

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

Andrés Barrios-Fernández<sup>†</sup>

Jorge García-Hombrados<sup>‡</sup>

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## Abstract

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, an effect that represents a drop of 18% in the probability of returning to prison for this group of individuals. We discuss three classes of mechanisms that could drive these effects: promotion of Evangelism, provision of social support, and increased difficulty to commit crimes. Our analyses suggest that the social support that Evangelical churches offer to their communities—i.e., charitable activities and alcohol and drug abuse rehabilitation—is an important driver of their effects on recidivism. Evangelical churches also seem to make it more difficult to commit crimes by reducing the number of potential criminal partners in the neighborhood. Finally, we show that NGO openings also reduce recidivism. Organizations helping their beneficiaries to improve their earnings potential or to overcome alcohol and drug abuse problems reduce reincarceration rates by 11 and 10 percentage points respectively. These results suggest that interventions that give recently released inmates access to local support networks could play an important role in encouraging desistance from crime.

**Keywords:** Crime desistance, recidivism, neighborhood institutions.

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<sup>†</sup>Universidad de los Andes, CEP and CEPR. Monseñor Alvaro del Portillo, Las Condes, Santiago, Chile [abarriosf@uandes.cl](mailto:abarriosf@uandes.cl)

<sup>‡</sup>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](mailto:jorge.garciah@uam.es)

# 1 Introduction

Rehabilitating convicted criminals has proven to be challenging. Between 30% and 50% of inmates are reincarcerated in the two years following their release (Doleac, 2020; Yuhnenko 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 impact recidivism. 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.<sup>1</sup> Specifically, we show that the opening of an Evangelical church significantly reduces reincarceration rates among young inmates—i.e., inmates under 30 years old—recently released from prison.<sup>2</sup> We also show that the opening of non-religious organizations focusing on improving individuals’ employability and earnings potential or on alcohol and drug abuse rehabilitation reduces recidivism to a similar extent. Studying the role of neighborhood institutions in the rehabilitation of convicted criminals is particularly important in contexts where criminal offenders are geographically concentrated. This is the case of Chile, but also of many other countries including the US (Card et al., 2008; Chetty et al., 2016).<sup>3</sup>

Evangelical churches are interesting neighborhood institutions to study due to their fast expansion worldwide, and particularly in Latin America (Costa et al., 2018; The Pew Research Center, 2011).<sup>4</sup>

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<sup>1</sup>Chile has the largest reincarceration rate among OECD countries. While in Chile 50% of inmates return to prison within three years of their release, in the US this figure is close to 36%. See <https://worldpopulationreview.com/country-rankings/recidivism-rates-by-country>

<sup>2</sup>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).

<sup>3</sup>Appendix Figure A.I illustrates the geographic distribution of individuals under 30 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.

<sup>4</sup>The Pew Research Center (2011) estimates that 869 million individuals worldwide are members of an Evangelical

While strongly rooted in the local communities, their charitable activities, proselytism, and political lobbying are transforming the social landscapes of Latin American disadvantaged neighborhoods (Costa et al., 2018; Fediakova, 2013).

We exploit rich administrative data on the universe of individuals under 30 years old entering prison between 2006 and 2015. These data include inmates' home addresses, entry, and release dates. We combine these data with official records of Evangelical church exact addresses and opening dates from 2000 to 2018. To overcome endogeneity concerns, we use a difference-in-differences strategy. We define a treatment and a control area around each church. 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 nearby church opens 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. This research design does not exploit variation in staggered church openings. Thus, we can abstract from the challenges highlighted by Goodman-Bacon (2021) in the context of two-way fixed effect (TWFE) specifications.<sup>5</sup>

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% with 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), which shows that an important share of inmates re-offend very quickly, and highlights the relevance of the conditions and support that inmates encounter 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.<sup>6</sup>

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church.

<sup>5</sup>As a robustness check, we also present results from a specification that exploits variation in staggered church openings. To overcome the challenges discussed by Goodman-Bacon (2021), when estimating this specification, we rely on the two stages difference-in-differences approach suggested by Gardner (2021). Estimates are remarkably similar across specifications.

<sup>6</sup>Not finding significant drops in these crimes is not totally surprising. These types of crimes are less common in our 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).

Relying on the same research design described above, we also find that the opening of non-religious institutions reduces recidivism among property crime offenders. The opening of NGOs focused on improving employability and earnings potential leads to an 11 percentage points (18%) drop in 12-month reincarceration rates. The opening of NGOs offering alcohol and drug abuse rehabilitation also seems to reduce recidivism. Although not statistically significant, we find that these NGOs reduce 12-month reincarceration rates among property crime offenders by 10 percentage points (16%).

We explore and discuss three mechanisms that could drive the Evangelical church effects we find. Firstly, considering that Evangelical communities actively engage in proselytism and in the promotion of social norms against crime, they could affect recidivism by converting recently released inmates and the communities around them to Evangelism. Secondly, since Evangelical communities are typically very active in providing social support to the members of the community (Fediakova, 2004; Mariz, 1994; Costa et al., 2018), they could decrease reincarceration rates by helping recently released inmates to cope with some of their material and non-material needs. There is evidence suggesting that counting with social support could reduce recidivism (Yang, 2017a; Munyo and Rossi, 2015). Finally, Evangelical churches could make it more difficult to commit a crime by either increasing social monitoring or by making it more difficult to find criminal partners.

We conduct multiple analyses to study the relevance of these mechanisms and provide evidence that the social support provided by Evangelical churches plays an important role in the drop that we document in reincarceration rates. Evangelical churches also seem to reduce recidivism by making it more difficult to find criminal partners.

We first show that the opening of an Evangelical church only leads to a modest increase in the number of Evangelicals in treated areas and that our findings are driven by individuals who before entering prison—and therefore before the church opening took place—already identified themselves as Evangelicals. These results suggest that religious conversions are not the main mechanism behind our findings. We then use survey data collected from a random sample of Evangelical churches in our sample and confirm that beyond religious activities, the majority of these churches offer various forms of social support to their communities. Using this information, we conduct heterogeneity analyses that show that the effects are larger around churches in which these support activities are

more important. Churches offering alcohol and drug abuse rehabilitation seem to be particularly effective in reducing recidivism. We also find that the effects of church openings are larger in areas with limited public services, where former inmates may have less access to governmental support.<sup>7</sup> Using Census data, we also show that church openings increase employment levels among young men, and although we cannot tell whether the former inmates in our sample are the ones getting these new jobs, these findings indicate that the activities organized by the church make a difference in the community. Finally, we do not find evidence of an increase in social monitoring measured by the number of cases reported to the police in the neighborhood. We do, however, find a significant drop in the number of individuals sent to prison for the first time. Thus, the opening of Evangelical churches seems to also reduce the number of potential criminal partners available in the neighborhood.

These results together with our findings on non-religious organizations show that even in the absence of religious activities, local institutions can help to reduce recidivism. These results are important from a policy perspective, as they suggest that offering recently released inmates access to support networks in their neighborhoods could play an important role in encouraging desistance from crime.

