DISCUSSION PAPER SERIES

DP17070
(v. 2)

Recidivism and Neighborhood Institutions: Evidence from the Rise of the Evangelical Church in Chile

Andrés Barrios Fernández and Jorge García Hombrados

LABOUR ECONOMICS

CEPR

ISSN 0265-8003

Recidivism and Neighborhood Institutions: Evidence from the Rise of the Evangelical Church in Chile

Andrés Barrios Fernández and Jorge García Hombrados

Discussion Paper DP17070
First Published 25 February 2022
This Revision 16 March 2022

Centre for Economic Policy Research
33 Great Sutton Street, London EC1V 0DX, UK
Tel: +44 (0)20 7183 8801
www.cepr.org

This Discussion Paper is issued under the auspices of the Centre's research programmes:

- Labour Economics

Recidivism and Neighborhood Institutions: Evidence from the Rise of the Evangelical Church in Chile

Abstract

Rehabilitating convicted criminals is challenging; indeed, an important share of them return to prison in the two years following their release. Thus, finding effective ways of encouraging desistance from crime has become an important policy goal to reduce crime and incarceration rates. This paper uses rich administrative data from Chile to provide causal evidence that the local institutions of the neighborhood to which inmates return after prison matter. Specifically, we show that the opening of an Evangelical church reduces twelve-month reincarceration rates among property crime offenders by 11 percentage points. This effect represents a drop of 18% in the probability of returning to prison for this group of individuals. We discuss three classes of mechanisms---social support, promotion of Evangelical values, and social monitoring---and provide evidence consistent with the first of them. Our results suggest that interventions that give recently released inmates access to local support networks could play an important role in encouraging crime desistance.

JEL Classification: K42, H42, J4

Keywords: Crime desistance, Recidivism, neighborhood institutions

Andrés Barrios Fernández - andres.bafer@alumni.lse.ac.uk
CEP and MIT and CEPR

Jorge García Hombrados - jorge.garciah@uam.es
Universidad Autonoma de Madrid

Acknowledgements
We thank the Ministry of Justice, the Ministry of Internal Affairs, the National Service of Prisons (Gendarmer´ıa), the National Institute of Statistics (INE) and SENDA for granting us access to different sources of administrative and survey data.

Recidivism and Neighborhood Institutions: Evidence from the Rise of the Evangelical Church in Chile*

Andrés Barrios-Fernández† Jorge García-Hombrados ‡

March 16, 2022
Latest Version

Abstract

Rehabilitating convicted criminals is challenging; indeed, an important share of them return to prison in the two years following their release. Thus, finding effective ways of encouraging desistance from crime has become an important policy goal to reduce crime and incarceration rates. This paper uses rich administrative data from Chile to provide causal evidence that the local institutions of the neighborhood to which inmates return after prison matter. Specifically, we show that the opening of an Evangelical church reduces twelve-month reincarceration rates among property crime offenders by 11 percentage points. This effect represents a drop of 18% in the probability of returning to prison for this group of individuals. We discuss three classes of mechanisms—social support, promotion of Evangelical values, and social monitoring—and provide evidence consistent with the first of them. Our results suggest that interventions that give recently released inmates access to local support networks could play an important role in encouraging crime desistance.

Keywords: Crime desistance, recidivism, neighborhood institutions.

JEL classification: K42, H42, J4.

*We thank the Ministry of Justice, the Ministry of Internal Affairs, the National Service of Prisons (Gendarmería), the National Institute of Statistics (INE), and SENDA for granting us access to different sources of administrative and survey data.

†Department of Economics of MIT, CEP and CEPR. 50 Memorial Drive, Office 508. Cambridge, MA 02142. United States of America andresbf@mit.edu

‡Universidad Autónoma de Madrid and Max Plank Institute for Demographic Research. Calle Francisco Tomás y Valiente 5, Cantoblanco. Madrid. 28049. Spain. jorge.garciah@uam.es

1 Introduction

Rehabilitating convicted criminals has proven to be challenging. Between 30% and 50% of individuals sentenced to prison are reincarcerated in the two years following their release (Doleac, 2020; Yukhnenko et al., 2019). This phenomenon is costly for societies. Apart from the direct costs of crime, maintaining inmates in prisons is expensive. In OECD countries, for instance, the average annual expenditure per inmate is close to USD 70,000. Encouraging desistance from crime is thus a primary policy goal for reducing both crime and incarceration rates (Doleac, 2020). Despite growing interest in understanding what factors could help to rehabilitate convicted criminals, we still know little about the role played by the local institutions that inmates encounter in their neighborhoods after prison. Neighborhoods have been shown to influence many important outcomes including earnings, education, marriage, fertility and also participation in crime (Chetty and Hendren, 2018a,b; Ludwig et al., 2013; Kling et al., 2005; Sviatschi, 2022), suggesting that they could also be important for encouraging crime desistance.

This paper exploits rich administrative data from Chile and provides causal evidence that the local institutions of the neighborhood to which inmates return after prison matter.[1] Specifically, we show that the opening of an Evangelical church significantly reduces reincarceration rates among recently released young inmates (i.e., inmates under 30 years old).[2] Studying the role of neighborhood institutions in encouraging crime desistance is particularly interesting in contexts where criminal offenders are geographically concentrated. This is the case of Chile (see Figure I), but also of many other countries including the US (Card et al., 2008; Chetty et al., 2016).[3]

Evangelical churches are particularly interesting neighborhood institutions. In recent decades they have experienced a large expansion throughout the world, especially in disadvantaged neighbor-

[1] Reincarceration rates are similar in Chile and in the US. While in Chile 50% of inmates return to prison within three years of their release, in the US this figure is close to 45%. This places Chile as the OECD country with the highest reincarceration rates. See `https://worldpopulationreview.com/country-rankings/recidivism-rates-by-country`

[2] Understanding how to encourage desistance from crime among young offenders is particularly relevant because crime participation significantly decays with age (Doleac, 2020). Indeed, individuals under 30 years old are the ones with the highest risk of committing a crime (McCall et al., 2013; Ulmer and Steffensmeier, 2014).

[3] Figure I illustrates the share of individuals under 30 years of age entering prisons in Santiago, Chile's capital city. The percentage of young individuals going to prison every year varies between 0 (in 70% of the census blocks) and 25% in the decile of census blocks with the highest concentration of young convicted criminals.

hoods of Latin America (Costa et al., 2018; The Pew Research Center, 2011).[4] While strongly rooted in the local communities, their charitable activities, proselytism, and political lobbying are transforming the social landscapes of Latin American countries (Costa et al., 2018; Fediakova, 2013).

We take advantage of rich administrative data in which we observe the home addresses and the exact entry and release dates of the universe of individuals under 30 years-old entering prison between 2006 and 2015. We combine these data with official records that contain the address and opening dates of all Evangelical churches opened between 2006 and 2015 (1,659 churches). To overcome endogeneity concerns, we use a difference-in-differences strategy. Within a neighborhood, we define a treatment and a control area. The treatment area corresponds to an inner ring located immediately around the church, while the control area corresponds to an external ring slightly further away. We focus on individuals entering prison before a church opens near them, and compare their reincarceration probabilities depending on whether their home is in the inner or external ring and on whether they are released from prison before or after the church opens. A nice feature of this research design is that we do not need to exploit variation on staggered church openings to identify the effects of interest. Thus, we can abstract from the challenges highlighted by Goodman-Bacon (2021) in the context of two-way fixed effect (TWFE) specifications.[5]

We find that the opening of an Evangelical church reduces twelve-month reincarceration rates among property crime offenders by more than 11 percentage points, an effect that represents a drop of 18% respect to the baseline reincarceration rates of these individuals. An important part of this drop—i.e., 7.3 percentage points—is already apparent three months after the release date. This result is consistent with the findings of Munyo and Rossi (2015) who show that an important share of inmates re-offend very quickly after being released, and highlights the relevance of the conditions and support that inmates face immediately after leaving prison. We find smaller and less precise effects when focusing on individuals sentenced for drug crimes, violent crimes and other types of crimes.[6] Finally, we also show that church openings decrease the number of young individuals going

[4]The Pew Research Center (2011) estimates that 869 million individuals worldwide are members of an Evangelical church.

[5]We also present results from a specification that exploits variation in staggered church openings. To overcome the challenges discussed by Goodman-Bacon (2021) we rely on the two stages difference-in-differences approach suggested by Gardner (2021). Estimates are remarkably similar across specifications.

[6]Not finding significant drops in these crimes is not surprising. These types of crimes are less common in our

to prison for the first time. As in the case of reincarceration, the effect is particularly strong for property crimes.

We explore and discuss three alternative mechanisms through which the opening of an Evangelical church could influence reincarceration rates. Firstly, considering that Evangelical churches are typically very active in charity work and in providing support to the members of the community (Fediakova, 2004; Mariz, 1994; Costa et al., 2018), they could decrease recidivism by alleviating the material needs of former inmates and by eventually improving their job prospects (Yang, 2017a; Munyo and Rossi, 2015; Tuttle, 2019). Secondly, Evangelical churches could affect recidivism by promoting their values and a healthy lifestyle. These religious communities have strong social norms against crime, which may result in a change in the preferences for crime of released individuals and their communities. Finally, Evangelical churches could strengthen community links leading to an increase in social monitoring. These alternative mechanisms could eventually decrease the net benefits of committing crime or the individual preferences for crime.

Although we cannot perfectly distinguish the contribution of each mechanism to our results, we provide evidence that the social support provided by Evangelical churches plays an important role in the drop that we document on reincarceration rates. We show that our results are driven by individuals who before entering prison—and therefore, before the church opening—already identified as Evangelicals. Using Census data we show that following a church opening young Evangelicals are more likely to be employed, and although we cannot tell whether the Evangelical former inmates are the ones getting the new jobs, these findings suggests that the support that they are receiving from the church is relevant. In line with this idea, we find that the effects are larger in areas with less public services available, suggesting that the Evangelical churches are particularly relevant in contexts where former inmates do not have other support networks. The presence of the state and the availability of material support have shown to influence both criminal activity and recidivism (see for instance Yang, 2017a; Tuttle, 2019; Blattman et al., 2021). Finally, we use detailed information on the location and opening dates of a group of non-religious organizations providing labor insertion support and helping with alcoholism and drug abuse rehabilitation. We find that

sample, and in addition individuals involved in property crime have been shown to be more responsive to the conditions they find at release, and to interventions alleviating material needs (Tuttle, 2019; Mallar and Thornton, 1978; Berk et al., 1980).

these institutions generate similar effects to the ones we document for Evangelical churches. These results are important from a policy perspective, as they suggest that institutions that give recently released inmates access to support networks in their neighborhoods could play an important role in encouraging crime desistance.

Our results contribute to the literature that investigates how to encourage crime desistance among convicted criminals once they are released from prison.[7] Recent papers have studied the role of the release regime (Kuziemko, 2013), of the economic conditions that inmates encounter after prison (Agan and Makowsky, 2021; Raphael and Weiman, 2003; Yang, 2017b; Schnepel, 2018), and of interventions that alleviate recently released inmates' material needs (Yang, 2017a; Tuttle, 2019) or provide them with support to find a job (Cook et al., 2015; Valentine and Redcross, 2015; Blattman and Annan, 2016). Although the evidence on the effectiveness of support programs is mixed, these studies suggest that the material conditions and the value of the non-crime outside options faced at release can reduce recidivism.

Few studies have investigated how the neighborhood to which inmates return after prison affects recidivism. Perhaps the closest paper to ours is Kirk (2009). This study stresses the importance of local criminal networks and shows that inmates who were not able to return to their neighborhood due to Hurricane Katrina were less likely to re-offend than those who returned. Consistent with this result, Billings and Schnepel (2020) find that inmates who, at the moment of release, have more criminal partners in prison are less likely to re-offend.[8] Our paper expands this literature by showing that institutions that provide support to recently released inmates in their own neighborhoods can play an important role in their rehabilitation.

Our work also adds to the literature that examines the link between religion and crime. The evidence on this relationship is reviewed in Baier and Wright (2001), suggesting a negative correlation between religiosity and crime. Heaton (2006) re-examines this relationship by instrumenting present levels of religiosity with past-levels of religiosity, and finds that, once endogeneity is taken into

[7] A related literature explores how imprisonment, prison length, and prison conditions affect recidivism (see for instance Tobon, 2020; Lotti, 2020; Aizer and Doyle, 2015; Mueller-Smith, 2015; Bhuller et al., 2020). For a complete review of the literature on recidivism see Doleac (2020).

[8] Two recent studies—Pettus-Davis et al. (2017) and Shamblen et al. (2017)—published in psychology and criminology journals, evaluate the effect of community support programs on recidivism. However, the results of these studies are inconclusive, in part due to the lack of statistical power (sample sizes are 40 and 280 individuals respectively).

account, the negative correlation between religiosity and crime found in most of the previous studies vanishes. More recently, Lowe (2020) argues that the 1904-5 religious revival in Wales decreased violent crime and drunkenness. While our results suggest that an increase in religiosity is not the main driver of the effects, we contribute to this literature by showing that religious institutions can also affect crime through the charity work and support they offer to the members of the community.

The rest of the paper is organized in six sections. Section 2 describes the activities and values promoted by evangelical churches. Section 3 discusses our empirical strategy. Section 4 describes the data, and section 5 presents the main results of the study. Section 6 discusses the potential mechanisms behind our results, and section 7 concludes.

2 Evangelical Churches in Chile

In the last decades, Evangelical churches have experienced a consistent growth in South America. Chile has not been an exception. While in 1992 around 12% of the Chilean population identified as a member of an Evangelical Church, in 2019 this figure rose to 18%.[9] The number of Evangelical churches has experienced an even faster growth and the expansion of these churches and their values is transforming the political and social life in many poor neighborhoods (Mansilla et al., 2017; Fediakova, 2012).

The growth of Evangelical churches in Chile was boosted by a 1999 law that guarantees religious freedom and equal rights to all churches (Law 19,638). This law allowed Evangelical churches to register as religious entities and to access the same benefits and tax exemptions that other churches already had. Figure II shows that the number of churches being registered quickly increased in the years following the law, reaching a peak of 212 in 2005.

