no research has been identified at the international level. All studies have been published from 1993 to the present. There is a wide geographic representation among the retrieved studies, covering many towns and counties in the United States. Thirteen studies are published articles, and four studies are gray literature, including three dissertations and one non-profit organization report.

As shown in Appendix A, there has been a considerable body of research on prison-based economic development. The main areas of reviewed research include: 1) examining the perceived effects of prison hosting on local economies (nine studies reviewed); 2) examining the actual effects of prison hosting on local economies (six studies reviewed); 3) examining the effectiveness of prison privatization as a means of rural economic development (one study reviewed); 4) examining the financial and political effects of prison-based gerrymandering on host communities (one study reviewed).

What are Community Perceptions of Prison Effects on Local Economies?

Research attention has been given to examine how residents perceive the effects of prisons on local economies. This section provides a summary and critique of prior studies in a more general discussion, rather than reviewing them individually (see Appendix A). Most research used the case study approach to explore resident perceptions of prison hosting in one or a few rural towns with prisons. They conducted an in-depth examination of what residents perceived to be the effects of prisons on local economies and various aspects of local life. Data collection methods included surveys of residents, prison administrators, and community leaders, as well as qualitative interviews, and/or agency records. An understanding of community perceptions plays an important role in successfully placing a prison in rural areas and addressing community resistance, if any.

Based on the review of prior research, the overall perceived economic effect of prison hosting has been positive (Engel, 2007; Hannan & Courtright, 2011; Martin, 2000; Myers & Martin, 2004; Packard & Courtright, 2015; Swanson, 1993; Turner & Thayer, n.a.). However, residents also expressed concerns about prison hosting, such as unmet expectations of economic benefits, fear of escapes and crimes, prisoner family relocation, traffic congestion, a decreased quality of public services for water and sewage, and/or a lack of communication between the prison and community. Concerns over quality of life were not large enough to negate the perceived positive economic effects of hosting prisons on the community.

There is spatial variation in the extent of NIMBY opposition (Shichor, 1992; Swanson 1993). Hannan and Courtright (2011) found a positive relationship between the distance residents live from a prison and the degree to which they are supportive of prison hosting. There is one possible reason why residents who reside farther from the prison can be more satisfied with the economic impact of prison hosting. Most prison employees live out of town, commute to work, and spend much of their income out of town, all of which lead to more economic growth in neighboring communities than host communities. In contrast, given the limited economic benefits and other quality of life concerns, residents who live closer to the prison may negatively respond to prison hosting.

Resident perceptions differ according to the duration of residence and involvement in the local economic industry (Che, 2005). The opposition to prison hosting is more common in amenity-rich rural areas to which many urban retirees and seasonal residents are attracted (Beale, 1996). They move out of metropolitan areas with high minority populations and urban problems, such as drugs, crime, and traffic congestion. It is often perceived that prison hosting would diminish the pristine landscape of rural towns and negatively affect local infrastructures for water, sewage, and other social services. Urban retirees and seasonal residents are also vocal in opposing prison hosting because their incomes are not tied to the local economy and land use. In contrast, permanent residents are more supportive of prison development because the sources of income are closely linked to the local economy. They believe that prison development can bring in new jobs and revitalize their areas with economic distress.

In addition, the way that residents feel about prison impact varies among people with different demographic backgrounds. In the past, the literature has shown that females were more likely to have negative attitudes toward the siting of prisons in their communities (Hannan & Courtright, 2011; Swanson, 1993). However, income, education, and race are not significant predictors of resident perceptions of a prison's impact on local economies (Hannan & Courtright, 2011; Swanson, 1993). Further research should explore how community perceptions are influenced by various demographic characteristics.

Finally, the intensity of NIMBY-like opposition to prison building can be a function of the way in which the prison hosting process is initiated and organized (Carlson, 1992). NIMBY opposition may be viewed as a rational choice approach by residents whose opinions take into consideration both the benefits they gain and the costs they bear from hosting a prison nearby. The communication between the Department of Corrections and local communities is essential when initiating the hosting process, as well as after the prison is fully operational (Packard & Courtright, 2015). Ensuring procedural transparency and fairness in the hosting process will ensure a greater understanding from residents about the benefits and costs of prison hosting, promote informed decision-making, and finally reduce community opposition.

There are several methodological problems in the literature that provide implications for future research. A major limitation in prior studies is the lack of representative samples. It is difficult to generalize study outcomes to the population in which prisons are hosted. Most studies used case study methods involving a small number of respondents (McShane et al., 1992; Martin, 2000). They are useful to collect detailed information about respondents' perceptions and attitudes of prison effects. However, samples for such studies are often not randomly drawn from the general population of interest. It is likely that sampling bias affects study outcomes by over- or under-sampling residents who have a particular predisposition, either being supportive with or opposed to hosting prisons. For example, the literature shows that females are more likely to have negative attitudes and reactions to hosting prisons. If they are overrepresented in the sample, the level of negative perceptions and attitudes will be overestimated. Future research should pay close attention to the relationship between samples, populations, and generalizability of study outcomes. It is important to enhance sample representativeness by improving comparability between samples and populations.