Our results contribute to the literature that investigates how to encourage crime desistance among convicted criminals once they are released from prison.<sup>8</sup> 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 help them 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

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<sup>7</sup>The presence of the state and the availability of material support have been shown to influence both criminal activity and recidivism (see for instance Yang, 2017a; Tuttle, 2019; Blattman et al., 2021).

<sup>8</sup>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).

local criminal networks and shows that inmates who were not able to return to their neighborhoods 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.<sup>9</sup> Our paper expands this literature by showing that institutions that provide support to recently released inmates in their own neighborhoods 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 account, the negative correlation between religiosity and crime 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 also affect crime through the social support they offer to the members of the community.

The rest of the paper is organized into seven sections. Section 2 describes the activities and values promoted by Evangelical churches. Section 3 discusses our empirical strategy. Section 4 describes the data. Section 5 presents the results of Evangelical church openings on recidivism. Section 6 discusses mechanisms. Section 7 presents results of NGO openings on recidivism. Finally, section 8 concludes.

## 2 Evangelical Churches in Chile

The number of evangelical churches in Latin America has grown steadily over the past few decades. Chile is not an exception. The number of Chileans belonging to an evangelical church has increased from 12% in 1992 to 18% in 2019.<sup>10</sup> The number of Evangelical churches has experienced even faster growth, transforming the political and social life in numerous poor neighborhoods (Mansilla

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<sup>9</sup>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).

<sup>10</sup>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.

et al., 2017; Fediakova, 2012).

The growth of Evangelical churches in Chile was fueled by Law 19,638. This law, enacted in 1999, ensures religious freedom and equal rights to all churches. It enabled Evangelical churches to register and enjoy the same benefits and tax exemptions that other churches already had. Church numbers rapidly rose, peaking at 212 in 2005 (see Appendix Figure B.I for further details).

Evangelicals in Chile come predominately from low socioeconomic backgrounds. The Bicentenario survey shows that while 25% of low-SES individuals belong to an Evangelical church, this figure is only 6% among high-SES individuals.<sup>11</sup> These churches are typically small and fully funded by their members (see appendix Figure B.II for some examples). They are very autonomous and their pastors are relevant actors in their communities (Fediakova, 2004).

To better understand how church openings could impact the rehabilitation of former inmates, we conducted a survey. We randomly selected Evangelical churches in Santiago, the city with the highest number of church openings (56.7%) and inmates (69.5%) in our sample, and interviewed 66 pastors.<sup>12</sup> In Online Appendix B, we use geocoded Census data to show that the neighborhoods of surveyed churches are similar to the other neighborhoods in our sample. Online Appendix B also presents additional survey results and detailed information on local activities organized by Evangelical churches.

Table I summarizes the survey's main findings. It reveals that Evangelical churches are typically located in disadvantaged neighborhoods and start relatively small. 63% of them had less than 30 members at their foundation. They tend to be very local. 80% of pastors state that at least half of their members reside in the same neighborhood as the church. Individual contributions serve as the primary source of funding.

Evangelical churches address social problems affecting their communities by organizing various support activities alongside their religious work. In the survey, 88% of churches engage in charitable initiatives to assist those with material needs (e.g., soup kitchens, collects). Family support is provided by 85% (e.g., tutoring, couples and children-parents mediation), and 62% offer rehabilitation

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<sup>11</sup>The Bicentenario survey can be downloaded from: [urlhttps://encuestabicentenario.uc.cl/resultados/](https://encuestabicentenario.uc.cl/resultados/). The text refers to the 2019 edition.

<sup>12</sup>Some church leaders left a few questions unanswered. The tables that we present use all the answers we collected. Thus, some of the stats presented in the tables may have a different number of observations behind them.

programs for individuals struggling with substance abuse. Furthermore, 47% provide support to improve employability and earnings, while nearly 40% have rehabilitation programs for individuals involved in crime. Finally, 73% organize missionary outreach activities. These results indicate that Evangelical churches offer a range of services that extend well beyond their religious work.

### 3 Empirical Strategy

This section describes the empirical strategy that we use to study the effect of Evangelical church openings on recidivism.<sup>13</sup> We exploit variation generated by 1,659 church openings taking place between 2006 and 2014.

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 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. The area between 100 meters and 250 meters from the church, which corresponds to a buffer zone, is excluded from the analysis.

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 treatment or to a control area before and after the 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. In Online Appendix C.4, we show that our results are robust to excluding from the sample individuals released from prison too close to the church opening date. By doing this, we eliminate individuals that despite returning to their neighborhood before the church opens, could still have been treated by it.

Figure I 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

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<sup>13</sup>We use the same empirical strategy to estimate the effects of non-governmental organizations on recidivism. See Section IX for details.

be parallel to its trajectory in the outer ring.

Our baseline specification is:

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

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

As discussed in Section 2, Evangelical churches start small and are usually built next to the house of one of their members. 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. 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 were indeed in parallel trends before the church opening. In addition, in Online Appendix C.5 we use Census data to show that individuals living in control and treated areas are very similar both before and after a church opening. The Online Appendix also shows that access to public services is very similar in treatment and control areas, both before and after the church opening. Finally, it shows that the opening of Evangelical churches did not crowd out or in other community-based organizations.

In addition, to investigate how local is the effect of a church opening and whether we should be

concerned about its potential effects on control units, we present additional specifications in which we vary the radius defining the treatment area that confirm that the effects are indeed very local. In Online Appendix C.3, we also show that our results are robust to different buffer definitions, suggesting that spatial spillovers are not affecting our main results.

As illustrated in Panel (b) of Figure I, in high-density areas some churches are close to each other, meaning that some individuals are at the same time in the 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 staggered 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  $\beta_3$  can be thought as an estimate of the pooled effect of  $1,659 \times 2$  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 living 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 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-stage difference-in-differences approach proposed by Gardner (2021).<sup>14</sup>

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. As robustness,

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<sup>14</sup>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.

we follow Blattman et al. (2021) and address potential fuzzy clustering by computing exact p-values using randomization inference. Our results remain significant after following this alternative statistical inference approach.

## 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 under 30 years old entering and leaving prison between 2006 and 2015.

Prisoner 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. The church records include the name of the church, the address, and the exact date on which it was registered at the Ministry of Justice.

To create our main sample, we geocoded all prisoners’ and churches’ addresses. None of the datasets included postal codes, so we relied on street names, house numbers, and municipality names. We correctly identified around 80% of prisoners’ addresses and 90% of churches’ addresses.<sup>15</sup> Not finding all prisoners’ addresses should not be a major concern. It affects the power of our analyses, but unless there is some selection process making the share of unidentified addresses different in control and treated areas, this should not affect the consistency of our estimates. Something similar occurs with churches. Not finding a church address reduce the observations in our sample, but this should not affect the internal validity of our results.<sup>16</sup>

Since some individuals are serving sentences related to more than one crime, we classified them according to the most severe type of crime committed.<sup>17</sup> Among the three main crime categories

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<sup>15</sup>We only observe prisoners’ addresses when they enter 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.

<sup>16</sup>Our results could be biased if the unidentified churches open near control areas at the same time at which the churches that define treatment open. However, this would work against us finding significant effects.