Evangelicals in Chile come predominantly from low socioeconomic groups. According to the Bicentenario survey, 25% of low socioeconomic status individuals are members of an Evangelical church, while among high socioeconomic status individuals this figure is only 6%.[10] These churches are usually built and funded entirely by their members, and in general they are small (Fediakova, 2004)

[9] In the same period, the share of Catholics dropped from 77% to 45%. These figures come from the 1992 Population Census and from the 2019 wave of the *Bicentenario* Survey.

[10] The reports with the results of different waves of this survey can be downloaded from: `https://encuestabicentenario.uc.cl/resultados/`. The figures mentioned in the text come from the 2019 edition.

(see Figure III for some examples). Despite their small size, Evangelical churches are decentralized in their functioning and their preachers play an important role in their communities. Evangelical communities often provide basic assistance to those in need in their neighborhood and hold activities and gatherings that target specific demographic groups. Spreading the word of God and the rehabilitation of alcoholics, drug addicts and criminals are crucial goals of their social action (Fediakova, 2012; Mansilla et al., 2017; Fediakova, 2014).

Consistently with this evidence, a survey implemented by the PEW Research Center in 2014 in multiple countries of Latin America, including Chile, indicates that Evangelicals are more likely to do charity work, visit sick people, and provide different types of support to those in need than other individuals with links to a church (i.e., individuals who have attended a religious service in the last 12 months).[11] In addition, they are more likely to report that their church provides support in finding jobs, and lobbies for pro-poor policies (see Panel (a) in Figure IV). According to this survey, Evangelicals are also more likely to oppose gay marriage and abortion, and to favour strong leaders in government. They have stronger views against alcohol consumption and have more conservative views about the role of women in the family (see Panel (b) in Figure IV).[12] Finally, the members of Evangelical churches have a more active religious life and participate in activities to convert and attract new people to the church.

3 Empirical Strategy

This Section describes the empirical strategy that we use to study how the opening of an Evangelical church affects recidivism among individuals returning to their neighborhood after serving time in prison. We exploit variation generated by 1,659 church openings taking place between 2006 and 2014 in Chile.

Considering that the areas where these new Evangelical churches open are not necessarily random, we implement a difference-in-differences approach for which we define a treated and a control area

[11] The data with the results of the survey can be download from `www.pewforum.org/dataset/religion-in-latin-america/`.

[12] Appendix Table B.IV provides additional evidence from a survey applied every two years to a representative sample of high school students in Chile that shows that the members of an Evangelical church are less likely to consume alcohol, tobacco and marijuana; they also believe that their parents would be more upset in case of discovering that they consume any of these substances.

around each church. In our main specification, the treated area is defined by the 100 meters immediately around the church, while the control area is defined by the external ring at between 250 and 350 meters from the church.[13] We focus on individuals entering prison before a church opens near them, and compare their re-imprisonment probability depending on whether they return to a treated or to a control area before and after a church opening. We focus on individuals who enter prison before the church opens to ensure that their entrance to prison is not affected by the presence of the church.[14]

Figure VI illustrates our control and treatment areas. All the individuals living in the inner ring—i.e., at 100 meters or less from the church—belong to the treatment area. The control area, on the other hand, includes individuals living in the external ring. Our identification strategy relies on the assumption that in the absence of the church, the trajectory of recidivism in the inner ring would be parallel to its trajectory in the outer ring.

Our baseline specification is:

$$\begin{aligned} R(m)_{ict} =& \beta_1 \textit{Inner ring}_{ict} + \beta_2 \textit{Church opened}_{ct} + \beta_3 \textit{Inner ring}_{ict} \times \textit{Church opened}_{ct} \\ &+ \beta_4 X_{ict} + \mu_c + \mu_t + \varepsilon_{ict} \end{aligned} \tag{1}$$

Where, $R(m)_{ict}$ is a dummy variable that takes value one if individual i from neighborhood c being released from prison at period t returns to prison in the m months following his release; $\textit{Inner ring}_{ict}$ is a dummy variable that takes value one if the individual i from neighborhood c being released from prison on period t lives within 100 meters from the new Evangelical church; $\textit{Church opened}_{ct}$ is a dummy variable that takes value one if the Evangelical church of neighborhood c is already open by period t; X_{ict} is a vector of control variables, and μ_c and μ_t are neighborhood and release year fixed effects respectively.

[13] The area between 100 meters and 250 meters from the church, which corresponds to a buffer zone, is initially excluded from the analysis. However, we include it in later analyses as we test the robustness of our results to changes in the size of the rings and in the buffer zone.

[14] Section A presents additional results in which we remove individuals released from prison too close to the church opening date from the estimation sample. By doing this we eliminate individuals that despite returning to their neighborhood before the church opening, could still have been treated by it. The estimates we obtain are very similar to the ones we present in the main body of the paper.

As discussed in Section 2, Evangelical churches start small and are usually build next to the house of one of their members (see Figure III for some examples). Thus, especially near their opening date, they likely have a very local effect. In our main specification, we study their influence in a radius of 100 meters (approximately one block in Chile). The control area is also defined in close proximity to the church (i.e., 250 to 350 meters from the church). An advantage of comparing areas that are close to each other is that the parallel trend assumption is more plausible. However, as discussed by Butts (2021), this could also generate some challenges in the presence of spatial spillovers. To investigate if the parallel trend assumption is plausible, we rely on event studies and show that control and treated areas where indeed in parallel trends before the church opening. In addition, in Appendix A.5 we use Census data to show that access to public services and individuals living in control and treated areas are very similar both before and after a church opening. We also show that the opening of Evangelical churches did not crowd out or in NGOs or other community-based organizations.

In addition, to investigate how local is the effect of a church opening and whether we should be concerned about it potential effect on control units, we present additional specifications in which we vary the radius that defines the treatment area and show that the effects are indeed very local. In Section A we further study threads related to spatial spillovers by showing that our results are robust to changes in the buffer ring that determines the distance between treated and control units. As illustrated in Panel (b) of Figure VI, in high density areas some churches are close to each other, meaning that some individuals are at the same time in inner and outer rings of different churches. Individuals living within the inner or buffer ring of an Evangelical church are also used as control individuals of other churches if they are released one year before the closer church opens.

Recent literature highlights important challenges that arise in difference-in-differences and event studies settings that exploit variation in the time of adoption of the treatment (Borusyak et al., 2021; Goodman-Bacon, 2021). Our main empirical strategy, however, does not exploit variation in staggered church openings. Since specification 1 includes a neighborhood fixed effect that includes both the treatment and the control rings, the parameter of interest β_3 can be thought as an estimate of the pooled effect of 1,659 2×2 difference-in-differences, one per church opened during the period we study (see Albright, 2021, for a similar application).

Finally, we complement our analyses with an alternative identification strategy. Once more we rely on difference-in-differences estimations, but this time both treatment and control units correspond to individuals who live at 100 meters or less from the location where an Evangelical church will open in the future. The churches that define the treatment group are those opened between 2006 and 2014, while the churches that define the control group are those opened between 2015 and 2018. We do not observe prison sentences after 2015, so we study re-imprisonment in the same time period as before (i.e., 2006 to 2015). In contrast to our main identification strategy, this approach does exploit variation in the staggered opening of Evangelical churches. Thus, to overcome the challenges that arise in this case we follow the two-stages difference-in-differences approach proposed by Gardner (2021).[15]

In all the specifications that we present in the paper, standard errors are clustered at the neighborhood level. We define a neighborhood as the treated and control rings around them (i.e., all the area within 350 meters from an Evangelical church in our main specification).

4 Data

We combine rich administrative data from the Ministry of Justice and from the National Prison Service of Chile that allows us to identify all the Evangelical churches that opened between 2000 and 2018, and all individuals younger than 30 entering and leaving prison between 2006 and 2015.

The prisoners records include detailed information about the crimes they committed, their exact incarceration and release dates, a rich vector of demographic characteristics—i.e., gender, age, education level, civil status, number of children and religion—and their home address. On the other hand, we lack information on labor force participation or any other labor market outcomes. The church records include the name of the church, the address, and the exact date in which it was registered at the Ministry of Justice.

To create our main sample, we first geocoded all prisoners' and churches' addresses. None of the datasets included postal codes, which meant that we had to rely on street names, house numbers

[15] See `https://causalinf.substack.com/p/two-stage-did-and-taming-the-did` for a detailed discussion of this strategy and its advantages relative to other recent estimators developed to address the limitations of using TWFE estimators with staggered introduction of the treatment.

and municipality names. We were able to correctly identify around 80% of prisoners' addresses and 90% of churches' addresses.[16] Considering our identification strategy, not finding all prisoners' addresses should not be a major concern. It affects the power of our analyses, but unless there is some non-random selection process making the share of unidentified addresses to differ in control and treated areas, this should not affect the consistency of our estimates. Something similar occurs with the churches that we are not able to identify. They reduce the number of observations in our sample, but this should not affect the internal validity of our results.[17]

Since some individuals are serving sentences related to more than one crime, we classified them according to the most severe type of crime committed. Among the three main categories that we study, we defined violent crime as the most severe, drug crimes as the second most severe, and property crimes as the least severe. Thus, if an individual is sent to prison for theft and gun crime, we classify that individual as someone who committed a violent crime. We classify all crimes outside of these three categories as "other crimes".

In addition to the aforementioned records, we use the cartography and the individual level datasets of the population censuses of 2002 and 2012.[18] These data allow us to investigate whether the neighborhoods where the churches opened experienced changes in dimensions not necessarily related with criminal activity.

Finally, we use detailed geographic information on the location of crimes reported to the police and gathered by the Chilean Sub-Secretary for Crime Prevention (SPD). These data are used to explore whether the opening of the church affects the number of crimes reported in the neighborhood.

Table I presents summary statistics of our sample. Column (1) describes all the individuals being released from prison between 2006 and 2014, while columns (2) and (3) focus on the treated and control units of our main specification. These three groups are very similar. Near 90% of the individuals entering prison are males. The majority of them are Chileans and very few belong to a minority group. Less than 30% completed high school and the majority are single. Evangelicals,

[16] We only observe prisoners addresses when they enter into prison. However, within the subgroup of individuals who return to prison multiple times, we find that less than 3% move to a different municipality and that less than 10% move to an address more than 100 meters apart from their original one.

[17] An exemption to this would occur if the churches that we fail to identify open near control areas close to the time at which the churches that define treatment open. However, this would work against us finding significant effects.

[18] The cartography of the 2002 and 2012 censuses is only available for urban areas.

who are over-represented among urban poor, represent 35% of our sample. Property crimes are by far the most common, and the average sentence length is around 10 months. Around 44% of the prisoners return to prison within a year of being released, which highlights how challenging the rehabilitation process is.

5 Results

This section presents the main results of the paper. We first show that the opening of an Evangelical church reduces reincarceration rates for individuals returning to the neighborhood after serving prison sentences for property crimes. We do not find, however, significant changes in reincarceration rates for individuals involved in other types of crime. We conclude this section by showing that the drop in reincarceration rates is already relevant three months after the release date, and that the effects of church openings are very local and quickly decay with distance.

5.1 Effect of Church Openings on Reincarceration: All Crimes

We start by studying how the opening of an Evangelical church affects recidivism among individuals returning to the neighborhood after completing a prison sentence. We measure recidivism using reincarceration within a certain period after release. While it is important to highlight that this does not reflect total recidivism, as some offences might not lead to imprisonment, reincarceration is a well-established proxy for crime recidivism that has been broadly used in the literature (Tuttle, 2019; Doleac, 2017).

To estimate the effect of church openings on reincarceration, we rely on specification (1). As shown in Table II, individuals who after completing their time in prison return to live in a location that is very close—i.e., 100 meters or less—from a recently opened Evangelical church, are less likely to return to prison in the twelve months following their release date than similar individuals who return to the same location, but at a greater distance—i.e., 250 meters to 350 meters—from the church.

The results in Table II indicate that the probability of returning to prison in the twelve months following the release from prison drops in property crime, drug crime, and other types of crime. However, this drop is only significant for individuals who had served a prison sentence for commit-

ting property crime. We find that these individuals are 11.1 percentage points less likely to return to prison if after completing their sentences, they return to a neighborhood where an Evangelical church recently opened. This is a large effect; it represents a 18.2% drop relative to the levels of recidivism observed in the neighborhood before the church opening.

It is not surprising to find a significant effect only for individuals involved in property crime. Firstly, there are more individuals in this category, and the base level of twelve-month recidivism is also higher among them. Thus, the statistical power is larger for analyses involving this specific group of inmates. Secondly, individuals that commit property and other types of crime differ in terms of crucial treats such as psychopathy or planning measures (Boduszek et al., 2017; Seruca and Silva, 2016). Consistently, individuals involved in property crime have been shown to be more responsive to the conditions they find at release, and to interventions alleviating material needs (Tuttle, 2019; Mallar and Thornton, 1978; Berk et al., 1980). On the other hand, individuals involved in more severe types of crimes may have personal treats and links with criminal organizations that could make their rehabilitation more challenging for a non-specialized institutions like Evangelical churches.

As discussed in Section 4, we observe individuals' addresses only when they enter prison. The address where an individual lives before his sentence begins is not necessarily the same address to which he returns after completing the sentence. Thus, our estimates can be thought as intention to treat estimates (ITT). Note, however, that the share of individuals who move to a different neighborhood after spending time in prison seems to be very small. Among individuals entering prison multiple times, we find that less than 3% move to a different municipality. In addition, only 10% move to an address more than 100 meters from the one they reported the last time they entered prison. This suggests that the ITT estimates are very similar to the ones that we would obtain by instrumenting the after prison addresses with the ones we observe.

5.2 Effect of Church Openings on Reincarceration: Property Crimes

This section studies in more detail the effect that the opening of an Evangelical church has on the reincarceration probabilities of individuals released from prison after completing sentences for property crime. It starts by showing that differences between treated and control areas only arise

after a church opens and that our results are robust to different specifications. It then shows that a church opening makes a differences in reincarceration rates already three months after the release date from prison. Finally, it concludes by showing that the effects of the churches are very local and that they become indistinguishable from zero at 200 meters.

5.2.1 Church openings and 12-months reincarceration

As discussed in Section 3, the validity of our empirical strategy relies on the parallel trends assumption. This means that in the absence of a church opening, recidivism should have followed the same trend in control and treatment areas. Figure VII shows that at least during the 6 years before the church opening, there were no significant differences in this trend between treated and control areas. The difference in reincarceration rates arises only after a new church opens.