Another limitation of prior studies is that little information is available to explain whether or how community perceptions change over time in the prison hosting process. Prior to the prison hosting decision or in the early construction phase of a prison, residents may have higher expectations of prison hosting as a means of economic development. If the prison fails to bring expected economic benefits to the community, their attitudes often become more skeptical and negative. In contrast, residents may disapprove of prison hosting in the beginning but become more satisfied with the economic benefits that prisons have brought to the community once the prison was fully operational for several years. Future research should be done to examine resident perceptions across different phases in the prison hosting process. According to Swanson (1993), community perceptions and opinions may change depending on when the research interview was carried out in the prison hosting process (i.e., prior to the prison hosting decision, during the early or late construction phase of the prison, and after the prison is fully operational).

The third limitation of prior studies is that the data was often taken from a limited number of states (e.g., Florida, New York, Pennsylvania, Texas, and Washington). With that being said,

little information is generalizable across the country. Future research should be conducted in other states such as Georgia and Arizona where prisons were disproportionately constructed in rural areas with a high share of minority populations during the prison boom. The extent to which prison construction and operation influence local economies may vary across different geographical locations. Each rural town has its unique cultural environment in which residents may have different perceptions of a prison's effects on their socio-economic wellbeing. Prisons may be more positively perceived in poorer states, especially the south which generally has poorer economies, higher poverty rates, and larger minority populations. In the absence of alternatives, prison hosting can be a viable option for economic development in desperate rural areas. There is a continuing need for more research across times and places using advanced sampling and research designs.

The fourth limitation is that prior studies only examined perceptive, as opposed to behavioral dimensions of community opposition to the siting of prisons. They answered the question of how residents felt about the siting of prisons. However, the NIMBY opposition also entails behavioral components, such as protests, petitions, and lawsuits. Plans to locate prison sites often led to a strong public outcry and resistance from community residents, and were eventually nullified. A greater understanding of community behavioral response will help reduce NIMBY opposition and facilitate the prison siting process (for waste disposal facilities, see Lober, 1995). As yet, there is no empirical research into community action in the siting process. Further research should be done to answer the questions: who exhibits negative behavioral response to the siting of prisons, how/why they negatively respond to it, whether residents' behaviors are different from their perceptions, and how negative perceptions can escalate to the point where residents take any action necessary to oppose the siting of prisons.

Finally, most studies used descriptive statistics, reporting the frequency counts and percentages of resident perceptions of a prison's impact in relation to their demographic variables. The descriptive analyses fall short of the contemporary research standards, and thus their causal inferences should be taken with caution. Future researchers should examine whether demographic variables (e.g., race, gender, and marital status) influence perceived effects of a prison on economic growth while controlling for other variables. It is also of interest to understand whether the effects of demographic characteristics on perceived economic growth are mediated by other factors, such as involvement in the local economy, length of residence, home ownership, and perceived safety. When multiple items are available to measure each theoretical construct of resident perceptions, structural equation modeling would be preferable to examine structural relationships between the observed items and latent constructs. It also would allow testing the indirect effects of demographic variables on perceived economic effects of prison hosting through the above mediating variables, leading to a greater understanding of complicated relationships among the variables.

What are the Economic Effects of Prison Hosting on Local Communities?

Research findings on the perceived economic effects of prison hosting is positive in general. The issue in question is whether prisons have any actual impact on local economies. Overall, the empirical evidence failed to corroborate the effectiveness of prisons as a means of long-term economic development in rural areas (see Appendix A). Some studies need further consideration, as they offer methodological implications for research.

Using U.S. county data from 1969 to 1994, Hooks, Mosher, Rotolo, and Lobao (2004) analyzed the effects of prisons on rural growth. Prisons did not stimulate job growth and even impeded it in distressed rural counties with slow economic growth. Using more recent data from 1976 to 2004, Hooks, Mosher, Genter, Rotolo, and Lobao (2010) found that prison building negatively affected job growth in rural counties where college graduation rates are low. According to the Hooks et al studies, the economic effects of prison hosting on job growth are temporary and limited in duration and magnitude and moderated by overall economic growth and human capital. To maintain internal validity, a wide range of community characteristics were included in the models (e.g., established prisons, population, commercial aircraft activity, total bank deposits, per capital property taxes, revenues of local governments, and percentage of workers with a bachelor's degree).