<sup>17</sup>In Online Appendix D.1 we show that our results are robust to an alternative classification of crimes in which we allow individuals sentenced for multiple non-violent crimes to enter multiple specifications (i.e., an individual sentenced for property and drug crime enters both analyses).

that we study, we defined violent crime as the most severe, drug crime as the second most severe, and property crime 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. All crimes outside of these three categories are classified as “other crimes”. The most common crimes in this residual category are alimony, transit, and economic crimes (e.g., fraud or forgery).

In addition to the aforementioned records, we use individual-level data and the cartography of the population censuses of 2002 and 2012, which are available for urban areas. These data allow us to investigate whether the neighborhoods where new churches open experience changes in dimensions not related to criminal activity.

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

Table II presents summary statistics of our sample. Column (1) describes all the individuals entering 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, who are over-represented among the 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 show that the opening of an Evangelical church reduces reincarceration rates for individuals originally sentenced for property crime, but not for individuals originally sentenced for other types of crime. In addition, we show that the drop in reincarceration rates is already apparent three months after the release date and that the effects of church openings quickly decay with distance.

## 5.1 Effect of Evangelical Church Openings on Reincarceration: All Crimes

We start by studying how the opening of an Evangelical church affects recidivism among individuals originally sentenced for different types of crime. We proxy recidivism with reincarceration. While this measure does not reflect total recidivism, as some offenses might not lead to imprisonment, reincarceration is a relevant outcome that has been broadly used in the literature to study recidivism (Tuttle, 2019; Doleac, 2017).

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

Table III indicates 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 originally sentenced for committing property crimes. These individuals become 11.1 percentage points less likely to return to prison. This is a large effect. It represents a drop of 18.2% relative to the levels of recidivism observed in the neighborhood before the church opening.<sup>18</sup>

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 traits 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). Individuals involved in more severe crimes may

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<sup>18</sup>We address concerns related to potential fuzzy clustering by computing exact p-values using randomization inference. For this exercise, we randomly set the place and opening date of 1,659 churches across Chile and estimate the effects of these placebo churches on recidivism. We repeat this exercise 10,000 times to generate a placebo distribution of church effects. Using this distribution as a benchmark, we find that the exact p-value of the effect we find is 0.014.

have personal traits and links with criminal organizations that likely make their rehabilitation more challenging for 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 of as intention-to-treat estimates (ITT). Note, however, that the share of individuals who move to a different neighborhood after spending time in prison is 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 we document are similar to the ones that we would obtain by instrumenting the post-prison addresses with the ones we observe.

## **5.2 Effect of Church Openings on Reincarceration: Property Crimes**

This section shows that our findings for property crime offenders are robust to different specifications and that in the absence of the church, most of these inmates would have continued committing property crimes. It also shows that church effects are already apparent three months after an inmate's release and that they quickly decay with distance becoming indistinguishable from zero at 200 meters.

### **5.2.1 Church Openings and 12-month 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 II shows that at least during the 6 years before the church opening, there were no significant differences 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. We focus on individuals who enter prison before the church opens to ensure that their original entrance to prison is not affected by the church. Since most sentences related to property crime last less than two years, we do not have statistical

power to study what happens with individuals returning to their neighborhood three or more years after the church opens.

We next show that our results are robust 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 in our main specification, this approach does not exploit variation in staggered church openings. It can be thought of as pooling together multiple  $2 \times 2$  difference-in-differences, one per church opening. We complement these analyses, with an alternative identification strategy in which the control group consists of individuals that live within 100 meters of churches that have not yet opened (i.e., individuals living near churches opening between 2015 and 2018). As this strategy does exploit the staggered adoption of the treatment, we follow the two-stage 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 IV shows that our estimates are very similar across specifications. All the panels 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 (6) come from specifications that on top of these fixed effects control by month fixed effects, demographic, socioeconomic, and family characteristics. These specifications also control for criminal history, religion before entering prison, and the 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 crime or if they would have started committing other types of crime. To study this in more detail, we rely once more on our main specification, but we redefine the outcomes. We generate a set of variables in which we interact our original outcome (i.e., 12-month reincarceration) with an indicator of the type of crime behind an individual's return to prison. These variables indicate whether an individual returns to prison for a specific type of crime. The results of this exercise are presented in Figure III. According to these results, most of the drop

in 12-month reincarceration rates is driven by individuals who otherwise would have continued committing property crime (62.2%) or violent crime (19.8%).<sup>19</sup>

### **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 IV we study how these effects evolve over time. 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 find when looking at longer periods of time. This result is consistent with previous research showing 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 highlighting the importance of the conditions that inmates encounter 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 a new Evangelical church. 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 allow 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, but in Online Appendix C we also show that our results are robust to different buffer definitions. As illustrated in Figure V, the effects of church openings are very local. The coefficients quickly decrease with distance and become statistically indistinguishable from zero at 200 meters. This result relieves concerns about spatial spillovers. 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.

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<sup>19</sup>Online Appendix D.4 expands these analyses to individuals originally sentenced for other types of crime. In line with the results presented here, Evangelical churches do not seem to reduce recidivism among individuals originally sentenced for other types of crime.

These results are not surprising as we are investigating the effects of new churches. As discussed in Section 2, Evangelical churches start relatively small. 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 evolve over time. We focus on individuals entering 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 long sentences are likely to be different from the ones we study.

## 6 What is Behind our Results?

We study three classes of mechanisms that could drive our findings.

Firstly, Evangelical churches could reduce reincarceration rates through their religious activities. Evangelical communities actively engage in proselytism and promote strict social norms against risky behaviors—e.g., consumption of alcohol and drugs—and participation in crime. Thus, our findings could be in part driven by inmates and their immediate communities converting to Evangelism and adopting its values.

Secondly, Evangelical churches could reduce reincarceration rates through the social support they provide to their local communities. Evangelical churches give great importance to their social work. They typically organize and promote initiatives designed to help their local communities with different social problems (e.g., material needs, addictions, crime). Thus, our findings could be explained by the availability of a support network that helps former inmates to cope with some of their most urgent needs.

Finally, Evangelical churches could reduce reincarceration rates by making it more difficult to successfully commit a crime. If their presence in the neighborhood strengthens community links and increases social monitoring, then committing or hiding crimes could become more challenging (Gonzalez and Komisarow, 2020). In addition, they could make it more difficult to find criminal partners in the neighborhood.

Next, we conduct different analyses to study the relevance of these mechanisms and provide evidence that the social support mechanism is an important driver of our findings. Evangelical churches also seem to reduce the number of potential criminal partners in the neighborhood, making it more difficult to commit crimes.

## 6.1 Religious Activities and Recidivism

To study the relevance of proselytism and other religious activities of Evangelical churches, we first study whether the opening of an Evangelical church affects the religious composition of its surroundings.

To study religious conversions, we use individual-level data from the 2002 and 2012 population censuses. In line with the main analysis conducted in the paper, we compare changes in religion shares in the area surrounding a new church with religion shares in areas that are slightly 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. Census blocks typically coincide with an actual block. Thus, for the analyses using census data, we define treated areas as census blocks with centroids within 100 meters from the church, and control areas as census blocks with centroids at between 250 and 350 meters from the church.