The event study concludes two years after a church opens as a consequence of the restriction we impose on the timing at which individuals enter prison. As discussed in Section 3, we focus on individuals who enter prison before the church opens to ensure that their entrance to prison is not affected by the presence of the church. Since most sentences related to property crime last less than two years, we do not have power to study what happens with individuals returning to their neighborhood three or more years after the church opens.

We next study the robustness of our results to the inclusion of controls and to the use of alternative specifications. We first follow Albright (2021) and present a modified version of specification (1) that includes church $\times$ release-year fixed effects. As our main specification, this approach does not exploit variation in staggered church openings and can be thought as pooling together 1,659 2 $\times$ 2 difference-in-differences, one per church opened during the period we study. We complement these analyses, with an alternative identification strategy in which the control group consists of individuals that live within 100 meters of a church that has not yet opened (i.e., individuals living close to churches opening between 2015 and 2020). As this strategy does exploit the staggered adoption of the treatment, we follow the two-stages difference-in-differences approach proposed by Gardner (2021) to overcome the identification challenges that arise in this context (see Goodman-Bacon, 2021, for details).

Table III shows that our estimates are very similar across specifications. All the results indicate that

the opening of an Evangelical church reduces reincarceration rates among property crime offenders. Our estimates are also robust to the inclusion of a rich vector of controls. The estimates in column (1) come from specifications that only control for neighborhood and release year fixed effect. In contrast, the estimates in column (5) come from specifications that on top of these fixed effects control by demographic, socioeconomic and family characteristics. These specifications also control by criminal history, religion before entering prison, and number of churches within one kilometer before being sentenced to prison. Despite the difference in the set of controls used in each column, the estimates are remarkably similar.

Although we find that the drop in recidivism is driven by individuals who served sentences for property crime, it is not clear whether in the absence of the Evangelical church they would have continued committing this type of crimes or if they would have started committing other types of crime. To study this in more detail, we rely once more in our main specification, but we redefine the outcome. We generate a set variables in which we interact our original outcome (i.e., 12-months recidivism) with an indicator of the type of crime behind an individual return to prison. These variables only take value one if an individual returns to prison for a specific crime. The results of this exercise are presented in Figure VIII. According to these results, most of the drop on reincarceration is driven by individuals who otherwise would have continued committing property crime (62.2%) or violent crime (19.8%). These are the crimes Evangelical churches are preventing from taking place.

5.2.2 When do the effects of church openings arise?

The results discussed so far examine the effect of Evangelical churches on recidivism twelve-month after being released from prison. In Figure IX we study how these effects evolve with the use of different months to define our measure of reincarceration. We find that there is an important difference in the probability of returning to prison already three months after the release date. Individuals returning to live near an Evangelical church are 7 percentage points less likely to return to prison in the three months following their release. This drop represents more than 65% of the drop that we observe when looking at longer periods of time. This result is consistent with previous research that has shown that an important part of the re-offending takes place very close to the

release date (Morales Peillard et al., 2012; Durose et al., 2014), and highlights the importance of the environment and support that inmates receive immediately after being released from prison (see for instance Munyo and Rossi, 2015).

5.2.3 How local are the effects of church openings?

Until now we have focused on individuals who before entering prison lived within 100 meters from the location in which an Evangelical church would open. However, these are not necessarily the only individuals affected by the church opening. This section studies how the effects of church openings evolve with distance.

To answer this question, we estimate our baseline specification, but allowing the inner radius that defines the treatment group to vary between 50 and 300 meters. In all these specifications we keep the buffer radius of 150 meters constant.[19] As illustrated in Figure X, the effects of church openings seem to be very local. The coefficients quickly decrease with distance and become statistically indistinguishable from zero at 200 meters. This result reliefs concerns about the control group also being affected by the opening of the church. In our main specification, the control group consists of individuals living at between 250 and 350 meters from the church. This is well beyond the distance at which the effect of the church becomes non-statistically different from zero.

These results are not surprising as we are investigating the effects of new churches. As discussed in Section 2, Evangelical churches start relatively small (see Figure III for some examples). Their radius of influence, however, is not necessarily fixed. If the Evangelical community starts to grow, the church could become relevant in a wider area. Unfortunately, the nature of our analyses prevents us from investigating how the effects of Evangelical churches on reincarceration rates evolve over time. Our empirical strategy focuses on individuals who enter prison before a church opens, and therefore in order to study long term effects we would need to work with individuals going to prison for a very long time. These cases are less frequent and can be very different from the ones in which we focus.[20]

[19] In Section A we show that our results are robust to different buffer radius.

[20] As discussed in Section 3, we focus on individuals who enter prison before the church opens. Thus, to study whether the opening of a church affects twelve-month recidivism five years after its opening, we would need individuals sentenced to five or more years in prison. These cases are not very frequent in our sample. In addition, individuals serving longer sentences are likely to be different from the ones driving our results.

6 What is Behind our Results?

We study three mechanisms through which the opening of an Evangelical church could affect re-incarceration.

Firstly, Evangelical communities place the support to individuals at risk at the center of their social action (Fediakova, 2004; Mariz, 1994). Thus, these communities could provide recently released inmates a support network (Costa et al., 2018), affecting the opportunity costs of committing crime by alleviating their immediate needs and improving their job prospects. Providing support to recently released inmates has shown to reduce recidivism (Yang, 2017a; Tuttle, 2019; Yang, 2017a). Although the evidence on employment programs is less conclusive, some studies suggest that enhancing employment opportunities of released inmates can reduce recidivism.[21]

Secondly, Evangelical churches may affect individuals by promoting the Evangelical lifestyle and values, which disapprove of drug and alcohol consumption, and engagement in criminal activities. By promoting these stricter social norms, Evangelical churches could change the preferences for crime of the released inmates and their communities, and eventually elevate the expected costs of committing crime through the promise of punishment in the after life (Heaton, 2006). Higher levels of religiosity have been found to improve labor market outcomes and to help smooth consumption (Bryan et al., 2020; Chen, 2010). However, existing evidence on the relationship between religiosity and crime is mixed, with some studies showing that religious revivals can decrease some types of crimes (Lowe, 2020) and others suggesting no relevant relationship (Heaton, 2006).

Finally, Evangelical churches may strengthen community links leading to an increase in social monitoring. More vigilant communities might make it more difficult to commit or hide crimes in the neighborhood (Gonzalez and Komisarow, 2020).

Although we cannot perfectly distinguish the mechanism driving our results, in the following subsections we implement different empirical exercises that provide evidence consistent with the social support mechanisms playing an important role in the drop we document on recidivism.

[21] See Doleac (2020) and Raphael (2010) for two reviews of the literature.

6.1 Effect of Church Openings on Religion and Labor Force Participation

This section investigates whether the opening of an Evangelical church changes the neighborhood in terms of religion and employment. To explore this question, we use individual-level data from the 2002 and 2012 population censuses. In line with the analysis conducted in the paper, we compare individuals living very close to a new church opened between 2002 and 2012 with areas that are further away. The census data do not include the exact address of individuals, and therefore we rely on census blocks, the smallest geographic unit used in the census.[22] Therefore, for the analyses using census data we define treatment individuals as those living in a block with its centroid within 100 meters from the church and control individuals as those living in a block with its centroid located between 250 and 350 meters from the church.

The results in Table IV indicate that before the opening of the churches, individuals living in treatment and control areas were identical in terms of religion and labour force participation. The coefficients of the interaction term suggest that the opening of a new Evangelical church slightly increases the share of individuals who identify themselves as members of an Evangelical church (approximately by 1 percentage point). This increase comes mostly from a decrease in the number of Catholics. While the effect is statistically significant at 1%, the modest magnitude of the coefficient suggests that the opening of these churches did not result in massive conversions in the inner rings relative to the outer rings.

On the other hand, we find suggestive evidence that the openings of Evangelical churches increase employment among young men. The effect is particularly relevant (2.6 percentage points) for Evangelical men under 30. This result is consistent with churches providing a support network for the vulnerable members of their community.

6.2 Effect of Church Openings on Reincarceration by Inmates' Religion

This section analyzes whether the effect of an Evangelical church opening varies depending on the religion of individuals. Table V shows that a large part of the effect documented in Section 5 is driven by individuals who before entering prison already identified themselves as Evangelicals.[23]

[22] Census blocks are geocoded only in urban areas. A census block generally corresponds to an actual block.

[23] The information on inmates religion is gathered from the inmates registry, which is collected at the start of the sentence.

While for them we find a drop of 17.3 percentage points in 12-months reincarceration rates, for individuals of other or no religion we find a non-significant drop of 6.7 percentage points.

The difference that we find in the estimates is consistent with Evangelical churches affecting the pecuniary and non-pecuniary benefits and costs that their members obtain from committing a crime. This could be driven by the Evangelical churches providing access to a network and offering some type of support to their members, but also by the churches affecting or enforcing the values and social norms of the former inmates and their reference group. On the other hand, this pattern is less aligned with conversions. Since the religion of the inmate is registered at the beginning of the sentence, the results show that the drop in crime is mostly driven by individuals already registered as Evangelicals and not by members converted by the opening of the church.

6.3 Effect of Church Openings on Reincarceration by Public Services Availability

As discussed in Section 2, the members of an Evangelical church are more active than the rest of the population in terms of the charity work that they do. If what is behind the results that we find is related to the support that they provide to their members, we should expect to see larger effects in areas where there are fewer institutions that could provide a similar service.

To investigate this, we rely on detailed geographic data that allow us to compute the distance between individuals' homes and municipal offices, nurseries and schools, and health centers. We assume that individuals who have more of these services nearby, also have more opportunities to receive support directly from public institutions.

The results of the analysis are reported in Table V. We find that the effects are indeed stronger in areas where the presence of the State seems to be weaker. The effect of an Evangelical church opening on 12-month reincarceration is inversely proportional to the distance between an individual home address and the main office of the municipality. Indeed, the effect completely vanishes for individuals who live very close to the municipality. The effect also seems to decrease with the number of schools and health centers in the neighborhood, suggesting that Evangelical churches do to some extent substitute some of the public services.

6.4 Effect of non-Religious Neighborhood Institutions on Reincarceration

If the effect of the Evangelical churches on reincarceration is partly driven by their social action in the neighborhood, we should expect the effect of non-religious organizations doing similar work to also have an effect on reincarceration. This hypothesis is aligned with Sharkey et al. (2017), who show that nonprofits organizations focused on reducing violence and building stronger communities helped to reduce crime in the US between 1990 and 2010.

In this section, we examine the effects on reincarceration of the opening of different types of non-religious organizations in the neighborhood, by replicating the main identification strategy of the paper. Information on the exact address and opening date of these organizations is gathered from the Chilean Registry of non-governmental organizations. The results of the analysis are reported in Table VI. Consistent with the social action mechanism, they show that the opening of organizations that promote labor insertion have similar effects in terms of magnitude and statistical significance than the effect we find for churches. We find a similar effect when looking at organizations that promote alcohol and drug abuse rehabilitation. However, this last estimate is not statistically significant. The lack of a significant effect for this type of organizations is in part explained by a smaller sample size. On the other hand, sport, neighborhood and organizations with other missions do not seem to affect reincarceration of individuals in the neighborhood.[24]

6.5 Crime Reporting in the Neighborhood

This section uses geocoded data from crimes reported to the police to explore whether the opening of an Evangelical church affects crime reporting patterns. This analysis aims to test whether the opening of an Evangelical church increases community monitoring in the neighborhood. If so, we would expect the number of crimes reported to the police in the inner ring to increase in response to the opening of the church.

We build a database of the total number of crimes reported to the police in the inner and outer circles per square kilometer, and we estimate our main specification with the outcome defined at the ring level. The results of the analysis are reported in Table VII.

[24]The Chilean Registry of non-governmental organizations does not contain detailed information on the mission of each organization. Therefore, we classify them according to the information contained in their name.

The results show that the opening of an Evangelical church does not significantly affect the number of crimes reported in the inner circle relative to the outer circle. The lack of an effect on the number of crimes reported to the police by people living in the ring suggests that Evangelical churches do not increase community monitoring of illegal activities.[25]

While this analysis is appropriate to explore how Evangelical churches affect community monitoring of illegal activities, it is important to remark that the latter result is unlikely to reflect the participation in illegal activities of people living in the ring since criminals very rarely commit crime within 100 meters from their residence (Kirchmaier et al., 2021; Ackerman and Rossmo, 2015).

6.6 Effect of Church Openings on First Sentences

This section shows that the opening of a new Evangelical church also reduces the number of people going to prison for the first time.[26] Previous evidence remarks the importance of criminal networks in the neighborhood on recidivism (Kirk, 2009; Billings and Schnepel, 2020). Thus, if Evangelical churches prevent some individuals in the community from engaging in crime, reincarceration could be also affected through making it more difficult to find criminal partners for recently released individuals.

To investigate this hypothesis, we rely once more on our main specification, but since we only observe individuals who actually go to prison, instead of defining the outcome at the individual level, we define it at the ring level. We therefore investigate how the number of individuals entering prison for the first time changes in treated and control areas when an Evangelical church opens. Since treated and control rings differ in size, we normalize the count by the area of each ring.[27]

The results are reported in Table VIII. As in the case of reincarceration, we do find that a church opening reduces the number of people in the neighborhood entering prison for the first time. While the coefficients are negative for all types of crimes, the effects are statistically significant at con-

[25] These results should be interpreted with caution because while the lack of an effect on the number of crimes reported to the police suggests a limited role of community monitoring, it could also reflect an increase in the probability of reporting a crime combined with a reduction in the actual number of crimes.

[26] We consider as the first time in prison the first time an individual is going to prison between 2006 and 2015. While the focus on young inmates somehow reduces concerns, some of these individuals might have been in prison for the first time before 2006.

[27] In Section A.5, we show that the Census Blocks in treated and control rings have similar densities and that they are also similar in a rich vector of characteristics.

ventional confidence levels for property and violent crime.[28]

While we do not see that individuals in the inner and outer rings differ in terms of demographic characteristics before or after the opening of the church (see Appendix A.5), it is not possible to rule out that at least part of the effect that we find in the first entrance analysis is driven by criminals moving away from the new churches. In contrast to our results in reincarceration, the implication for the interpretation of this result is that the drop that we observe in the number of people going to prison around the church does not necessarily translate into a drop in the number of people going to prison in general.