Glasmeier and Farrigan (2007) examined the effects of state prisons from 1985 to 1995 on income shares by major industries, economic health, poverty, and population. Using the Mahalanobis metric matching methods, they constructed equivalent target and control counties, which decrease threats to internal validity and provide a more accurate causal inference. Overall, the effects of state prisons were "rather limited" and not significant enough to bring structural economic improvements to rural counties. However, the presence of prisons had an effect on poverty reduction in persistently poor counties. There are two explanations. Due to the direct and indirect economic benefits of prisons, areas could see a decrease in the number of people living below the poverty line. When the influx of new residents leads to inflation in the housing and rental markets, many poor residents are forced to leave the host county. Accordingly, the number of people living below the poverty line fell.

Using a panel dataset of 1980, 1990, and 2000, Eason (2017) tested the effects of rural prisons on median home value, median family value, poverty, and unemployment. He used propensity score matching and fixed effect regression to reduce measurement errors resulting from the threats to internal validity. Overall, prison building was "neither entirely pariah nor panacea." The economic effects of prisons differed across multiple periods. In 1969-78, prison towns experienced overall economic growth as measured by median home value, but its growth was temporary. There were mixed results for the period (1979-88) during which the county had an economic hardship; prison building increased median home value but exacerbated poverty. In

the latter period (1989-99) of economic prosperity, prison building led to the temporary reduction of unemployment.

The review of prior research indicates the complexity of model specification and mixed findings. It is difficult to provide a simple statement about whether prisons brought economic benefits to host communities. Overall, prisons had a temporary effect on local economies, but their effects have not been large enough to revive devastating rural counties. In the long-term, they even had deleterious effects on rural counties with limited economic and human capital.

There are several reasons for the ineffectiveness of hosting prisons as a policy for economic development (Blankenship & Yanarella, 2004; Huling, 2002; King, Mauer, & Huling, 2003; Packard & Courtright, 2015; Shichor, 1992). To promote the local economy, residents are expected to fill most prison jobs. However, they were often not hired due to lack of required education and experience. In addition, most recruits often do not reside in hard-depressed prison towns and instead commute to work from surrounding areas (Beale, 1996; Whitfield, 2008). Prisoners often occupy low-wage jobs (janitorial and landscaping work) internally in prison. They are also used for community work on public projects, which can reduce job opportunities for residents (Blankenship & Yanarella, 2004; Gilmore, 2007).

The multiplier effects associated with prison hosting are limited (Besser & Hanson, 2004; Blankenship & Yanarella, 2004; Hooks et al., 2010). Local businesses often do not achieve contracts due to their inability to provide large-scale goods and services at less cost. Given prison employees often live outside of prison towns, they do not purchase local goods and services, creating less demand for supermarkets, schools, hospitals, and banks. Regardless, these spin-off businesses would produce fewer jobs than anticipated for local residents. The presence of unwanted prisons may squeeze out local businesses and other legitimate alternatives (Hooks et al, 2004; Huling, 1999; Whitfield, 2008). When prison towns compete to attract prisons, they are forced to bear the infrastructure costs for water, sewer, and others, which are needed to operate prisons (Hooks et al., 2010; Hoyman & Weinberg, 2006). All things considered, prison hosting could not effectively increase the local tax revenues for governments and bring significant economic benefits to host communities.

Using the panel data, prior studies made a national comparison of economic growth between prison and non-prison areas, which increases the generalization of research findings across places and times. Despite their contributions to existing literature, it is important to discuss methodological problems and corresponding implications for further research.

The first limitation is that quasi-experimental designs were used to examine a prison's impact on local economies. They usually suffer from various threats to internal validity, especially history, maturation, selection bias, and instrumentation (Cook & Campbell, 1979;

McShane et al., 1992). The best way to address the internal validity threats is to use classical experimental designs with random sampling. However, it is not possible to use such random designs since prison hosting cannot be randomly implemented in particular areas by researchers. There are three statistical approaches to reduce internal validity threats. First, researchers can use rigorous matching methods with a wide range of covariates in model specification (see Eason, 2017; Glasmeier & Farrigan, 2007). Propensity score matching can parallel prison towns with non-prison ones, ruling out the threats to internal validity. Using logistic regression, the probability of being assigned to prison hosting can be estimated based on a wide range of covariates, such as percentages of income shares by major industries, unemployed persons, people in poverty, families receiving public assistance benefits, and minority populations. Based on the estimated conditional probability, researchers can match prison towns with non-prison towns that would have been chosen for prison development. Using the matched data set, researchers can examine the net effect of prion hosting on local economies. Research findings are an outcome of prison hosting, not other factors.

Second, fixed effects models can be used for panel data (Sayrs, 1989; Spelman, 2000; Wooldridge, 2006; see King, Mauer, & Huling, 2003). If the panel has many cross-sections, group dummies can capture the location fixed effects of unobserved variables (urbanization, climate, and race, gender, and age compositions) that differ among the cross-sections but do not change much or change by the same amount over time within each cross-section. If the panel has many time periods, time dummies can be used to control for the time fixed effects of unobserved variables (national trends) that change every year but are common to both prison and nonprison counties for any given year. The fixed effects models allow for estimating the impact of prisons on economic growth, controlling for location-specific time-invariant characteristics (location fixed effects) and time-specific shocks common to all cross-sections (time fixed effects). They can address, to some degree, the effects of omitted variables that influence economic growth across locations and times.