The results in Table V show that before the opening of an Evangelical church, individuals in treatment and control areas are very similar in terms of their religion. We find no significant differences in the pre-treatment probabilities of being Evangelical, Catholic, Atheist, or a member of a different religion. The opening of an Evangelical church slightly increases the number of Evangelicals in treatment areas (approximately by one percentage point). This increase comes mostly from a decrease in the number of Catholics. While the effect is statistically significant, the modest magnitude of the coefficient suggests that the opening of Evangelical churches did not result in massive conversions in treatment areas relative to control areas.

Another piece of evidence that suggests that religious conversions are not the main driver of our findings is that the drop we observe in recidivism is driven by individuals who before entering prison already identified as Evangelicals. A nice feature of prison registers in Chile is that they contain information on the religion of inmates when they enter prison. We use this information

to perform a heterogeneity analysis by the religion of inmates when entering prison. As discussed in Section 3, our estimation sample only contains individuals who enter prison before a church opening. Therefore, the religion of individuals that we observe is a predetermined characteristic. Column (1) in Table VI presents the results of this exercise. While for Evangelicals we find a drop of 17.3 percentage points in 12-month reincarceration rates, for individuals of other or no religion we find a non-significant drop of 6.7 percentage points. Thus, the drop we find in recidivism is mostly driven by individuals who already were Evangelicals when the church opened and not by individuals converted by the new church.

Although religious conversions do not seem to play an important role in explaining our findings, we cannot completely rule out that the religious work of the new churches impacts recidivism. Having an Evangelical church promoting values and social norms against crime could affect the decision to participate in criminal activities, even among individuals who already were Evangelicals. In Section 7, however, we show that some types of non-religious organizations generate effects similar in size to the ones we find for Evangelical churches. This shows that local organizations do not need to engage in religious activities to reduce recidivism.

Finding stronger effects among offenders who already were Evangelicals when the church opened is also consistent with them being more likely to integrate and receive social support from the members of the new church. We study the relevance of the social support offered by Evangelical churches in the next subsection.

## **6.2 Social Support and Recidivism**

Evangelical communities place the support to individuals at risk at the center of their social action (Fediakova, 2004; Mariz, 1994). As a consequence, they typically help their communities through initiatives that go well beyond their religious work. According to the survey evidence we collected, Evangelical churches organize soup kitchens and other charitable activities, help individuals to overcome alcohol and drug abuse problems, and some of them even offer rehabilitation programs for individuals with a criminal history. This social support could be particularly relevant for individuals recently released from prison, who typically do not have many non-criminal support networks available.

We first explore heterogeneous effects of church openings depending on the type of support that these churches offer to the community. The survey we applied allowed us to collect information on both the social activities organized by each Evangelical church and the number of neighbors benefiting from them in a normal year (see Table I for more details). Using this information, we created an index of the relevance of each activity dividing the number of beneficiaries by the number of Evangelicals living within a 100 meters radius of the church according to the 2002 Census (i.e., before the opening of the churches in our estimation sample).<sup>20</sup>

To study the relevance of the different support activities, we use our survey data and estimate an augmented version of specification 1 in which we include a triple interaction between a variable indicating whether an inmate lived within 100 meters from the church before entering prison (i.e., Inner ring), a variable indicating whether the church had opened before the inmate was released from prison (i.e., Post), and the activity relevance index described in the previous paragraph (i.e., ARI). The specification includes as well two additional interactions: *Inner ring*  $\times$  *ARI* and *Post*  $\times$  *ARI*. We then run five independent regressions to study whether the relevance of alcohol and drug abuse rehabilitation, criminal rehabilitation, employability, and earnings potential, charity—i.e., soup kitchens and other material support—, and family support—i.e., tutoring and family inter-mediation—activities make a difference in terms of the impact that church openings have on recidivism.<sup>21</sup>

The results of these exercises are presented in Table VII. The first column replicates our baseline results focusing on the subset of churches included in the survey. Although not statistically significant, the point estimate is remarkably similar to the one we obtain when using the whole sample (i.e., -0.110 vs -0.111). The rest of the columns study heterogeneity depending on the importance of the different support activities organized by the churches. The last row of the table contains the mean of the Activity Relevance Index in the estimation sample. Churches in which alcohol and drug rehabilitation programs are more important have larger effects on 12-month reincarceration rates. Indeed, communities in which these programs are not available do not seem to affect recidivism at all. With the exception of family support, the other support activities that we study also seem

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<sup>20</sup>Note that since most support activities are open to families who are not part of the church, the index we created can take values above one.

<sup>21</sup>We do not have enough statistical power to run a horse-race model including all the interactions at once.

to increase the effect of church openings on recidivism, but they explain a smaller fraction of the effect and are never statistically significant.

These results suggest that the support offered by Evangelical churches, and in particular, the support related to alcohol and drug abuse rehabilitation is an important driver of our effects.

In line with the previous results, we also find that following the opening of an Evangelical church there is an increase in employment among young men. The effect is particularly relevant (2.6 percentage points) for Evangelical men under 30 (see columns (5) and (6) in Table V). To study changes in employment, we follow the same approach that we use in Section 6.1 to study changes in the religious composition of the neighborhood. The social support provided by Evangelical churches could improve employability by directly connecting individuals with job opportunities, or by giving them tools to cope with other problems affecting them. In Online Appendix D.2, we study whether the support activities offered by Evangelical churches impact employment among young men and young Evangelical men. We replicate the heterogeneity analyses discussed earlier in this section and find that many of these support activities are associated with an increase in employment among young men and among young Evangelical men.

Also consistent with the hypothesis that social support is important to reduce recidivism, we find that the effect of church openings is stronger in areas that have fewer public services around them, and in which former inmates likely have less access to government support.

To investigate this, we rely on detailed geographic data that allow us to compute the distance between the new churches and municipal offices, nurseries and schools, health centers, and police stations. Using this information, we study how the effect of church openings varies depending on the distance between the main office of the municipality and the church, and depending on the number of educational and health centers around the church.

The results of these analyses are reported in Table VI. We find that the effects are indeed stronger in areas where the presence of the State is weaker. The effect of an Evangelical church opening on 12-month reincarceration rates is stronger the larger the distance between the church and the main office of the municipality. Indeed, the effect completely vanishes when the church is too close to the municipal office (i.e., in the bottom third of the distribution of the distance between the

main office of the municipality and the church). The effect also seems to decrease with the number of schools and health centers in the neighborhood. The more education or health centers around a church, the lower its effect on recidivism. These results are consistent with the hypothesis that Evangelical churches substitute the state in the provision of some public services.<sup>22</sup>

These results, however, are also consistent with the effect of Evangelical churches being more relevant in areas with less monitoring by public agents. To study this possibility in more detail, we implement an exercise similar to the ones described in the previous paragraph, but looking at heterogeneity by distance to the closest police station. We find that the effects of church openings on 12-month reincarceration decline with proximity to a police station, completely disappearing when the church is too close to a police station (i.e., churches in the bottom third of the distribution of distance to a police station).