6.7 Mechanisms Discussion

While we cannot disentangle which specific forms of support are driving the reduction in reincarceration rates that we find, the results presented in this section suggest that the opening of Evangelical churches fosters crime desistance among recently released inmates through providing a support network that helps them to cope with their more immediate needs and potentially facilitate their insertion in the labor market.

The drop we find on first imprisonment may indicate that churches also affect reincarceration rates by making more difficult for individuals recently released from prison to find partners to commit crime.

7 Conclusion

A large share of individuals sentenced to prison re-offend and are reincarcerated a few years after being released. The costs that this phenomenon imposes on society have generated great interest in understanding how to encourage desistance from crime.

This paper provides causal evidence that the local institutions of the neighborhood to which individuals return after prison matter. We show that Evangelical churches opening in the neighborhoods to which individuals return after prison reduces twelve-month reincarceration rates among property crime offenders by more than 11 percentage points, an effect that represents a drop of 18% respect

[28]The dynamics of this effect and the existence of parallel trends before the opening of the church are assessed in Figure A.III provided in Appendix A.5.

to the baseline reincarceration rates of these individuals.

We study three alternative mechanisms that could be behind our findings: social support; promotion of Evangelical values; and an increase in social monitoring. Although we cannot perfectly distinguish the contribution of each mechanism to our results, we provide evidence consistent with the first mechanism—i.e., the social support provided by Evangelical churches—being an important driver of the drop we document on reincarceration rates. We find that Evangelical churches improve labor force participation among young Evangelicals, and that their effect on reincarceration is similar in magnitude to the effect of non-religious organizations focused on labor insertion, and drugs and alcohol abuse rehabilitation. In addition, we find that the effect of a church opening is larger in areas with less public services available, suggesting that to certain extent churches substitute for other sources of support.

Our results suggest that institutions and policy interventions giving recently released inmates access to support networks in their neighborhoods could play an important role in encouraging desistance from crime.

References

Ackerman, J. and D. Rossmo (2015). How Far to Travel? A Multilevel Analysis of the Residence-to-Crime Distance. *Journal of Quantitative Criminology 31*, 237–262.

Agan, A. Y. and M. D. Makowsky (2021). The Minimum Wage, EITC, and Criminal Recidivism. *Journal of Human Resources*.

Aizer, A. and J. Doyle (2015, 04). Juvenile Incarceration, Human Capital and Future Crime: Evidence from Randomly-Assigned Judges. *The Quarterly Journal of Economics 130*.

Albright, A. (2021). No money bail, no problems?

Baier, C. J. and B. R. E. Wright (2001). If You Love Me, Keep My Commandments": A Meta-Analysis of the Effect of Religion on Crime. *Journal of Research in Crime and Delinquency 38*(1), 3–21.

Berk, R. A., K. J. Lenihan, and P. H. Rossi (1980). Crime and Poverty: Some Experimental Evidence From Ex-Offenders. *American Sociological Review 45*(5), 766–786.

Bhuller, M., G. B. Dahl, K. V. Løken, and M. Mogstad (2020). Incarceration, Recidivism, and Employment. *Journal of Political Economy 128*(4), 1269–1324.

Billings, S. B. and K. T. Schnepel (2020). Hanging Out with the Usual Suspects: Neighborhood Peer Effects and Recidivism. *Journal of Human Resources*.

Blattman, C. and J. Annan (2016). Can employment reduce lawlessness and rebellion? a field experiment with high-risk men in a fragile state. *American Political Science Review 110*(1).

Blattman, C., G. Duncan, B. Lessing, and S. Tobón (2021, February). Gang rule: Understanding and Countering Criminal Governance. Working Paper 28458, National Bureau of Economic Research.

Boduszek, D., A. Debowska, and D. Willmott (2017). Latent profile analysis of psychopathic traits among homicide, general violent, property, and white-collar offenders. *Journal of Criminal Justice 51*, 17–23.

Borusyak, K., X. Jaravel, and J. Spiess (2021). Revisiting Event Study Designs. Working paper.

Bryan, G., J. J. Choi, and D. Karlan (2020, 06). Randomizing Religion: the Impact of Protestant Evangelism on Economic Outcomes. *The Quarterly Journal of Economics*.

Butts, K. (2021). Difference-in-differences with geocoded microdata. *arXiv preprint arXiv:2110.10192*.

Card, D., A. Mas, and J. Rothstein (2008, 02). Tipping and the Dynamics of Segregation. *The Quarterly Journal of Economics 123*(1), 177–218.

Chen, D. L. (2010, April). Club Goods and Group Identity: Evidence from Islamic Resurgence during the Indonesian Financial Crisis. *Journal of Political Economy 118*(2), 300–354.

Chetty, R. and N. Hendren (2018a, 02). The Impacts of Neighborhoods on Intergenerational Mobility I: Childhood Exposure Effects. *The Quarterly Journal of Economics 133*(3), 1107–1162.

Chetty, R. and N. Hendren (2018b, 02). The Impacts of Neighborhoods on Intergenerational Mobility II: County-Level Estimates. *The Quarterly Journal of Economics 133*(3), 1163–1228.

Chetty, R., N. Hendren, F. Lin, J. Majerovitz, and B. Scuderi (2016, May). Childhood Environment and Gender Gaps in Adulthood. *American Economic Review 106*(5), 282–88.

Cook, P., S. Kang, A. Braga, J. Ludwig, and M. O'Brien (2015). An Experimental Evaluation of a Comprehensive Employment-Oriented Prisoner Re-entry Program. *Journal of Quantitative Criminology 31*, 355–382.

Costa, F., A. Marcantonio Junior, and R. Castro (2018, December). Stop suffering! Economic downturns and Pentecostal upsurge. FGV EPGE Economics Working Papers (Ensaios Economicos da EPGE) 804, EPGE Brazilian School of Economics and Finance - FGV EPGE (Brazil).

Doleac, J. (2020). Encouraging desistance from crime. *Journal of Economic Perspective*.

Doleac, J. L. (2017, January). The Effects of DNA Databases on Crime. *American Economic Journal: Applied Economics 9*(1), 165–201.

Durose, M., A. Cooper, and H. Snyder (2014). Recidivism of Prisoners Released in 30 States in 2005: Patterns from 2005 to 2010. *Bureau of Justice Statistics* (NCJ 244205).

Fediakova, E. (2004). Somos parte de esta sociedad. evangélicos y política en el chile post autoritario. *Política*.

Fediakova, E. (2012). Evangelicals in Democratic Chile, 1990–2008: from 'Resistance Identity' to 'Project Identity'. *Religion, State and Society 40*(1), 24–48.

Fediakova, E. (2013). *Evangélicos, política y sociedad en Chile: dejando "el refugio de las masas", 1990-2010*.

Fediakova, E. (2014). Estar menos en templo, más en la calle: transformación del espacio evangélico chileno, 1990-2012. *Estudios Ibero-americanos 40*, 240–257.

Gardner, J. (2021). Two-stage differences in differences. Technical report, Working paper.

Gonzalez, R. and S. Komisarow (2020). Community monitoring and crime: Evidence from chicago's safe passage program. *Journal of Public Economics 191*, 104250.

Goodman-Bacon, A. (2021). Difference-in-differences with variation in treatment timing. *Journal of Econometrics 225*(2), 254–277.

Heaton, P. (2006). Does religion really reduce crime? *The Journal of Law Economics 49*(1), 147–172.

Kirchmaier, T., M. Langella, and A. Manning (2021). Commuting for crime. Technical Report 1747, CEP Discussion Paper.

Kirk, D. S. (2009). A Natural Experiment on Residential Change and Recidivism: Lessons from Hurricane Katrina. *American Sociological Review 74*(3), 484–505.

Kling, J. R., J. Ludwig, and L. F. Katz (2005, 02). Neighborhood Effects on Crime for Female and Male Youth: Evidence from a Randomized Housing Voucher Experiment. *The Quarterly Journal of Economics 120*(1), 87–130.

Kuziemko, I. (2013). How should inmates be released from prison? An assessment of parole versus fixed-sentence regimes. *The Quarterly Journal of Economics 128*(1), 371–424.

Lotti, G. (2020). Tough on Young Offenders: Harmful or Helpful? *Journal of Human Resources*.

Lowe, M. (2020). Religious Revival and Social Order. Working paper.

Ludwig, J., G. J. Duncan, L. A. Gennetian, L. F. Katz, R. C. Kessler, J. R. Kling, and L. Sanbonmatsu (2013, May). Long-Term Neighborhood Effects on Low-Income Families: Evidence from Moving to Opportunity. *American Economic Review 103*(3), 226–231.

Mallar, C. D. and C. V. D. Thornton (1978). Transitional Aid for Released Prisoners: Evidence from the Life Experiment. *Journal of Human Resources 13*(2), 208–236.

Mansilla, M. A., L. Orellana Urtubia, and C. Pinones Rivera (2017, 06). Las estrategias del pentecostalismo chileno frente a la pobreza. Un análisis del período 1909-1989. *Anuario de Historia Regional y de las Fronteras 22*, 49 – 70.

Mariz, C. L. (1994). *Coping with Poverty: Pentecostals and Christian Base Communities in Brazil*.

McCall, P., K. Land, C. Dollar, and K. Parker (2013). The Age Structure-Crime Rate Relationship: Solving a Long-Standing Puzzle. *Journal of Quantitative Criminology 29*, 167–190.

Morales Peillard, A., N. Muñ Correa, G. Welsch Chahuan, and J. Fabrega Lacoa (2012). La Reincidencia en el Sistema Penitenciario Chileno. Technical report, Fundacion Paz Ciudadana.

Mueller-Smith, M. (2015). The criminal and labor market impacts of incarceration. Working paper.

Munyo, I. and M. Rossi (2015). First-day criminal recidivism. *Journal of Public Economics 124*(C), 81–90.

Pettus-Davis, C., A. Dunnigan, C. A. Veeh, M. O. Howard, A. M. Scheyett, and A. Roberts-Lewis (2017). Enhancing Social Support Postincarceration: Results From a Pilot Randomized Controlled Trial. *Journal of Clinical Psychology 73*(10), 1226–1246.

Raphael, S. (2010, April). Improving Employment Prospects for Former Prison Inmates: Challenges and Policy. Working Paper 15874, National Bureau of Economic Research.

Raphael, S. and D. Weiman (2003, January). The Impact of Local Labor Market Conditions on the Likelihood that Parolees are Returned to Custody.

Schnepel, K. T. (2018, February). Good Jobs and Recidivism. *Economic Journal 128*(608), 447–469.

Seruca, T. and C. F. Silva (2016). Executive Functioning in Criminal Behavior: Differentiating between Types of Crime and Exploring the Relation between Shifting, Inhibition, and Anger. *International Journal of Forensic Mental Health 15*(3), 235–246.

Shamblen, S. R., C. Kokoski, D. A. Collins, T. N. Strader, and P. McKiernan (2017). Implementing Creating Lasting Family Connections with reentry fathers: A partial replication during a period of policy change. *Journal of Offender Rehabilitation 56*(5), 295–307.

Sharkey, P., G. Torrats-Espinosa, and D. Takyar (2017). Community and the crime decline: The causal effect of local nonprofits on violent crime. *American Sociological Review 82*(6), 1214–1240.

Sviatschi, M. M. (2022). Making a narco: Childhood exposure to illegal labor markets and criminal life paths. *Econometrica, forthcoming*.

The Pew Research Center (2011). Global christianity: A report on the size and distribution of the world's christian population. in pew research center's forum on religion & public life. Technical report.

Tobon, S. (2020). Do better prisons reduce recidivism? evidence from a prison construction program. *Review of Economics and Statistics*, 1–47.

Tuttle, C. (2019, May). Snapping Back: Food Stamp Bans and Criminal Recidivism. *American Economic Journal: Economic Policy 11*(2), 301–27.

Ulmer, J. and D. Steffensmeier (2014, January). *The age and crime relationship: Social variation, social explanations*, pp. 377–396. United States: SAGE Publications Inc.

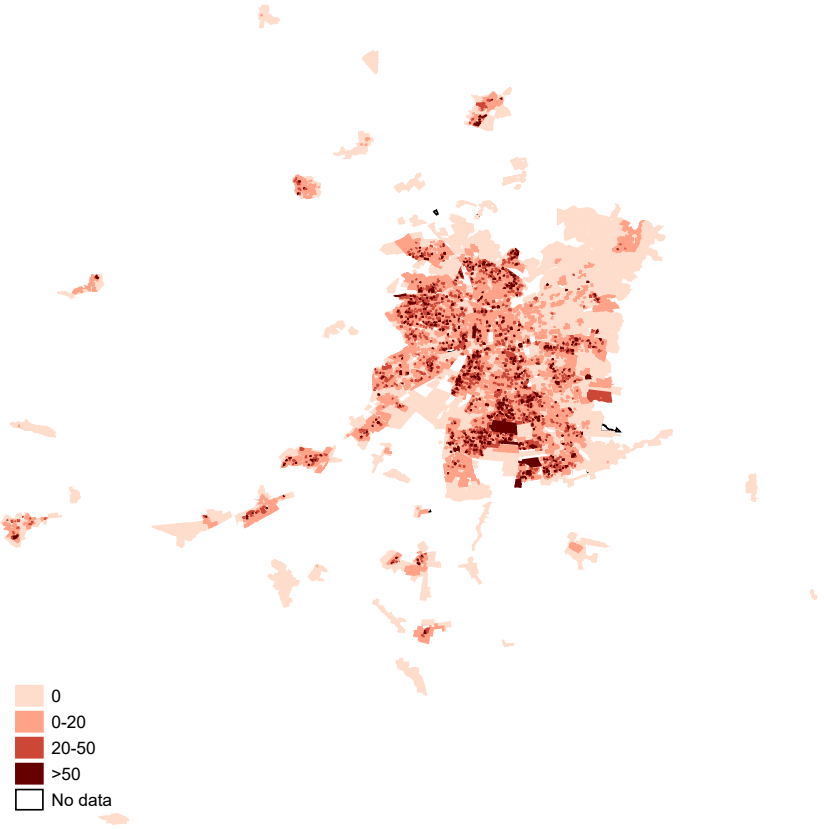
Valentine, E. and C. Redcross (2015, 12). Transitional jobs after release from prison: effects on employment and recidivism. *IZA Journal of Labor Policy 4*.

Yang, C. S. (2017a, May). Does Public Assistance Reduce Recidivism? *American Economic Review 107*(5), 551–55.