Third, differencing the series can reduce the problem of omitted variables (Spelman, 2000; Wooldridge, 2006). If Y_t indicates employment growth in period t, and Y_{t-1} denotes employment growth in the prior period, the differenced data can be expressed as $\Delta Y_t = Y_t - Y_{t-1}$. The difference between the current and previous observations can remove the effects of unobserved variables that do not change over time or change at a constant rate for all cross-sectional observations. Despite the benefits of differencing, it comes at a price. It shifts the nature of the data being estimated from long-term trends to short-term, annual changes.

The second limitation of prior studies is that no research was done to take into account higher level contextual influences on local economies. They compared economic growth between prison and non-prison areas while controlling for variation at the town or county level. However, they overlooked contextual information at the state level. The effects of prisons on

rural economies can vary greatly among states depending on state-level factors (e.g., infrastructure, human capital, and sentencing policies). If contextual variables are not included in model specification and the homoscedasticity assumption of OLS regression is violated, the significance tests of regression coefficients can be biased. Given that study outcomes differ across states, it is important to control for sources of variation at multiple levels. The multilevel modeling technique is warranted as a standard methodology for prison impact research.

The third limitation lies in the fact that little research used interrupted time series analyses for each town or county and situated its empirical analysis within a particular local context (see King, Mauer, & Huling, 2003). The degree to which prison hosting affects economic growth varies across towns and counties because economic structures and policies are inherently local in character. Time-series techniques can estimate the dynamics of historical relationships between prison hosting and economic growth at the local level. Among the quasi-experimental designs, a time series design is one of the best strategies in ruling out internal validity threats (McDowall, Loftin, & Wiersema, 1996) while being less concerned with the generalization of study outcomes (Cook & Campbell, 1979; McShane et al., 1992). The interrupted time series design compares the average levels of an economic time series variable prior to and after prison hosting. The pre-intervention series serves as a control series and controls for temporal patterns in which economic growth has changed over particular time intervals.

There are two methodological issues of concern in the use of time series analyses of prison impact. The first issue is the determination of an intervention point. There can be multiple intervention points (McShane et al., 1992), such as when the community is considered for the siting of a prison, the community identifies a prison location, the prison is constructed, and the prison is fully operational. It is often difficult to decide when prison hosting begins exerting an impact on local economies. These multiple intervention points can be interactive and accumulative in producing economic growth across multiple stages, as well as contributing to it respectively at any given time. Researchers may or may not take into account all possible intervention points. However, there should be strong theoretical reasons for each intervention point when multiple intervention points are considered (Britt et al., 1996).

The second issue pertains to the specification of an impact model. The time series design allows testing different impact patterns of prison hosting that vary according to onset and duration, such as an abrupt-temporary change, a gradual-permanent change, and an abrupt-permanent change. The impact of prison hosting can be either abrupt or gradual in onset and either permanent or temporary in duration (McCleary & Hay, 1980; McDowall et al., 1980). Therefore, the implications for prison impact studies are not clear. Prison hosting may have an abrupt-temporary impact on economic growth when it receives publicity immediately during site selection, construction, or opening/operation. The time series for economic growth may increase immediately after one of those plausible interventions but return to its pre-intervention levels a

few months/years later if the effect of prison hosting is temporary. On the contrary, the gradual-permanent impact hypothesis can be more plausible if there are no immediate effects, but its effects are more gradual. It might take several months/years until the intervention gains publicity and awareness and finally exerts its full effects. As discussed, because panel studies consistently found that prison impact is short-lived, an abrupt-temporary change would be an appropriate model to gauge the impact of prion hosting. The choice of an impact model should be done according to theory and empirical evidence (Britt et al., 1996; McDowall et al., 1996). In addition, the impact of prison hosting should be estimated and interpreted within its particular social, economic, political, and cultural contexts.

The fourth limitation of prior research is the determination of a unit of analysis. It is the subject of study to which findings are generalized. There were two units of analysis being used in the literature: county and town (census track). Most studies used county data (Glasmeier & Farrigan, 2007; Hooks et al., 2004; 2010; King et al., 2003), and few studies employed town data (Besser & Hanson, 2004; Eason, 2017). Both units of analysis should be used with the awareness of their strengths and weaknesses. If researchers are interested in examining whether prisons bring economic benefits to host communities, then the unit of analysis should be towns. Town data provide a more accurate and nuanced evaluation of a prison's impact on its host community (Eason, 2016). Given that town data are often subject to boundary alterations over time, there are limits to examining how long-term data are analyzed at the town level (Engel, 2007). On the other hand, county data are more constant and reliable over time than town data. County data would be preferable to capture the spatial diffusion of prison impact beyond the locations which are directly targeted. The literature demonstrated that the economic effects of prison hosting can spread out over a wider area because prison staff often live out of town, and their economic activities usually occur in outer adjoining areas. However, using county data is not without pitfalls. It obscures the economic effects of prisons on host communities which are the focus of intervention. The unit of analysis should be determined depending on the research questions and the availability of data. Given the relative lack of prison impact research, there should be continuing research efforts with both county and town data. The triangulation of data can offer a more comprehensive and nuanced understanding of a prison's impact on rural economies.