If the heterogeneous effects discussed above are driven by police deterring potential criminals living nearby police stations from engaging in illegal activities, we would expect the base levels of recidivism to vary with distance to police stations. Specifically, we would expect very low levels of recidivism around churches close to police stations. Nevertheless, the average levels of recidivism in the outer ring—i.e., the area not affected by the new church—do not seem to depend on the distance from the church to police stations. Indeed, 12-month reincarceration rates are very similar in the bottom (0.60), mid (0.59), and top (0.61) third of the distribution of distance to police stations. This suggests that differences in monitoring by public agents are not driving the heterogeneous effects we document in this section.

### 6.3 Difficulty of Committing Crimes and Recidivism

Finally, Evangelical churches could reduce recidivism by making it more difficult to succeed in committing and hiding a crime.

We first study whether the opening of an Evangelical church increases social monitoring in the

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<sup>22</sup>Previous studies characterized some religious organizations as institutions or *clubs* that provide public goods. The provision of public goods helps these religious organizations to pursue their goals more effectively (Berman and Laitin, 2008; Makowsky, 2012) and expand (Costa et al., 2018), particularly in the context of economic shocks or where there are no publicly provided goods. Our results are consistent with this literature: We show suggestive evidence that the church effects on recidivism are larger for those churches that provide social services in areas that have less access to public services. Another related study is Gruber and Hungerman (2008), which shows how secular competition can decrease religious participation but does not reduce contribution to other charitable activities.

neighborhood. To study this, we exploit geocoded data on crimes reported to the police and study whether the opening of an Evangelical church affects the number of crimes being reported.

We normalize the total number of crimes reported to the police dividing them by the area of each ring, and we then estimate our main specification with the outcome defined at the ring level. The results of this analysis, reported in Panel (a) of Table VIII, show that the opening of an Evangelical church does not significantly change the number of crimes being reported. The lack of an effect on this margin suggests that Evangelical churches do not increase community monitoring of illegal activities. These results, however, should be interpreted with caution. The lack of an effect on reported crime could also reflect an increase in the probability of reporting a crime combined with a reduction in the actual number of crimes. It is important to remark that this result is unlikely to reflect changes in crime participation among individuals living within the ring. As discussed in Kirchmaier et al. (2021) and Ackerman and Rossmo (2015), criminals very rarely commit crimes within 100 meters of their residence.

An additional way in which Evangelical churches could make it more difficult to commit crimes is by reducing the number of potential criminal partners in the neighborhood. Recent work shows that the availability of potential criminal partners in the neighborhood impact recidivism (Kirk, 2009; Billings and Schnepel, 2020). To test this hypothesis, we study whether the opening of a new Evangelical church reduces the number of people going to prison for the first time.<sup>23</sup> A drop in the number of neighbors engaging in crime would imply that there are fewer criminals with whom recently released inmates could associate.

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.<sup>24</sup>

The results of this exercise are reported in Panel B of Table VIII. As in the case of reincarceration,

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<sup>23</sup>We look at the first time that an individual enters prison between 2006 and 2015. Although some individuals might have entered prison for the first time before 2006, our focus on young inmates reduces these types of concerns.

<sup>24</sup>In Online Appendix C.5, we show that the Census Blocks in treated and control rings have similar population densities and that they are also similar in a rich vector of characteristics.

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 only for property and violent crime. Online Appendix C.1 studies the dynamics of these results and confirms the existence of parallel trends before the opening of the church.

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 Online Appendix C.5), it is not possible to rule out that at least part of the effect that we find in this first imprisonment analysis is driven by criminals moving away from new churches. In contrast to our results on reincarceration, the drop that we observe in the number of people going to prison for the first time does not necessarily translate into a drop in the number of people going to prison in general. Independently on what is driving the drop in the number of people entering prison for the first time—i.e., fewer people committing crimes or migration of criminals to other areas—this result suggests that Evangelical churches reduce the number of potential criminal partners that recently released inmates encounter in their neighborhood once they leave prison.

## 7 Effect of non-Religious Neighborhood Institutions on Reincarceration

This section studies how the opening of different types of NGOs affects 12-month reincarceration rates among recently released inmates who served sentences related to property crime. We rely once more on our baseline specification, but instead of defining the treatment as church openings, we define it as NGO openings.

Information on the exact address and opening date of these organizations is gathered from the Chilean Registry of non-governmental organizations. We classify these organizations into five categories depending on their main activity: (1) employability and earnings potential, (2) alcohol and drug abuse rehabilitation, (3) sports, (4) neighborhood and housing, and (5) others.<sup>25</sup>

As shown in Table IX, the only NGOs that make a statistically significant difference in 12-month

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<sup>25</sup>The 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.

reincarceration rates are those helping individuals to improve their employability and earnings potential. They reduce the 12-month reincarceration probability among property crime offenders by 11 percentage points (19%). Alcohol and drug abuse rehabilitation NGOs also seem to reduce recidivism. Indeed, we find that they reduce 12-month reincarceration rates by roughly 10 percentage points (17%). However, since there are fewer of them, these estimates are less precise and we cannot rule out them being equal to zero. The estimates we obtain for the effects of other types of NGOs—i.e., sports, neighborhood and housing, and others—are small and not statistically significant.

Table X shows that the results on NGOs helping their beneficiaries to improve their employability and earnings potential are robust to controlling for a rich vector of individual and neighborhood characteristics and to using alternative specifications. The set of controls included in each specification varies across columns. The coefficient of interest, however, does not change much when moving from column (1) to column (6). If anything, the effect becomes slightly larger when we include our full set of controls. The specification in Panel B is similar to the specification in Panel A. The only difference is that it controls as well for  $\text{NGO} \times \text{Release-year}$  fixed effects. Even after including these additional fixed effects the estimates remain large and statistically significant. Finally, as in the case of churches, we estimate an alternative specification in which we use a different definition of treated and control units. In this specification, we only look at individuals living within 100 meters from an NGO and exploit variation generated by the time in which the NGO opens. In this case, control units correspond to individuals who live within 100 meters of an NGO that has not yet opened (i.e., individuals living close to NGOs opening between 2015 and 2018). Since this approach exploits the staggered adoption of the treatment, we follow the two-stage difference-in-differences approach proposed by Gardner (2021) to overcome the identification challenges that arise in this context (see Goodman-Bacon, 2021, for details). Although we lose some precision, the size of the effect is very similar to the one we obtain with our main specification.

To gain a better understanding of the characteristics and type of activities offered by these organizations, we surveyed a random sample of them. As in the case of the Evangelical churches, the neighborhoods in which the NGOs in the survey are located are very similar to the neighborhoods in which the rest of the NGOs in our estimation sample are located (see Online Appendix E for

further details).

Table E.I summarizes the results of the survey. The NGOs in our sample are relatively small. On average, they have 15 employees and volunteers working with them and they help 20 beneficiaries per month. As in the case of Evangelical churches, they work very locally. Their beneficiaries typically come from the same neighborhood (48%) or from the same municipality (17%) in which the NGO is located. Only one NGO in the survey reports having beneficiaries from multiple municipalities of the Metropolitan Region of Santiago. Almost 80% of the NGOs are located in low or mid-low SES areas and report unemployment as an important or very important problem for their local communities. Low levels of education (62%), and alcohol (55%) and drug abuse (59%) are also acknowledged as important or very important problems. Domestic violence (32%), crime (36%), and the presence of gangs (39%) still seem to be important issues in these communities, but to a lesser extent than in the communities around Evangelical churches.