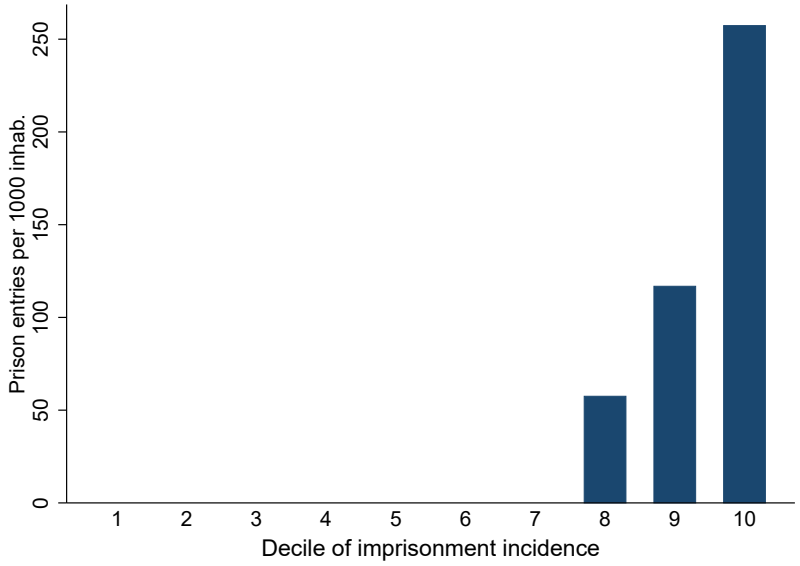
Yang, C. S. (2017b). Local labor markets and criminal recidivism. *Journal of Public Economics 147*, 16–29.

Yukhnenko, D., S. Sridhar, and S. Fazel (2019, 02). A systematic review of criminal recidivism rates worldwide: 3-year update. *Wellcome Open Research 4*, 28.

Figure I: Crime segregation in the city of Santiago de Chile



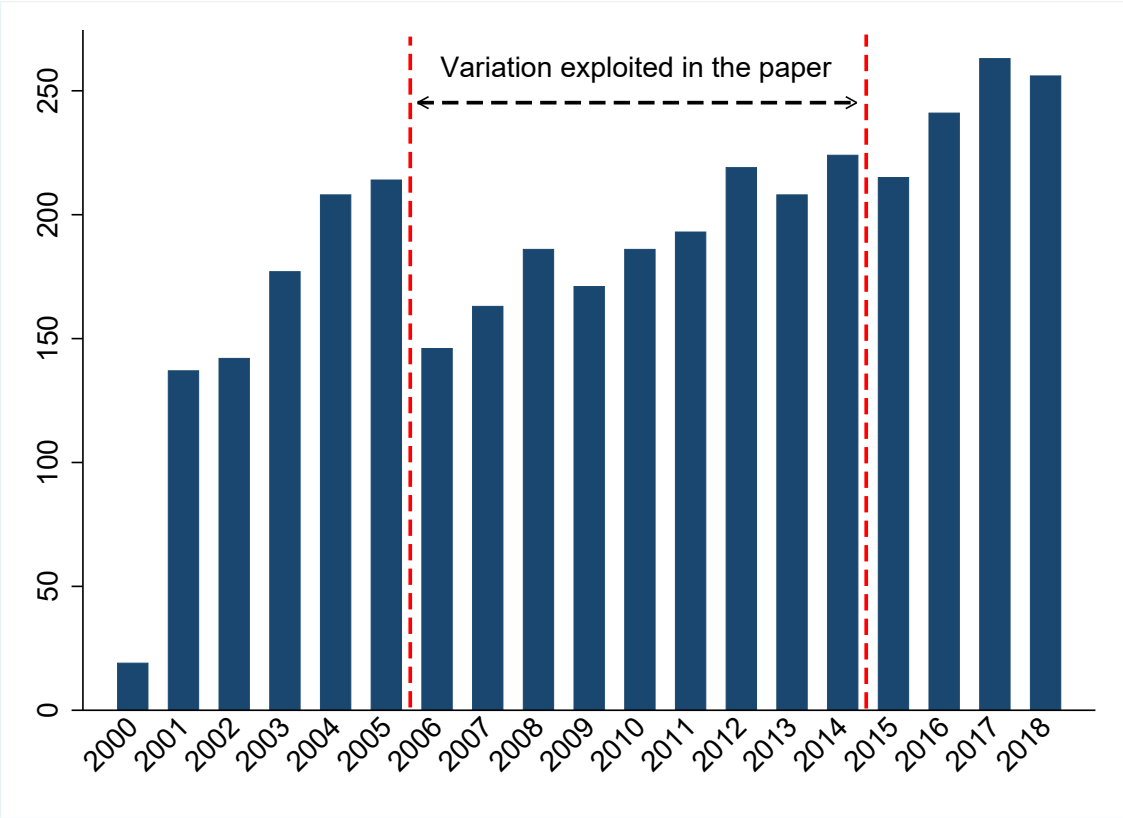
(a) Yearly imprisoned per 1,000 inhabitants (under 30) in Santiago.



(b) Distribution of imprisonment population across census blocks in Santiago.

Note: Graph a) shows a map with the number of young individuals (below 30) imprisoned per year per 1,000 individuals younger than 30 at the census block level. Graph b) shows an histogram with the distribution in deciles of the census blocks of the percentage of individuals imprisoned. The figures suggest high spatial concentration of the residences of individuals imprisoned in Santiago.

Figure II: Evangelical Churches Opening in Chile (2000 - 2018)

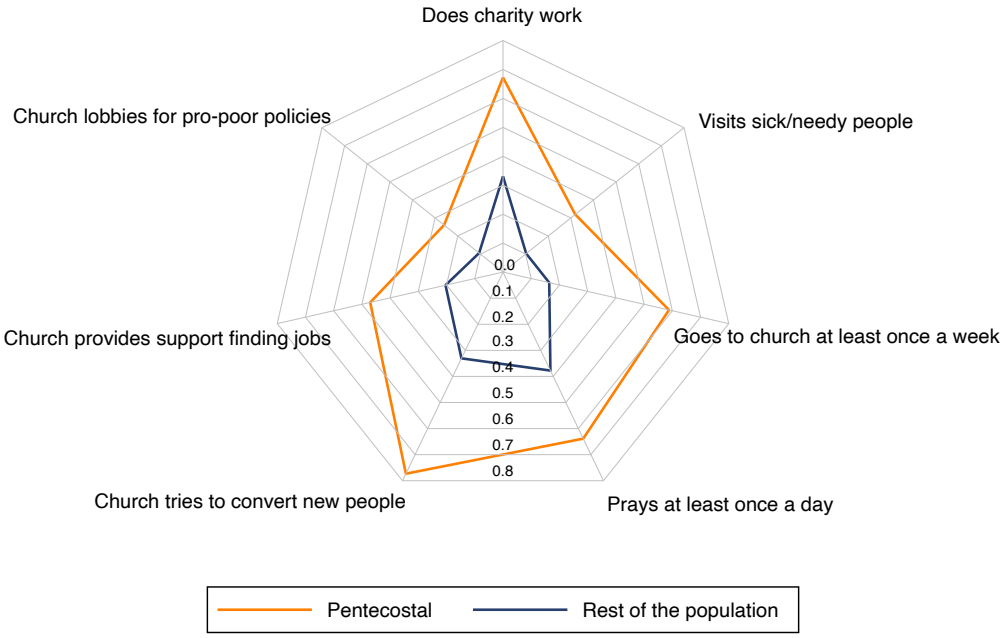


Note: This histogram provides information on the number of Evangelical churches opened yearly between 2000 and 2018. The main analysis conducted in the paper uses the churches opened between 2006 and 2014 because this is the overlapping period with information on the recidivism of individuals.

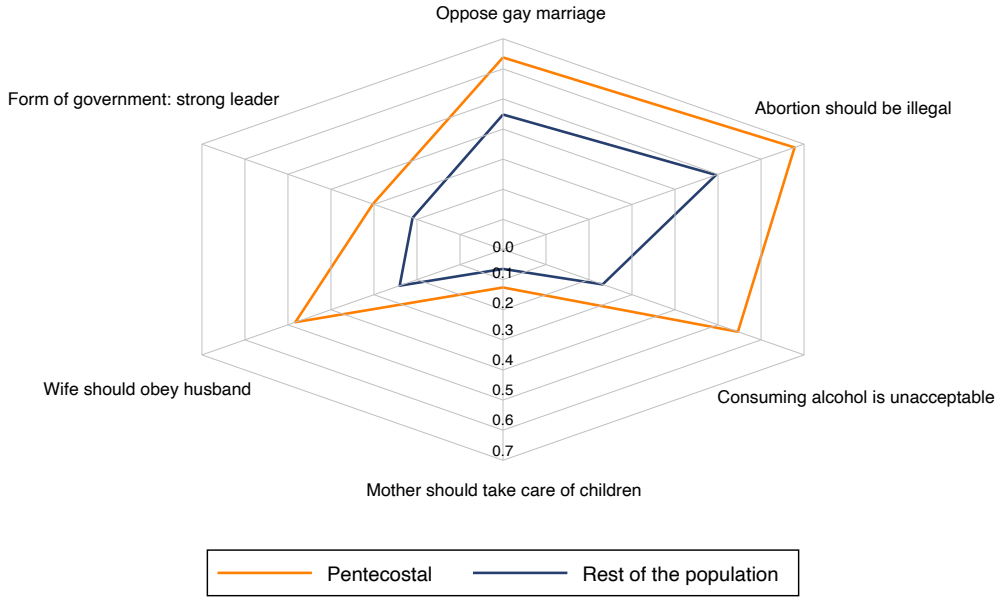
Figure III: Examples of Evangelical Churches in Chile

Note: This Figure illustrates some of the Evangelical churches in our sample.

Figure IV: Evangelical Churches Activities and Values



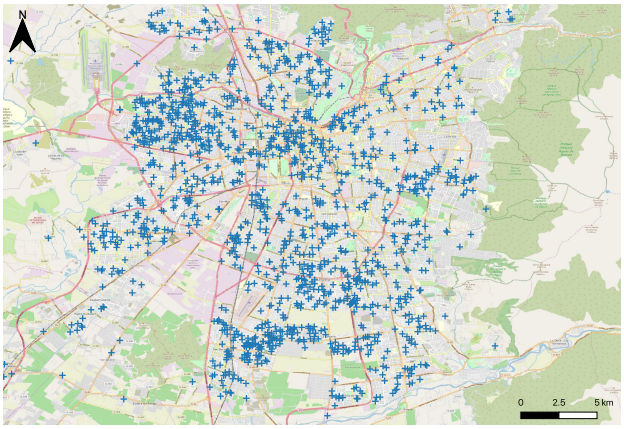
(a) Activities



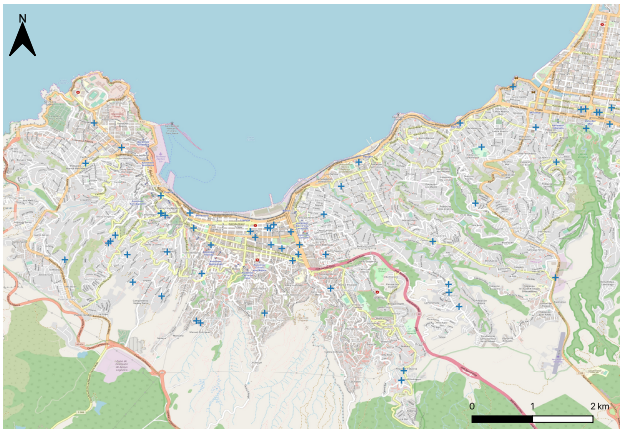
(b) Values

Note: These figures show how evangelical and non evangelical individuals differ in terms of values and participation in selected activities. The figure uses data from PEW Research Center (2014).

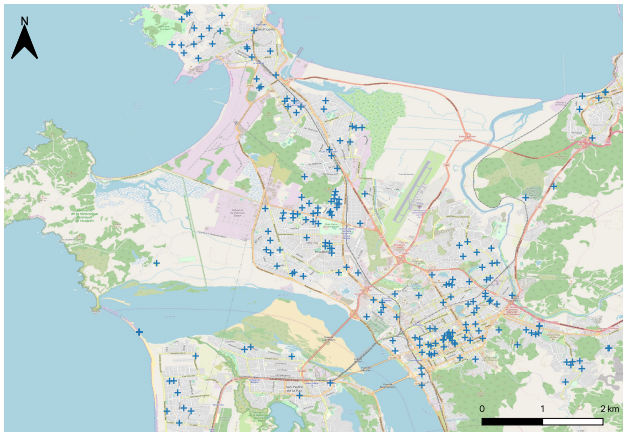
Figure V: Evangelical Churches Opening in Santiago, Valparaíso and Concepción (2000 - 2016)



(a) Santiago



(b) Valparaíso

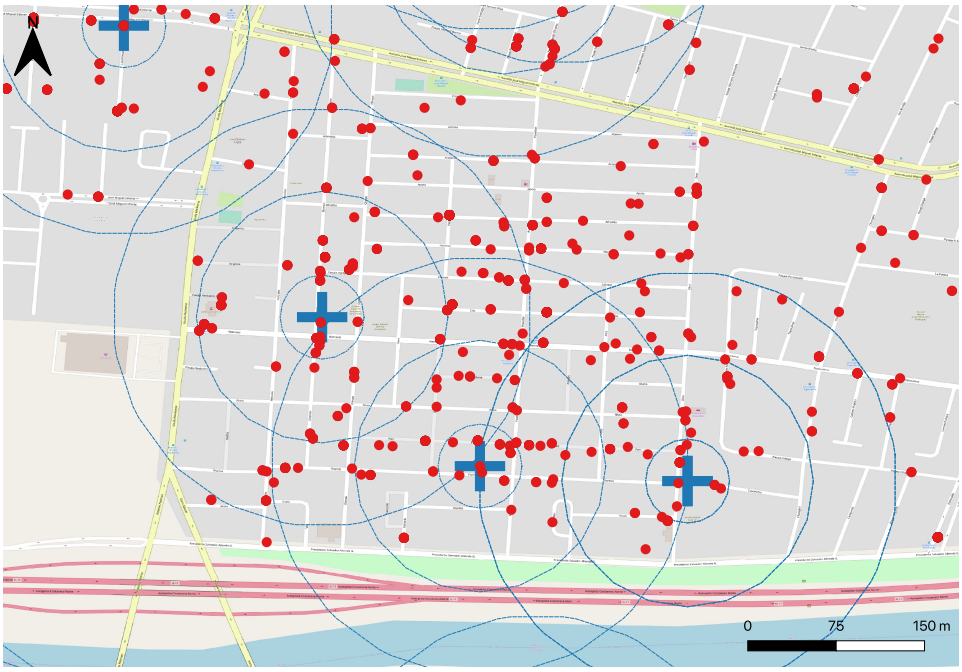


(c) Concepción

Note: These graphs shows the location of the Evangelical churches opened in the cities of Santiago, Valparaíso and Concepción between 2000 and 2016.