Finally, tentative evidence has supported the historical contingency of the prison hosting–economic growth relationship (Eason, 2017). Prison building had greater positive effects on local economies when overall economic conditions were largely favorable and prosperous. The relationship under consideration might depend on the period of time the data were collected, which brings out the importance of socio-historical contexts in theoretical and analytic conceptualizations of a prison's impact on economic growth. Historical sociologists suggested use of an "historical time" approach (Griffin, 1992; Isaac, 1997). Time consists of qualitatively different temporalities, characterized by discontinuity, heterogeneity, and non-linearity in its form, magnitude, and consequence (Isaac & Griffin, 1989). The meaning and consequence of

prison building can differ across different historical contexts as it interacts with ever-changing social environments. Future research should examine varying causal relationships between prison hosting and economic growth across temporal contexts. If the economic effects of prison building are systematically variable across temporal observations, then period-specific analysis is warranted. Historical periodization should be defined on the basis of both theory and empirical evidence.

Prison-Based Economic Development and Prison Privatization

Since the late 1970s, there have been dramatic increases in prison populations due to punitive sentencing policies. Growing prison populations have led to prison overcrowding, poor prison conditions and services, and judicial oversights of prison administration at all levels of governments. In these persistent historical contexts, mass imprisonment and overcrowding have become a business opportunity for private corporations. Facing growing demand for prison reform or new prisons, governments under financial pressures have contracted out the entire operation of prisons to the private sector. As a result, private corporations constructed and managed new prisons or assumed control of existing public prisons under government contracts.

The economic effects of prisons may differ depending on the ownership of prison. Private corporations are assumed to finance, build, and operate prisons more efficiently than governments through flexible use of labor and resources (Logan & Rausch, 1985). Free of the seniority and union rules of public prisons, private prisons are more flexible than public prisons in recruiting staff from local residents (Huling, 2002), all of which can bring quick economic benefits to rural communities with desperate need of jobs. This claim has remained controversial and should be subject to further empirical testing.

To the author's knowledge, little empirical evidence is available on the economic effects of hosting private prisons in rural areas (see Appendix A). Using U.S county-level data from 1997 to 2004, Genter et al. (2013) examined the effects of prisons on local job growth. Prisons did not promote job growth or even caused negative effects when the states underwent rapid prison privatization. The prison boom diverted both public and private resources into prison construction and away from economic development programs for education, job training, and childcare. If both public and private sectors spend so much money on incarceration, there is less money for physical and human-capital infrastructure promoting long-term economic development. Rural communities would lose opportunity costs that would have been used for a more sustainable economic development fulfilling the needs of rural counties.

In addition, there are several reasons why private prisons could not materialize their promises and meet public expectations of economic development: provision of per-inmate costs of incarceration, provision of public subsidies to private prisons, little job creation, low wages,

and high staff turnovers (Mattera et al., 2003). Proponents of privatization argue that privatization would reduce the construction and operating costs of prisons for governments, bringing lower costs to the taxpayers. However, private prisons receive per diem costs of incarceration per inmate from governments. They are also given various public subsidies and tax credits to finance the construction and operation of prisons in the name of economic development and stimulation. Examples of public subsidies for services include water, sewer, landfill, utility hookups, access roads, and/or other publicly financed improvements (Mattera & Khan, 2001). Private prisons produce jobs, but not as many as expected. Due to their profit motive, private prisons are compelled to reduce labor expenses, as well as the quality of food, health care, and other services for prisoners (Ogle, 1999). Staff in private prisons usually earn less than do those in public prisons. The turnover rate for staff in private prisons is much higher than that for their counterparts in public prisons. It is possible that public prisons are also forced to decrease staffing levels to be on par with those of private prisons. This is for their organizational survival in the context of state efforts toward prison privatization.

Genter et al.'s (2013) study is the first research demonstrating the economic impact of prison privatization on rural areas. In 2018, the federal government and 31 states had contracts with private corporations (Carson, 2020). 121,044 prisoners were housed in private facilities, approximately 8.1 percent of the U.S. prison population. Under the Trump administration, there has been a growth in the number of immigration detention centers. Since 2017, 40 new immigration detention facilities have been built in the U.S. (American Civil Liberties Union, 2020). The majority of them are run by private entities. Given the wide scope of prison privatization and the scant research available, it is essential to conduct more research using a wide range of data and research designs. In addition, given a richness of detail is not found in such a large-scale cross-sectional study, qualitative research is also imperative to assess community perception of, and community satisfaction with, the effects of hosting private prisons on distressed rural areas.