Given the multiple problems affecting the communities in which they work, it is not surprising that despite having a focus on employability and earnings, these NGOs also offer support in other areas. According to the survey, 58% of them provide some type of material support, and 20% of them organize soup kitchens. 31% also offer tutoring for kids, and 10% of them have alcohol and drug abuse rehabilitation programs in place. In terms of their activities to improve labor market prospects, 58% of them offer some type of vocational training opportunities, and 31% of them offer opportunities to sell different types of products (e.g., handicrafts, vegetables, second-hand clothes). Thus, more than connecting individuals with formal job opportunities, these NGOs seem to provide their beneficiaries with a bundle of treatments that combines material support and opportunities to improve their employability and earnings potential through training and trading opportunities.

The results in this section show that non-religious institutions providing social support to their local communities improve rehabilitation prospects and reduce recidivism among inmates recently released from prison. This result is important from a policy perspective. It shows that local organizations can reduce recidivism even in the absence of religious activities.

## 8 Conclusion

A large share of individuals sentenced to prison re-offend and are reincarcerated a few years after being released. This phenomenon is costly for society and therefore has generated great interest in understanding how to effectively encourage desistance from crime.

This paper provides causal evidence that the local institutions of the neighborhood to which individuals return after prison matter. The opening of an Evangelical church in the neighborhoods to which individuals return after prison reduces 12-month reincarceration rates among property crime offenders by more than 11 percentage points (18%).

We discuss three classes of mechanisms that could drive the effect of Evangelical churches on recidivism: (1) promotion of Evangelism and its values; (2) provision of social support; and (3) increased difficulty to commit crimes.

Religious conversions do not seem to be a key driver of our findings. Evangelical churches seem to impact recidivism by offering recently released inmates a support network that helps them to cope with their more immediate needs (i.e., charity activities) and to overcome alcohol and drug abuse problems. In addition, they also seem to affect recidivism by reducing the number of new criminals and potential criminal partners in the neighborhood.

The paper also shows that non-religious institutions working to improve employability and earnings potential, as well as those offering alcohol and drug abuse rehabilitation reduce recidivism. These organizations generate a drop in 12-month reincarceration rates similar in size to the one we find for Evangelical churches. From a policy perspective, these results indicate that beyond religious activities, the social support provided by local institutions makes an important difference in the rehabilitation prospects of inmates once they leave prison. This suggests that connecting recently released inmates with local organizations and support networks in their neighborhoods could be an effective way to encourage desistance from crime.

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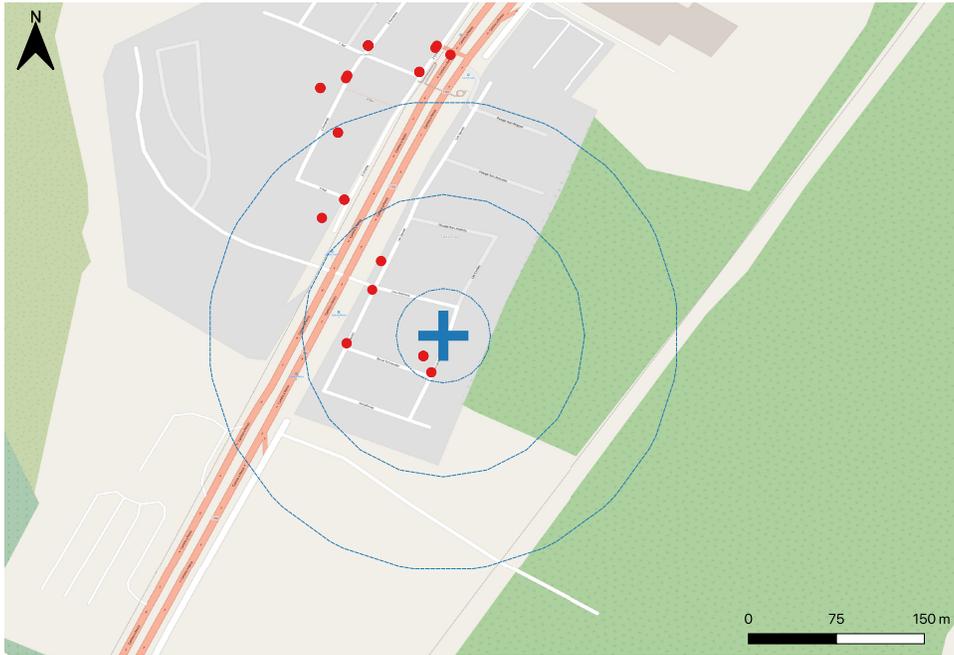
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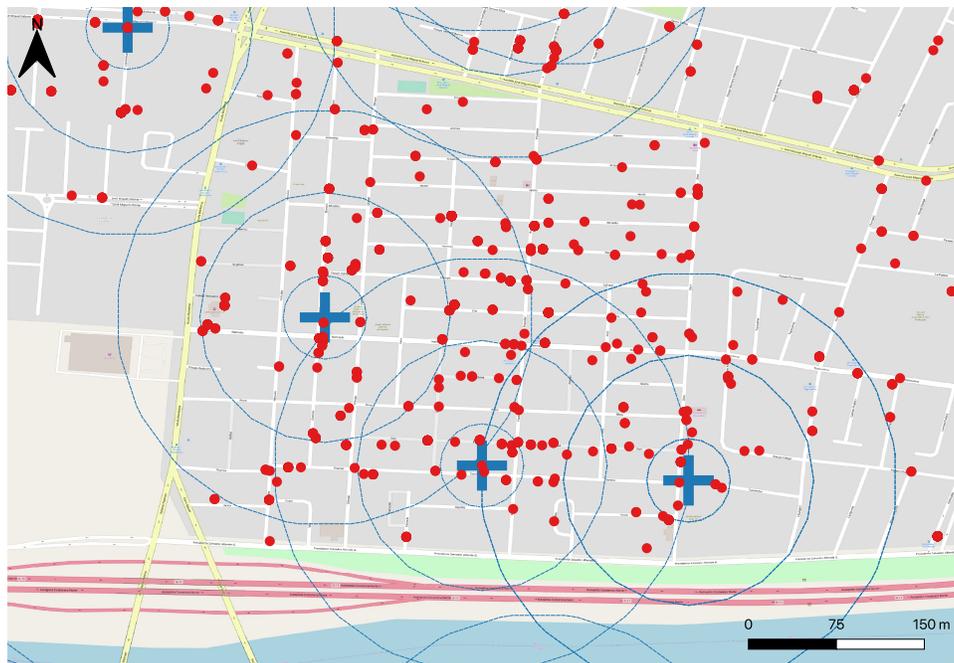
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Figure I: Treatment and Control Groups Definition