Figure VI: Treatment and Control Groups Definition

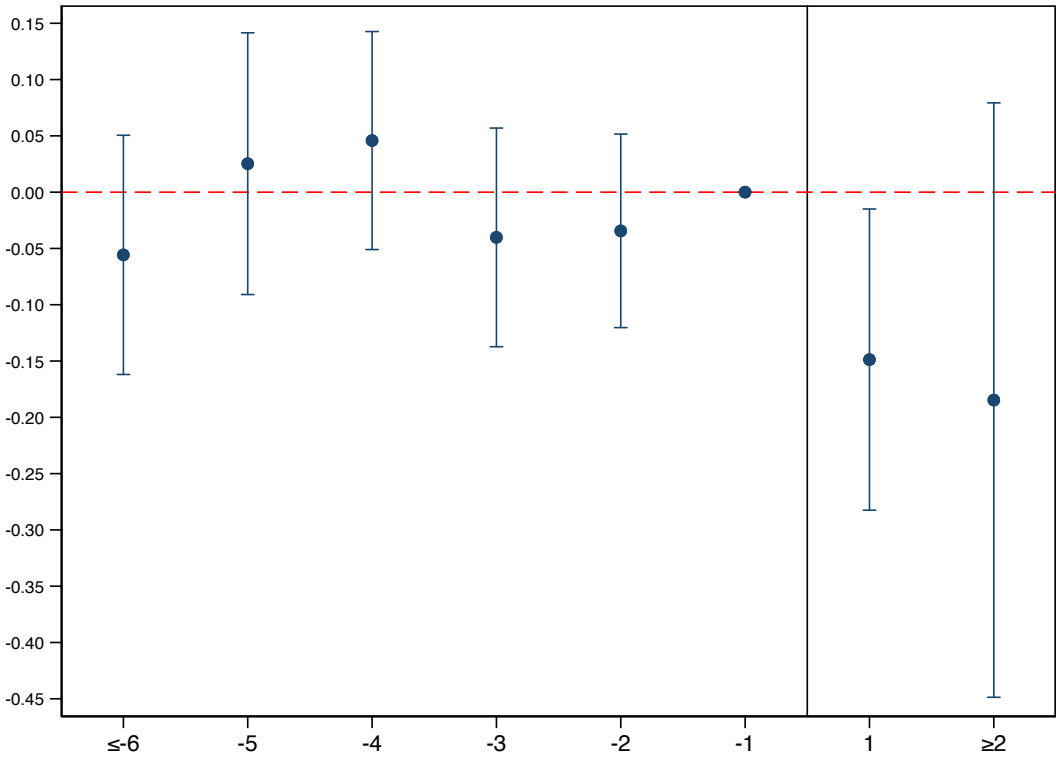
(a) Low Density Area



(b) High Density Area

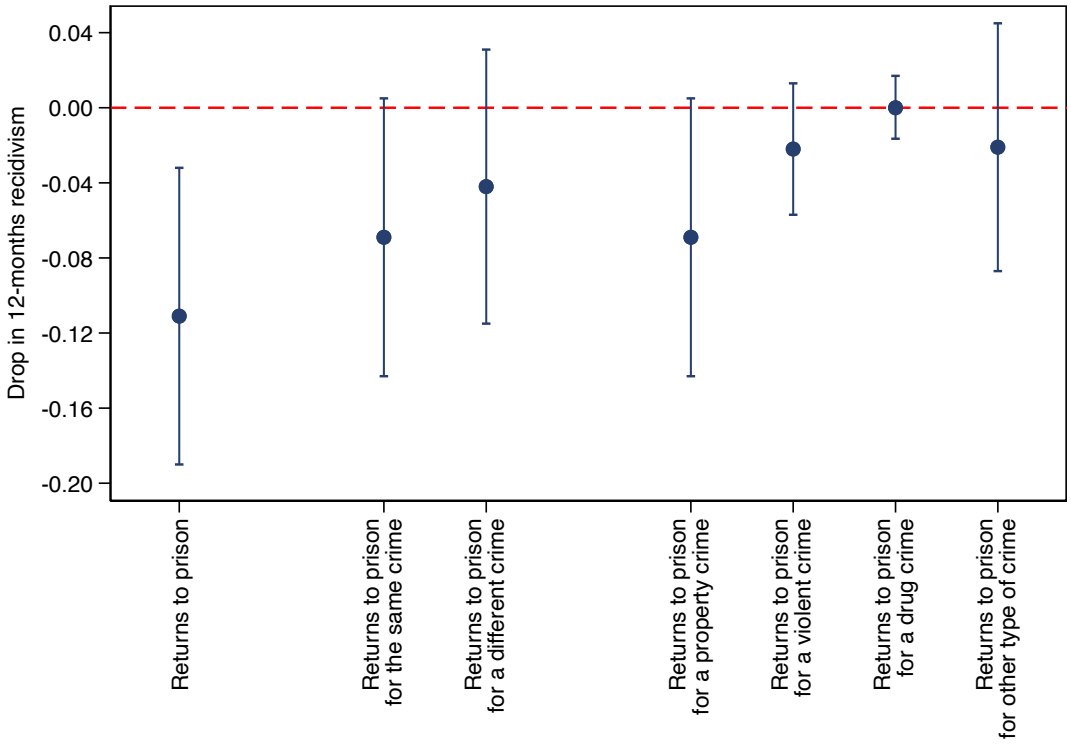
This figure illustrates the definition of treated and control groups used in the paper. The treatment group consists of individuals living within the smallest radius. The control group consists of individuals living on the outer ring. The intermediate ring is a buffer area. Panel (a) illustrates a low density area and panel (b) a high density area.

Figure VII: Effect of Evangelical Churches on Recidivism (Property Crimes)



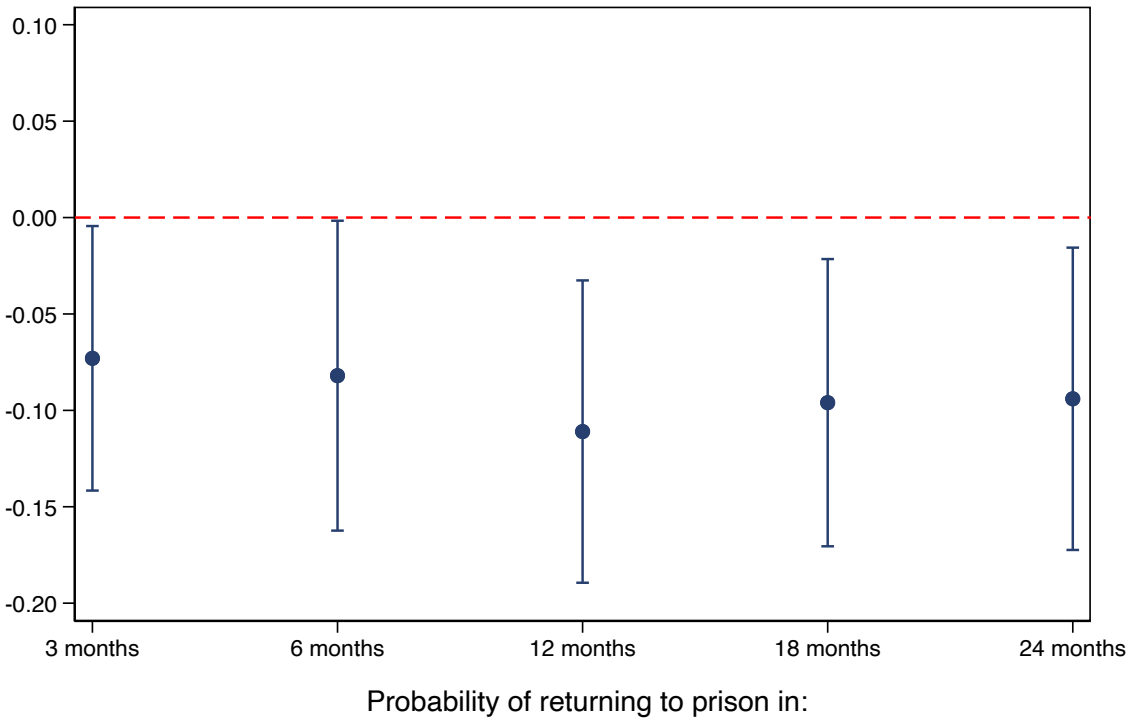
This figure illustrates how the estimated effect of Evangelical churches' openings on recidivism evolves with time.The treated group includes individuals living at 100 meters or less from the church location, while the control group individuals living between 250 and 350 meters from the church. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

Figure VIII: Decomposition of Reincarceration Reason



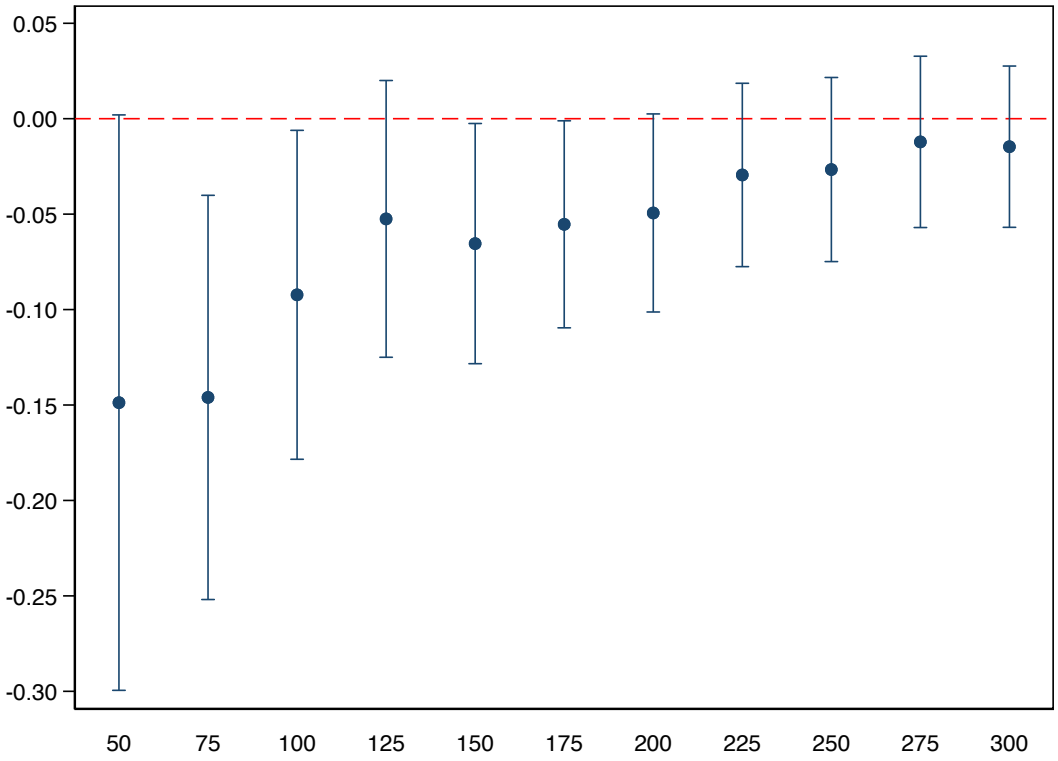
This figure illustrates estimates obtained from our main specification on different outcomes. The first coefficient illustrates the drop on 12-month reincarceration rates for individuals originally sentenced for property crime. The rest of the estimates come from specifications in which the original outcome is interacted with an indicator of the type of crime behind the reincarceration. The dots represent the estimated coefficients, and the bars 95% confidence intervals. Standard errors are clustered at the church level (i.e., inner and outer ring).

Figure IX: Effect of Evangelical Churches on Recidivism at Different Months (Property Crime)



This figure illustrates estimates obtained from our main specification on reincarceration within different months. The coefficients illustrate the drop on 3, 6, 12, 18, and 24 months reincarceration rates for individuals originally sentenced for property crime. The dots represent the estimated coefficients, and the bars 95% confidence intervals. Standard errors are clustered at the church level (i.e., inner and outer ring).

Figure X: Effect of Evangelical Churches on Recidivism by Inner Ring Radius



This figure illustrates how the effect of Evangelical churches' openings on recidivism changes depending on the radius used to define the treated group. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

Table I: Summary Statistics

	All individuals entering prison before a church opening	Individuals in a 100m radius from the church	Individuals between 250m and 350m from the church
	(1)	(2)	(3)
A. Demographic characteristics			
Age at entry	23.651	23.417	23.447
Gender = Male	0.893	0.896	0.880
Sexual orientation = heterosexual	0.986	0.989	0.985
Nationality = Chilean	0.987	0.992	0.990
Belongs to a minority = No	0.979	0.979	0.977
B. Education level			
Primary Education	0.402	0.452	0.446
Some Secondary Education	0.307	0.309	0.304
Complete Secondary Education	0.249	0.215	0.218
Postsecondary Education	0.042	0.025	0.033
C. Family characteristics:			
Single	0.879	0.872	0.867
Married	0.113	0.121	0.126
Divorced	0.008	0.007	0.007
Widow(er)	0.001	0.000	0.001
Children	1.619	1.647	1.666
D. Religion:			
Atheist	0.211	0.190	0.199
Catholic	0.473	0.438	0.438
Evangelical	0.305	0.363	0.354
Other Religion	0.010	0.009	0.010
E. Criminal history and sentence characteristics:			
Previous sentences	1.444	1.006	1.024
Length of the sentence	308.435	315.310	313.785
Property crimes = 1	0.401	0.419	0.422
Violent crimes = 1	0.292	0.314	0.305
Drug crimes = 1	0.074	0.075	0.073
Returns to prison in less than 12 months	0.444	0.443	0.447
Observations	216,836	7,343	33,825

Notes: The table present summary statistics for individuals entering prison for property crimes, violent crimes and drugs related crimes before the opening of an Evangelical church around them and who are released over the time period that we study. Each observation corresponds to an individual-conviction combination in column (1) and to an individual-conviction-church combination in columns (2) and (3). This means that an individual can appear multiple times in column (1). In columns (2) and (3) we focus on the Evangelical church that first opens during the period that we study. While column (2) shows statistics for individuals living at most at 100 meters from the church, column (3) focus on individuals living between 250 and 350 meters from it.