Does Prison-Based Gerrymandering Redistribute Political and Economic Power from Urban areas of Color to Rural White Areas?

Since the 1980s, most new prisons have been located in rural areas, and a significant percentage of prisoners are now housed in rural prisons. Due to the Census Bureau's usual residence rule, prisoners are counted as a resident in the area where the prison is located rather than in the area of origin where they come from. The census serves as a basis for apportioning congressional seats for political representation and distributing federal and state funds to local governments for housing, education, employment, health care, transportation, and public safety (https://www.census.gov), which is fundamental to the functioning of democracy.

Prison-based gerrymandering may have adverse effects on urban communities of color (Huling, 2002). Most prisoners in rural areas are racial minorities who come from urban areas, and they constitute a large portion of rural populations. Due to population losses, urban areas of color may lose voting and political power and receive less federal or state assistance for social services (Huling, 1999). Prison-based gerrymandering is hypothesized to shift political and economic power away from the poor urban minority communities that most prisoners originally came from to the poor rural white communities where most prisons are located.

Eason (2010) examined geographic patterns of 176 new prisons built in the 1990s across 13,155 rural areas. Contrary to the racial narrative of prison building, most prisons were located in the southern rural towns with large minority populations (African Americans and Hispanics). Beale (1996) also found that most prisons were built in Texas and Georgia between 1992-1994. There are two reasons for prison proliferation in the South (Engel, 2007). The south is composed of mostly ideologically conservative states (Newport, 2015), and most residents have politically conservative views of punishment. The conservative tradition in southern states, along with a history of racial discrimination and poor economies, has led to wide use of harsh sentences and higher imprisonment rates (Wogner, 2014), especially against racial minorities. That being said, political leaders and citizens were more supportive of, or at least acquiesced in, the decision of hosting prisons in their proximity. In addition, southern states opted for prisons because cheap labor and raw materials are available to construct and operate prisons. Southern states usually spent lower per-inmate costs and had lower quality of confinement relative to other regions (Vera Institute of Justice, 2017). In sum, rural areas have sought prisons as a means of economic development, but there is no empirical evidence at least in the South that prison building has been used as a means of race and ethnic stratification (Eason, 2010). With that said, prison development might have shifted economic and political power from urban communities of color to rural communities of color in the South.

The racial narrative of prison development is more relevant to prison towns in the North (Northeast, Midwest, or Northwest) where most residents are whites. Rural white towns in the North could benefit from prison development by incarcerating prisoners who originally came from urban communities of color. To the author's knowledge, there is only scant empirical evidence for the effects of prison-based gerrymandering (see Appendix A). Using a dataset across three states (New York, Indiana, and Washington), Walker et al. (2017) examined the effect of prison hosting on state funding allotments toward rural counties. Various predictors were included in the models for economic, political, and institutional controls. They found that rural counties with prisons in New York and Indiana accrued greater financial support relative to their tax efforts from the state than rural counties without prisons, independent of state spending apportioned for prison operation. More census-tied state funding and resources are allocated to prison counties for economic development, transportation, and anti-poverty programs. On the contrary, prison investments did not bring financial benefits to prison counties in Washington

with lower incarceration rates relative to New York and Indiana. They concluded that prison hosting can bring only limited economic relief to poor rural counties in New York and Indiana. Therefore, the size of prison populations did not significantly influence the amount of state fiscal resources given to urban counties with high population density.

Walker et al.'s (2017) study is the first empirical work on the effects of prison-based gerrymandering in rural prison areas. It has expanded an understanding of how prison counties incur additional fiscal benefits from the states; but, it is not without limitations. First, the effects of prison hosting on non-prison related state funding are found in New York and Indiana only; there is no effect in Washington. The fiscal effects of prison hosting depended on state punitiveness and spatial concentration of prisons. Further research should be done to examine why prison counties in certain states are more likely than those in other states to accrue more census-tied financial benefits. Walker et al.'s (2017) study relied on three states only because of data access limitations involving state funding streams at the county level. To compare any differences across states or regions, it is imperative to establish a state budget database regarding state funding transfers to counties.

Second, the census serves as a basis for allocating federal funds to local programs for housing, education, health care, transportation, and other social services (https://www.census.gov). Prison towns may receive more economic resources than non-prison towns, in the form of federal financial assistance. Given that Walker et al. 's (2017) study examined the impact of prison hosting on state funding allotments toward rural counties, further research is warranted to answer how census-tied funding and resources at the federal level are distributed to rural areas with prisons.