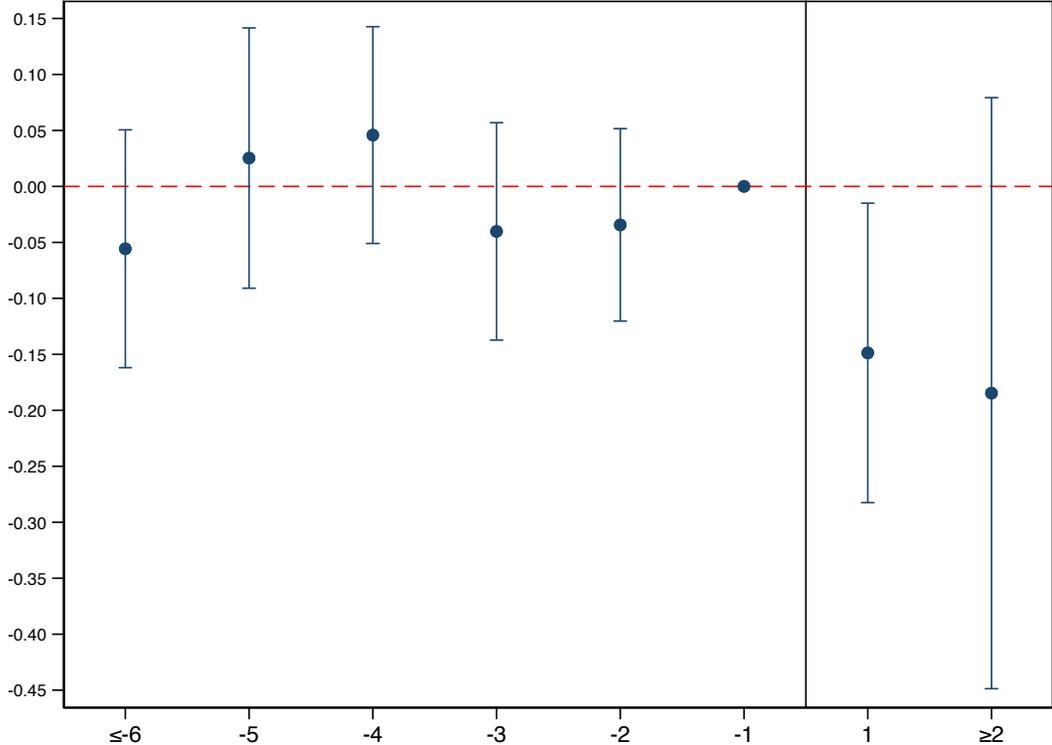
(a) Low Density Area



(b) High Density Area

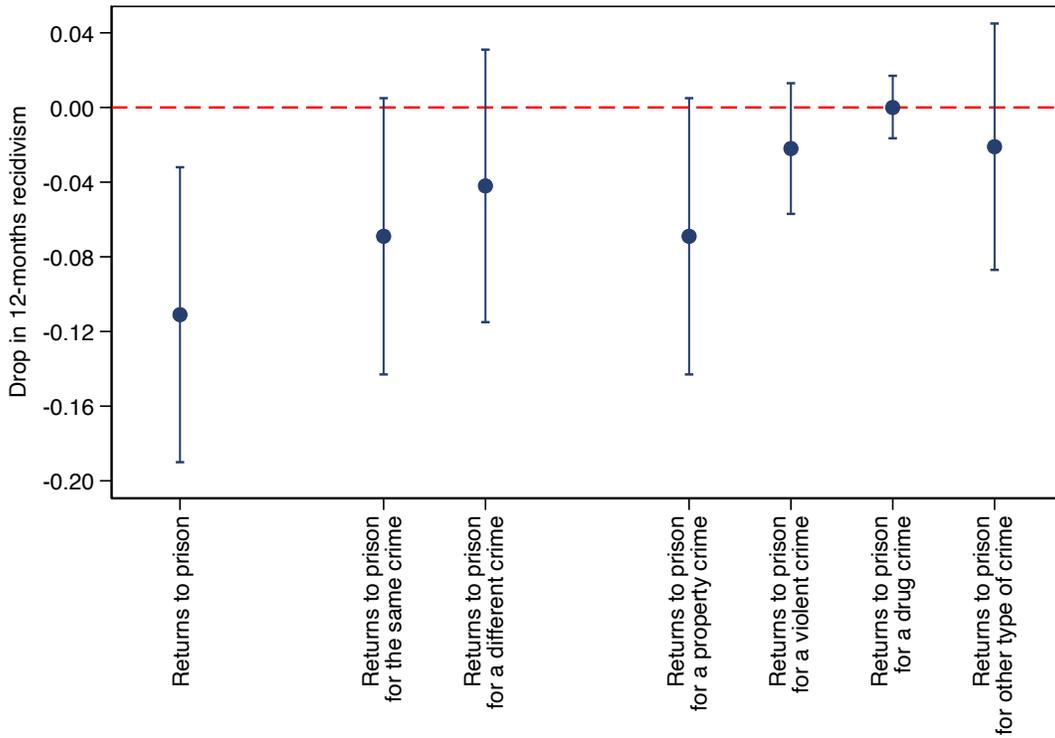
This figure illustrates the definition of treated and control groups used in the paper. The treatment group consists of individuals living within the smallest radius. The control group consists of individuals living on the outer ring. The intermediate ring is a buffer area. Panel (a) illustrates a low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

Figure II: Effect of Evangelical Church Openings on 12-month Reincarceration for Individuals Originally Sentenced for Property Crime



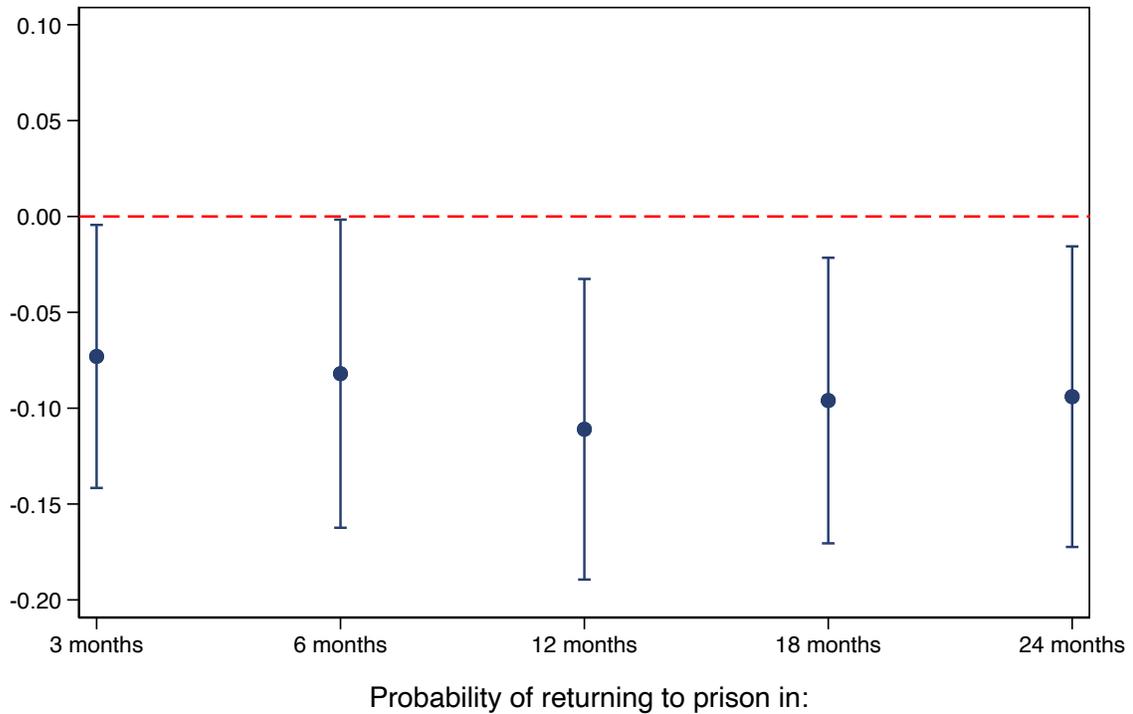
This figure illustrates how the estimated effect of Evangelical churches' openings on 12-month reincarceration of individuals originally sentenced for committing property crime evolves over time. The treated group includes individuals living at 100 meters or less from the church location, while the control group individuals living at between 250 and 350 meters from the church. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