Table II: Effect of Openings of Evangelical Churches on 12 Months Recidivism

	Type of Crime behind the Original Sentence			
	Property Crimes (1)	Drug Crimes (2)	Violent Crimes (3)	Other Crimes (4)
Inner ring = 1 × Church opened = 1	-0.111	-0.007	0.010	-0.015
	(0.040)	(0.080)	(0.036)	(0.043)
Inner ring = 1	0.027	-0.034	-0.002	-0.018
	(0.016)	(0.035)	(0.035)	(0.015)
Church opened = 1	0.005	0.027	0.031	0.051
	(0.021)	(0.044)	(0.022)	(0.039)
Observations	14269	2210	9954	13708
Outcome mean before church opening	0.61	0.27	0.34	0.39

Notes: The table presents Difference-in-Differences estimates for the effect of openings of Evangelical churches on the probability of returning to prison in the 12 months following the release date by the type of crime originally committed. The inner ring includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table III: Effect of Evangelical Churches Openings on 12-months Recidivism (Property Crime)

	(1)	(2)	(3)	(4)	(5)
			Panel A - Main Specification		
Inner ring = 1 × Church opened = 1	-0.111	-0.110	-0.110	-0.108	-0.109
	(0.040)	(0.040)	(0.040)	(0.040)	(0.040)
Observations	14269	13794	13794	13738	13689
Outcome mean before church opening	0.61	0.61	0.61	0.61	0.61
			Panel B - Main Specification with Church × Release-year FE		
Inner ring = 1 × Church opened = 1	-0.155	-0.187	-0.189	-0.191	-0.177
	(0.064)	(0.062)	(0.062)	(0.062)	(0.063)
Observations	12178	11691	11691	11631	11584
Outcome mean before church opening	0.62	0.63	0.63	0.63	0.63
			Panel C - Alternative diff-in-diff estimation method (Gardner, 2021)		
Inner ring = 1 × Church opened = 1	-0.110	-0.098	-0.103	-0.101	-0.109
	(0.047)	(0.047)	(0.047)	(0.047)	(0.047)
Observations	4649	4564	4564	4551	4543
Outcome mean before church opening	0.65	0.66	0.66	0.66	0.66
Demographic characteristics	No	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes
Number of churches within 1km	No	No	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes

Notes: The table presents difference-in-differences estimates for the effect of openings of Evangelical churches on the probability of returning to prison in the 12 months following the release date for individuals originally sentenced for property crime. In Panels A and B the treatment group includes individuals living at 100 meters or less from a church, and the control group includes individuals living at between 250 meters and 350 meters from a church. In contrast, in Panel C both treatment and the control groups consists of individuals living within 100 meters from a church. In all cases we focus on individuals who enter prison before a church opens, and exploit variation on whether the church is already open once the individuals return to the neighborhood. All specifications include release-year and church fixed effects. The specification in Panel B includes the interaction between them. The results in Panel C were estimated using the two-stages difference-in-differences approach discussed in Gardner (2021) for staggered treatment adoption. Demographic controls include age at entry and gender, socioeconomic controls include a set of dummies indicating if the individual reached primary, secondary or post secondary education. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. Family controls include civil status and number of children, and religion refers to a set of dummies that indicate if an individual defines himself as Atheist, Catholic, Evangelical or as a member of other religion (i.e. Other Christian, Muslim, Jew, Jehovah Witness). Finally, "Number of churches within 1km "is the number of Evangelical churches already operating when an individual is released from prison within 1km from his home. In parenthesis, standard errors clustered at the church level (i.e., neighborhood form by the inner plus the outer ring).

Table IV: Effect of Openings of Evangelical Churches on Neighbors' Characteristics

	Evangelical	Catholic	Atheist	Other Religion	Employed Young Male	Employed Young Male Evangelical
	(1)	(2)	(3)	(4)	(5)	(6)
Inner ring = 1 × Church opened = 1	0.010	-0.006	-0.001	-0.002	0.011	0.026
	(0.003)	(0.003)	(0.002)	(0.002)	(0.006)	(0.011)
Inner ring = 1	0.003	-0.004	-0.000	0.001	-0.006	-0.017
	(0.002)	(0.002)	(0.001)	(0.001)	(0.005)	(0.009)
Church opened = 1	0.015	-0.027	0.038	-0.027	0.006	0.010
	(0.001)	(0.002)	(0.001)	(0.001)	(0.003)	(0.005)
Observations	4,062,418	4,062,418	4,062,418	4,062,418	1,095,386	88,041
Outcome mean	0.176	0.643	0.120	0.060	0.477	0.603

Notes: The table presents difference-in-differences estimates for the effect of an Evangelical church opening on religion and labour force participation. The inner ring includes individuals living in census blocks with a centroid at 100 meters or less from the church. The control group includes individuals living in census blocks with a centroid at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table V: Effect of Openings of Evangelical Churches on Recidivism by Proximity to Public Services (Property Crimes)

	Dist. to Municipality Top, mid and bottom 33% (1)	Education Centres in 500 meters (2)	Health Centres in 1000 meters (3)	Religion: Evangelical (4)
Inner ring = 1 × Church opened = 1	-0.144	-0.262	-0.162	-0.067
	(0.069)	(0.074)	(0.068)	(0.047)
Inner ring = 1 × Church opened = 1 × Inter.1	0.004	0.024	0.017	-0.106
	(0.084)	(0.009)	(0.017)	(0.076)
Inner ring = 1 × Church opened = 1 × Inter.2	0.098			
	(0.089)			
Observations	14270	14270	14270	14270
Outcome mean before church opening	0.61	0.61	0.61	0.61
	Effects after adding interactions			
Baseline Effect + Interaction 1	-0.140	NA	NA	-0.173
	(0.058)	NA	NA	(0.065)
Baseline Effect + Interaction 2	-0.046			
	(0.062)			

Notes: The table presents difference-in-differences estimates for the effect of new openings of evangelical churches on the probability of returning to prison in the twelve months following the release date for individuals sentenced for property crime. The inner ring group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. Columns (1) to (3) study heterogeneous effects by proximity to public services. Column (4) studies heterogeneous effects by the religion of the inmate before entering prison. The average number of educational centers at 500m or less from the individuals in the estimation sample is 6.24. The average number of health centers at 1000m or less from these individuals is 3.11. 41.13% of them were Evangelicals before entering prison. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table VI: Effect of Evangelical Churches and Non-religious Organizations Openings on Recidivism

	Pr. of Returning to Prison in 12 months					
	Evangelical Churches	Labor insertion	Alcohol & drug abuse rehabilitation	Sports	Neighborhood and Housing	Others
Treated = 1 × Institution opened = 1	-0.111	-0.111	-0.094	0.011	0.002	-0.015
	(0.040)	(0.049)	(0.167)	(0.042)	(0.028)	(0.031)
Treated = 1	0.027	0.034	-0.002	0.014	0.015	0.009
	(0.016)	(0.024)	(0.040)	(0.014)	(0.013)	(0.018)
Institution opened = 1	0.005	0.014	0.085	0.006	-0.011	0.017
	(0.021)	(0.027)	(0.072)	(0.022)	(0.016)	(0.017)
Observations	13794	6245	628	14269	19742	13093
Outcome mean	0.61	0.59	0.60	0.60	0.60	0.59

Notes: The table presents difference-in-differences estimates for the effect of churches and non-religious organizations opening in the neighborhood on the probability of returning to prison in the 12 months following the release date. Column (1) focuses on Evangelical churches, column (2) on labor insertion institutions, column (3) on alcohol and drug abuse rehabilitation institutions, column (4) on sports institutions, column (5) on neighborhood and housing institutions, and column (6) on other type of institutions. The treated group includes individuals living at 100 meters or less from any of these institutions. The control group includes individuals living at between 250 meters and 350 meters from the relevant institution. All specifications include year and neighborhood fixed effects. Demographic controls include age at entry to prison and gender. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table VII: Effect of Openings of Evangelical Churches on the reporting of crime committed in the neighbourhood

	Number of crimes reported per sq km in the ring:			
	Property crime (1)	Violent crime (2)	Drug crime (3)	Any crime (4)
Inner ring = 1 × Church opened = 1	11.81	0.98	-0.73	54.51
	(11.50)	(4.29)	(0.84)	(42.01)
Observations	17906	17906	17906	17906
Outcome mean	202.82	63.17	2.15	864.01

Notes: The table presents difference-in-differences estimates for the effect of an Evangelical church opening on the number of crimes denounced to the police in the neighborhood. The inner ring includes crimes denounced to the police committed at 100 meters or less from the church. The control group includes crimes denounced to the police committed at between 250 meters and 350 meters from the church. The outcome is the number of crimes denounced normalized by the area of treatment and control zones. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table VIII: Effect of an Evangelical Church Opening on Incarceration (first sentence)

	Property Crimes (1)	Drug Crimes (2)	Violent Crimes (3)	Other Crimes (4)
Inner ring = 1 × Church opened = 1	-1.164	-0.505	-0.694	-0.827
	(0.342)	(0.313)	(0.396)	(0.537)
Inner ring = 1	2.608	1.675	3.022	5.113
	(0.323)	(0.252)	(0.356)	(0.460)
Church opened = 1	0.490	-0.0507	0.266	0.612
	(0.292)	(0.204)	(0.287)	(0.391)
Observations	32,180	32,180	32,180	32,180
Outcome mean	6.091	3.739	7.397	15.06

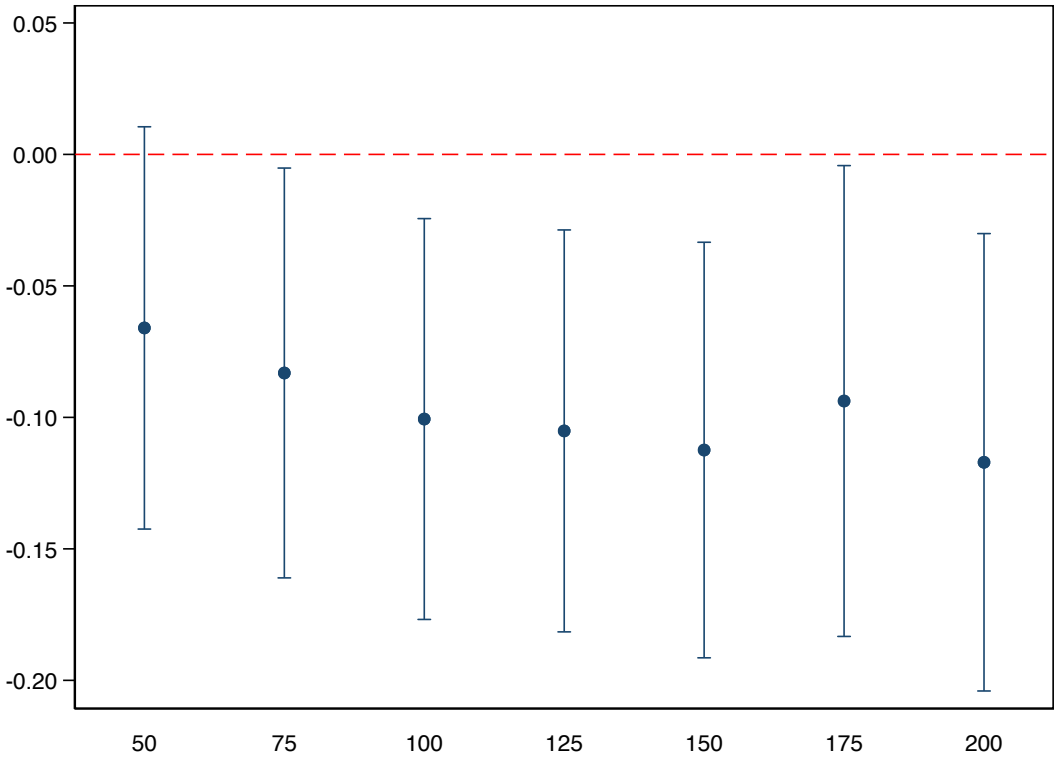
Notes: The table presents difference-in-differences estimates for the effect of an Evangelical church opening on the number of individuals entering prison. The inner ring includes individuals living at 100 meters or less from the church. The control ring includes individuals living at between 250 meters and 350 meters from the church. The outcome is the number of individuals entering prison normalized by the area of treatment and control zones. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

A Robustness Checks

A.1 Reincarceration and Different Buffers

This subsection illustrates how the estimates vary when changing the buffer radius that defines the distance between treated and control areas. The baseline specification uses a buffer of 150 meters. As Figure A.I illustrates, the estimates stabilize after defining a buffer of 100 meters. This is consistent with the results discussed in subsection 5 that show that the effect of an Evangelical church opening is very local.

Figure A.I: Effect of Evangelical Churches on Recidivism by Buffer Radius



This figure illustrates how the estimated effect of Evangelical churches' openings on recidivism changes depending on the distance used to separate treated and control groups. In all cases, the treated groups includes individuals living at 100 meters or less from the church location. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

A.2 Reincarceration and Release Timing

This subsection presents the results of a complementary exercise in which we estimate specification (1), but dropping from the sample individuals returning to the neighborhood too close to the date of the church opening. We use different time windows ranging from 0 to 180 days. The aim of this exercise is to eliminate from individuals who returned to their neighborhood before the church was open, but that could still have been affected by the church. The results on Table A.I show that independently of the time window we define to exclude observations, the estimates remain very stable, suggesting that this is not a concern for our main analyses.