Lotke and Wagner (2004) noted the difficulty in identifying the accurate sources of funding that are linked to prison population counts since eligibility for federal grants varies from program to program. Funding areas with low per capita income provides prison towns with a fiscal advantage over non-prison towns. For example, prison areas are more likely than their non-prison counterparts to be eligible for funding from the Department of Housing and Urban Development, which is usually awarded on the basis of per capita income. Population is a determining factor; the average income earned per person in a geographic area is estimated by dividing the area's total income by its total population. In contrast, funding areas with high unemployment and poverty rates may not provide prison areas with a fiscal advantage over non-prison areas. For example, unemployment and poverty statistics do not count unemployed people who are not in the labor force and poor people who are not members of households, respectively. Thus, those who are institutionalized in jails and prisons are not part of what is needed to estimate both unemployment and poverty rates.

Finally, prison-based gerrymandering gives prison communities an unfair advantage over their urban and/or non-prison rural counterparts for electoral apportionment. For census purposes, prisoners have been counted as residents in the rural areas where they are currently locked up, rather than as residents in the urban areas where they originally came from and eventually return. Given that electoral district lines are drawn based on population sizes, rural towns with more prisons and prisoners may have more congressional representatives and thus greater voting and political power to promote their interests. The inner-city communities that prisoners came from and the rural communities where they are incarcerated share problems in common: poverty, unemployment, and lack of social services. However, the interests of urban areas of color are not likely to be represented in the legislature by the representatives in rural areas who benefit from the census practice of prison-based gerrymandering. Empirical testing is required to examine whether and/or how many electoral seats rural areas accrue by hosting prisons in their proximity at the expense of minority urban communities.

Discussion and Conclusion

Since the late 1970s, prison populations rose, and prisons became overcrowded. There was an increasing demand for new prisons. Mass imprisonment and the prison boom became an economic opportunity for poor rural areas. When rural economies fell off in the 1980s, jobs were hard to find and insufficient in numbers. Although prisons were once seen as a blight on the community, prison hosting has been used as a geographical solution to high levels of unemployment and poverty. It was the last resort for hard-pressed rural areas with desperate need of jobs. The merits of hosting prisons include new jobs, local business growth, population growth, tax revenue growth, and others (Besser & Hanson, 2004).

The present article provided a review of prior research in terms of its findings, limitations, and implications for research and policy. To reiterate, there are four topics of prison impact research: 1) examining the perceived effects of prison hosting on local economies; 2) examining the actual effects of prison hosting on local economies; 3) examining the effectiveness of prison privatization as a means of rural economic development; 4) examining the financial and political effects of prison-based gerrymandering on host communities.

The focus of earlier studies was community opinions across multiple dimensions of a prison's impact on locales. Although residents shared some concerns over the quality of rural life, they had positive perceptions toward prison effects on local economies. Overall, the expected economic benefits of hosting prisons in rural areas were perceived to be greater than the anticipated externalities and costs residents should bear (Carlson, 1991; Engel, 2007; Hannan & Courtright, 2011; Martin, 2000; Myers & Martin, 2004; Packard & Courtright, 2015; Swanson, 1993; Turner & Thayer, n.a.). In addition, scholarly attention was given to whether prison hosting has any actual effects on local economies. The empirical evidence has

demonstrated that the economic impact of prison hosting is not significant enough to revamp distressed rural areas. Prison hosting may provide temporary economic advantages or even slow down economic growth in rural areas during trying economic times when jobs and industries are scarce (Eason, 2017; Glasmeier & Farrigan, 2007; Hooks et al, 2004; 2010). Many of the economic benefits promised by prison hosting were not realized for several reasons, such as little job creation in targeted areas and limited multiplier effects.

The more fundamental way of generating jobs and income is to diversify the rural economy (education, retail trade, farming, manufacturing, forestry, fishing, hunting), rather than just relying on prisons. Prison development may not be either panacea or pariah (Eason, 2017) and either boom or bust (Huling, 2002). An overreliance on prisons as a one-size-fits all policy overlooks differences in rural towns and often had minimal, or even deteriorating effects on local economies. If prisons absorb many local resources, rural communities lose potential jobs that would have been created from other alternative investments (Hooks et al., 2004). Economic development policies should be tailored to meet the unique needs of each rural town (Stauber, 2001).

Prior research found that prison towns had fiscal advantages associated with state funding linked to the census's population counts (Walker et al., 2017). However, the impact of prison hosting on non-prison related funding varied across states. Future research should be conducted to explore state variations in the relationship between prison hosting and state funding allotments. Prisoners are counted as a local resident in the rural area where they are housed, which contributes to the apportionment of federal and state funding and congressional seats to the prison town. Prisoners are politically phantom constituents. Ironically, prisoners are usually denied the right to vote in elections during incarceration and even after completing their prison sentence (Petersilia, 2003). The policy of prison-based gerrymandering can inadvertently distort our democratic process and violate the principle of political and economic equality by artificially inflating the population count and the political influence of rural prison towns. More accurate census data are necessary to ensure an equal voting right of individuals and a fair share of census-tied federal and state fiscal benefits across locations. For a fair political and fiscal apportionment, the Census Bureau may trace the origin of prisoners and count them as a resident of their home community instead of the prison location (Lotke & Wagner, 2004). The prisoner's geographical information can usually be obtained from the records of the state departments of corrections and judicial branch.

The present article provided a literature review of prior research and delineates what we know (and don't know) about the prison-based economic development. Its findings are inconclusive to reach an agreement on the (perceived) impact of prisons on local economies. This is still an ongoing issue warranting further consideration for informed decision making on prison hosting in rural areas. Research findings are often sensitive to model specification and

conditional on what variables are included, what statistical models are used, and what unit of analysis is used. They can differ in both magnitude and direction across studies and even within studies. In addition, prior research often suffered from methodological shortcomings, such as a lack of internal validity, generalizability, and conceptual and methodological rigor. Further research is warranted with the awareness of these limitations.

To the author's knowledge, no to little research has been available outside of the US. Given that incarceration has been used as a primary sanction in other countries, the use of prison hosting as an economic development strategy is a relevant and important topic for research and policy, especially in English speaking countries where private prisons are often used in lieu of public prisons, including Britain, Ireland, and Australia. Although it is questionable, prisons are expected to bring economic benefits to rural areas by creating employment, increasing tax revenue, and consuming local products and services. However, this question has not been sufficiently discussed at the international level, and thus should be subject to empirical testing in the future. It is hopeful that the present article offers useful information for stimulating future research of prison impact. More carefully designed studies will help find more accurate results and reach a consensus on the impact of prison hosting on economic growth, which promote informed decision making among practitioners.

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Appendix A

A Summary of Research Findings on Prison-Based Rural Development

Study	Setting	Findings, Research Design, & Data Analysis
<u>Community Perception</u>		
Che (2005)	PA; County; 1997-99	Respondents had mixed perceptions toward prison hosting; interviews with government officers and residents
Engel (2007)	IL, MN, MO, NE, WI; Town; n.a.	Respondents had overall positive perceptions toward prison hosting. However, they perceived that prisons did not bring an economic boon. Mail survey of 300 residents (random sampling)
Hannan & Courtright (2011)	PA; Towns; n.a.	Respondents had overall positive perceptions of prison hosting on local economy. Mail survey of 3,000 residents (random sampling)
Martin (2000)	PA; County; n.a.	Respondents are mostly optimistic about the overall economic impact of a prison on local economy. Mail survey of 1,659 residents (random sample) during construction
Myers & Martin (2004)	PA; County; 1998	Respondents reported overall positive perceptions on the prison's economic effects. Mail survey of 1,659 residents. Logistic regression
Nation (2007)	TX; County; n.a.	Respondents perceived that prisons generate job opportunities, but non-prison employment opportunities to be limited. Semi-structured interview with 81 residents
Packard & Courtright (2015)	PA; Towns; n.a.	Prisons were perceived to generate job opportunities, but their economic impact on local businesses are limited. Focus groups and interviews with community leaders and prison officials
Swanson (1993)	FL; Town; 1991	Respondents had high expectations of prison impact on local economy and were supportive of prison hosting. 348 random samples via telephone directory
Turner & Thayer (n.a.)	NY; Counties; 2003	Prison town officers perceived that most economic conditions stayed the same or slightly improved. Mail survey of local elected and economic development officers (N = n.a)
<u>Economic Development</u>		
Besser & Hanson (2004)	US; Town; 1990 & 2000	Prison towns experienced less economic growth than non-prison towns; OLS regression
Eason (2017)	US; Town; 1980, 90, & 00	Prisons were neither panacea nor pariah. The economic effects of prisons somewhat differed across time periods; Fixed effects regression with propensity score matching
Glasmeier & Farrigan (2007)	US; County; 1980-99	Prisons had no significant economic effect in general, but had an impact on reducing poverty rates in persistently poor rural counties; T-tests with Mahalanobis metric matching
Hooks et al. (2004)	US; County; 1969-94	Prisons did not stimulate job growth and even impeded it in rural counties with slow economic growth; Two-stage least squares regression

Hooks et al. (2010)	US; County; 1976-2004	Prisons did not stimulate job growth and even impeded it in rural counties with low educational attainment; Two-stage least squares regression
King et al. (2003)	NY; County; 1976-2001	Prisons had no significant effect on unemployment and per capita income; Fixed effects regression
Economic Development & Private Prisons		
Genter et al. (2013)	US; County; 1997-2004	Prisons did not stimulate job growth and even impeded it in rural counties with rapid prison privatization; Two-stage least squares regression
Prison-Based Gerrymandering		
Walker et al. (2017)	IN, NY, & WA; County; 2000-08	Prison towns had fiscal advantages associated with state funding linked to the census's population counts in IN and NY only; OLS regression; IN & NY