Table A.I: Effect of Openings of Evangelical Churches on Recidivism (Varying time window around church opening)

	0 days	30 days	60 days	90 days	120 days	150 days	180 days
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inner ring = 1 × Church opened = 1	-0.111	-0.100	-0.127	-0.117	-0.125	-0.126	-0.119
	(0.040)	(0.042)	(0.046)	(0.048)	(0.051)	(0.052)	(0.053)
Observations	14269	13926	13613	13333	13088	12860	12623
Outcome mean before church opening	0.61	0.61	0.61	0.61	0.61	0.61	0.61

Notes: The table presents Difference-in-Differences estimates for the effect of new openings of Evangelical churches on the probability of returning to prison in the 12 months following the release date for individuals sentenced for property crime. The inner ring includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

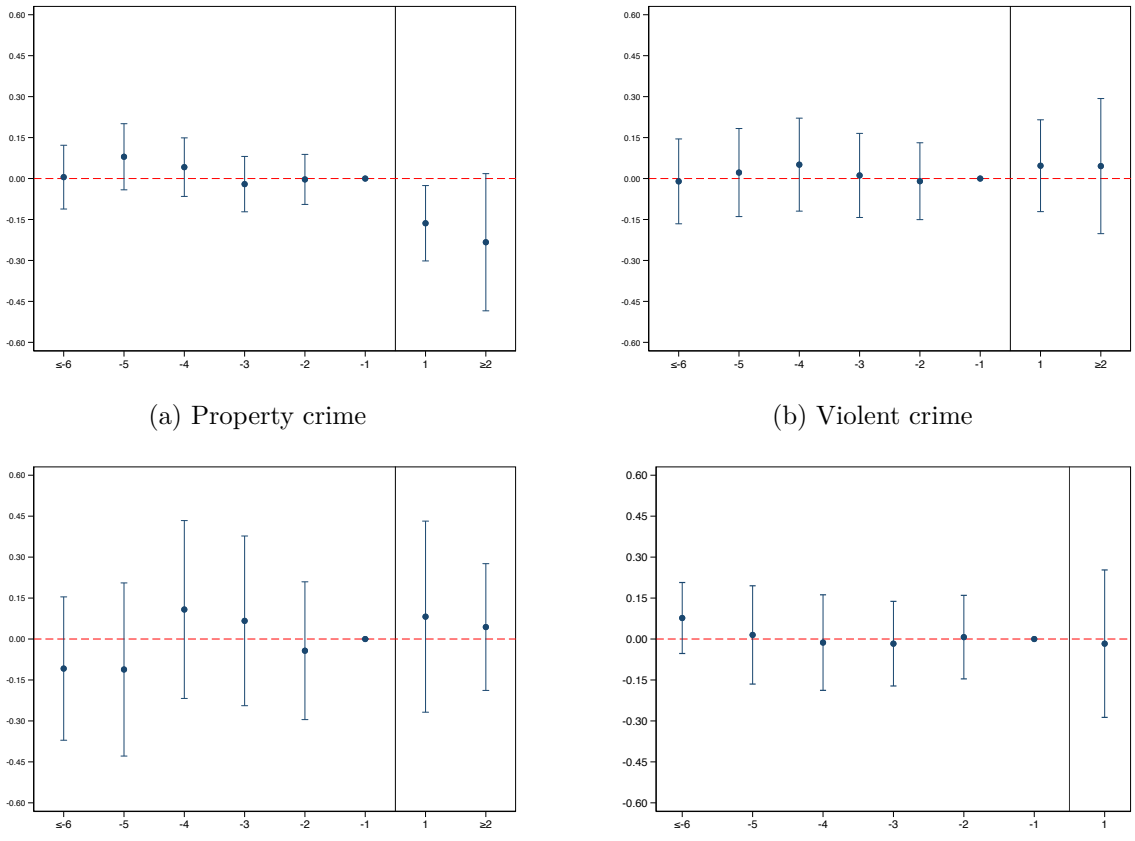
A.3 Reincarceration: Event Studies

This section present event studies of the effect of an Evangelical church opening on 12-months reincarceration (see Figure A.II). In Section 5 we present a similar analysis focusing only on individuals released from prison after completing a sentence for property crime. Here we also look at individuals who committed other types of crimes.

The number of individuals sentenced to prison for violent crimes, drug crimes or other crimes is considerably smaller than the number of individuals sentenced to prison for property crime. Thus, when focusing on these other categories our estimates are much less precise. However, these results are consistent with the analyses we present in the main body of the paper. There are no differences between treated and control areas before the opening of the church. Once the church opens, there is a clear drop in reincarceration rates among property crime offenders. We do not find significant changes in the reincarceration rates of other type of offenders.

As discussed in Section 5 event studies on reincarceration conclude two years after a church opens as a consequence of the restriction we impose on the timing at which individuals enter prison. Our analyses focus on individuals who enter prison before the church opens to ensure that their entrance to prison is not affected by the presence of the church. We observe few sentences lasting more than two years, and as a consequence of this we do not have enough power to study what happens with individuals returning to their neighborhood three or more years after the church opens. When looking at the less severe crimes included in the category *Other crimes* sentences are even shorter. Therefore, we only look at one year after the opening of the church.

Figure A.II: Effect of Evangelical Churches on Recidivism



(a) Property crime

(b) Violent crime

(c) Drug crime

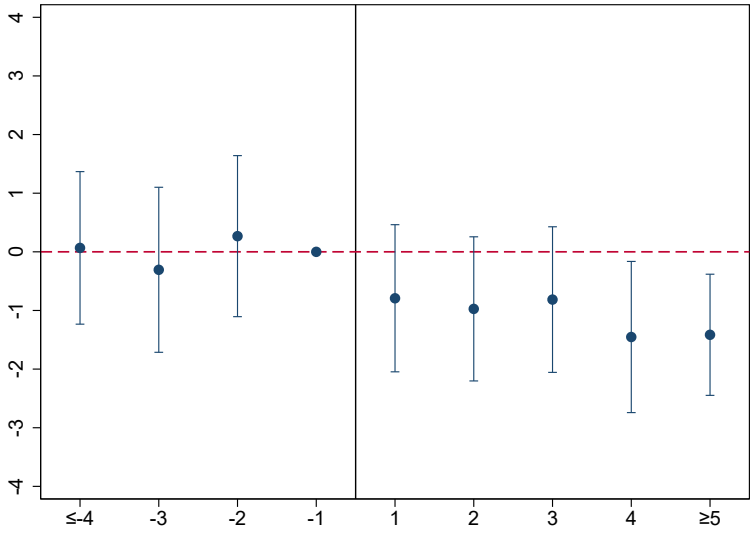
(d) Other crime

This figure illustrates how the estimated effect of Evangelical churches' openings on recidivism evolves with time.The treated group includes individuals living at 100 meters or less from the church location, while the control group individuals living between 250 and 350 meters from the church. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

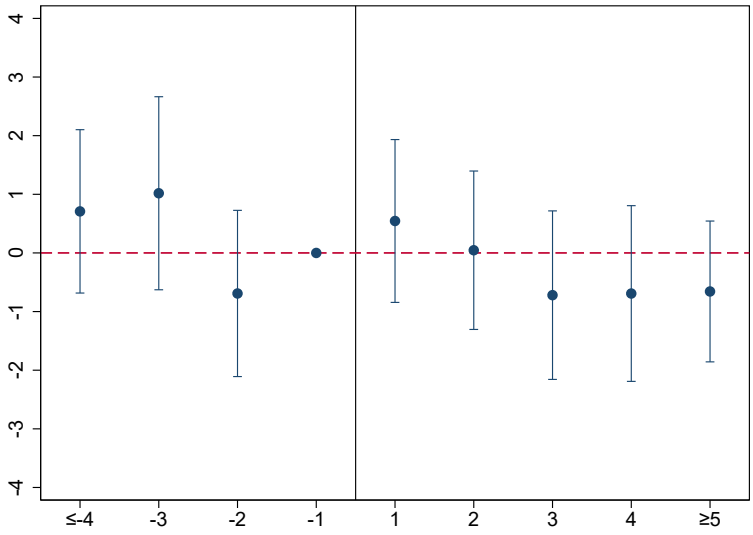
A.4 First Sentences: Event Studies

Figure A.III reports the results of event study analyses of the effect of the opening of Evangelical churches on first imprisonment. The figure reveals that treatment and control areas were on parallel trends before the opening of the church and that the effect of the church increases over time.

Figure A.III: Effect of Evangelical churches on first time in prison



(a) Property crime: Imprisoned per km2



(b) Violent crime: Imprisoned per km2

This figure illustrates how the estimated effect of Evangelical churches' openings on first time in prison evolves with time. The analysis is conducted at the ring level. Treated rings include all individuals living at 100 meters or less from the church location that were imprisoned for the first time, while the control rings include all individuals living at between 250 and 350 meters from the church that were imprisoned for the first time. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

A.5 Neighbourhood characteristics and community-based organizations in treatment and control areas

This section explores the link between Evangelical churches, neighborhood characteristics, and the presence of community based organizations.

First we use 2002 and 2012 census data to explore whether individuals living within 100 meters from the church differ from individuals that live within 250 and 350 meters from the church in terms of demographic and socioeconomic characteristics.

The results of this analysis are reported in columns 1-14 of Table A.II. For all variables examined the coefficient measuring the difference between treatment and control individuals in 2002, before the opening of the church, is small and statistically indistinguishable from 0 at conventional confidence levels for all variables.[29] However, the church seems to have slightly increased the share of Evangelicals and decreased the share of Catholics.

Second, in Table A.III we show that released individuals living within 100 meters from the church have similar access to public services (measured by distance) than those living within 250 and 350 meters from the church.

Third, we examine whether the opening of an Evangelical church affected the presence of community-based organizations in the neighbourhood. The results of this analysis, conducted at the ring level following the identification strategy described in Section 6.6, are reported in Table A.II. They show that the presence of community-based organizations was not different in inner and outer rings neither before nor after the opening of the church.

[29] For this analysis we focused on churches opened between the implementation of the censuses in 2002 and 2012.

Table A.II: Evangelical Churches and Neighbourhoods Demographic and Socio-Economic Characteristics

	(1) Ln Pob per Sqkm	(2) Evangelical	(3) Catholic	(4) Atheist	(5) Other religion	(6) Working (18-30)	(7) Working all	(8) Neither work nor study (15-24)	(9) Studying	(10) Adolescent mother	(11) Married as teenager	(12) Age	(13) Female	(14) N children	(15) Community-based organisations per Sqkm
Inner circle = 1 × Church opened = 1	0.031	0.010	-0.006	-0.001	-0.002	0.005	-0.000	0.005	-0.002	-0.004	0.002	0.041	0.001	0.024	-1.265
	(0.021)	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.002)	(0.004)	(0.006)	(0.004)	(0.002)	(0.123)	(0.002)	(0.010)	(0.994)
Inner cicle = 1	-0.003	0.003	-0.004	0.000	0.001	-0.002	-0.000	0.001	-0.007	0.002	-0.000	0.094	-0.002	0.008	1.054
	(0.017)	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)	(0.001)	(0.004)	(0.005)	(0.003)	(0.002)	(0.086)	(0.002)	(0.007)	(0.948)
Observations	43,007	4,062,418	4,062,418	4,062,418	4,062,418	911,949	5,292,533	1,147,534	350,518	174,113	350,518	5,292,533	5,292,533	2,633,612	85,056
Outcome mean	9.849	0.176	0.643	0.120	0.060	0.531	0.387	0.192	0.799	0.096	0.042	33.080	0.516	1.582	2.457

Notes: In columns 1-14, the table presents difference-in-differences estimates for the effect of an Evangelical church opening on demographic and socioeconomic characteristics using the 2002 and 2012 censuses. The Inner circle includes individuals living in census blocks with a centroid at 100 meters or less from the church. The Outer circle includes individuals living in census blocks with a centroid at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In column 15, the table presents difference- in-differences estimates at the ring level following the identification strategy presented in section 6.6 for the effect of the opening of an evangelical church on the presence of community-based organization in the neighborhood. In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table A.III: Differences in distance to public services between treatment and control individuals

	Distance to (in km)					
	(1)	(2)	(3)	(4)	(5)	(6)
	Health center	Hospital	School	Nursery	Police station	Municipality
Inner circle = 1	-0.008	0.002	-0.004	-0.001	-0.001	0.001
	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)	(0.005)
Observations	68,264	68,264	68,264	68,264	68,264	68,264
Outcome mean	0.543	2.175	0.243	0.327	1.098	2.081

Notes: The table presents differences in the distance (km) to different public services between treatment individuals (living 100 meters or less from the church) and control individuals (living between 250 and 350 meters from the church). All specifications include neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

B Additional Results

B.1 Drug Consumption and Risky Behavior among Young Members of the Evangelical Church

Table B.IV: Drug Consumption and Risky Behavior among Members of the Evangelical Church

	Panel A - Individual Consumption of Drugs					
	Have you ever tried any of the following substances?			Have you used any of the following substances in the last month?		
	Alcohol	Tobacco	Marijuana	Alcohol	Tobacco	Marijuana
Member of the Evangelical Church = 1	-0.061	-0.052	-0.023	-0.085	-0.079	-0.012
	(0.003)	(0.003)	(0.002)	(0.003)	(0.003)	(0.002)
Observations	353,025	354,757	355,321	353,025	354,757	355,321
Outcome mean	0.743	0.665	0.247	0.396	0.361	0.109
Demographic characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Household composition	Yes	Yes	Yes	Yes	Yes	Yes
Grade and year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
School fixed effects						

	Panel B - Parental Control			
	How upset would your father be if he finds that you:		How upset would your mother be if she finds that you:	
	Got drunk? Very upset = 1	Smoked marijuana? Very upset = 1	Got drunk? Very upset = 1	Smoked marijuana? Very upset = 1
Member of the Evangelical Church = 1	0.055	0.010	0.063	0.019
	(0.003)	(0.002)	(0.003)	(0.002)
Observations	271,872	291,694	306,784	314,433
Outcome mean	0.533	0.806	0.525	0.778
Demographic characteristics	Yes	Yes	Yes	Yes
Household composition	Yes	Yes	Yes	Yes
Grade and year fixed effects	Yes	Yes	Yes	Yes
School fixed effects	Yes	Yes	Yes	Yes

Notes: The specifications presented in the table were estimated using data from the National Survey of Drug Consumption among Secondary Students (2001-2015). Panel (A) presents correlations between being a member of the Evangelical church and drug consumption. Panel (B) presents similar correlations for different measures of parental control. All specifications include grade, year and school fixed effects. Demographic controls include age and gender. Household composition is a set of dummies that indicate different types of households (i.e. both parents presents, only mother, only father, other structure). In parenthesis, standard errors clustered at the school level.