Figure III: Decomposition of Evangelical Church Openings Effect on Reincarceration by Reincarceration Reason for Individuals Originally Sentenced for Property Crime



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 neighborhood level (i.e., inner and outer ring).

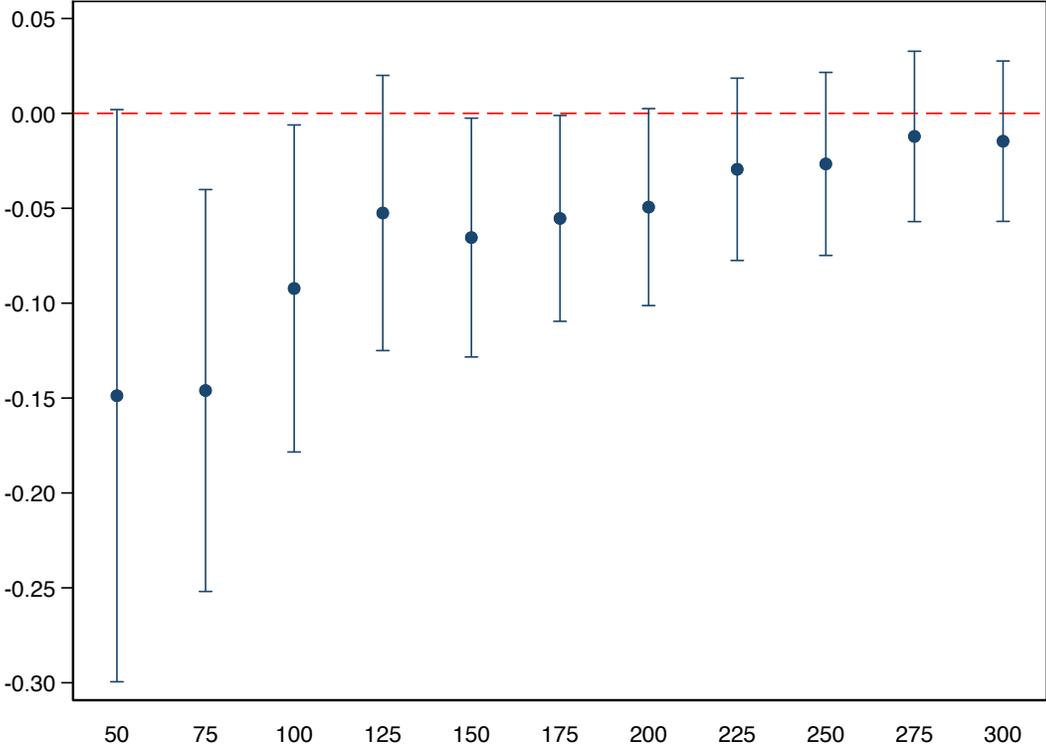
Figure IV: Effect of Evangelical Church Openings on Reincarceration at Different Months since the Release Date for Individuals Originally Sentenced for Property Crime



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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 neighborhood level (i.e., inner and outer ring).

Figure V: Effect of Evangelical Church Openings on 12-month Reincarceration by Inner Ring Radius for Individuals Originally Sentenced for Property Crime



This figure illustrates how the effect of Evangelical churches' openings on 12-month reincarceration for individuals originally sentenced for property crime changes depending on the radius in meters used to define the treated group. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

Table I: Characteristics of Churches and their Neighborhoods

<i>Panel A: Church members, religious leaders, and neighborhood SES</i>				
	(1)	(2)	(3)	(4)
	Between 1-10	Between 10-30	Between 30-50	More than 50
Congregation size at foundation	24.49	38.78	16.33	20.40
Current congregation size	6.12	20.40	24.49	48.98
	Almost everyone	More than half	Half	Less than half
Share of members from the neighborhood	44.90	20.41	14.29	20.41
	Members' contributions	Central church contributions	Public funds	Other sources
Funding of the temple	62.50	14.58	0.00	22.92
	Pentecostal	Presbyterian	Baptist	Other
Sh church denomination	57.14	4.08	4.08	34.69
	Low	Medium-Low	Medium-High	High
Neighborhood Socioeconomic status	42.42	50.00	7.58	0.00

<i>Panel B: Activities offered by Evangelical Churches and Number of Participants</i>					
	Sh churches offering the activity (%)	Mean	Number of participants/beneficiaries		
	(1)	(2)	P20	P50	P80
	(1)	(2)	(3)	(4)	(5)
Charitable activities	87.88	244.09	10.00	65.00	200.00
Family support activities	84.85	60.62	3.00	20.00	80.00
Rehabilitation for alcohol and drug abuse	62.12	29.24	0.00	4.00	35.00
Employability and earnings potential	46.97	12.11	0.00	0.00	20.00
Rehabilitation for people involved in criminal activities	39.39	9.71	0.00	0.00	6.00
Missionary outreach	72.73	40.56	0.00	15.00	40.00

*Notes:* Panel A characterizes the members and religious leaders of the churches in the survey sample, as well as the neighborhoods in which they are located. Panel B describes the activities offered by the Evangelical churches in the survey sample and the number of individuals who participate of them. In addition to the average number of participants, it presents the percentile 20, 50 and 80.

Table II: Summary Statistics

	All individuals entering prison	Individuals in a 100m radius from the church	Individuals between 250m and 350m from the church
	(1)	(2)	(3)
<b><i>A. Demographic characteristics</i></b>			
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><i>B. Education level</i></b>			
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
<b><i>C. Family characteristics:</i></b>			
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
<b><i>D. Religion:</i></b>			
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
<b><i>E. Criminal history and sentence characteristics:</i></b>			
Previous imprisonments	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
Church opened while in prison		0.115	0.086
Observations	216,836	7,343	33,825

*Notes:* Column (1) presents summary statistics for individuals entering prison and who are released over the time period that we study. Columns (2) and (3) present summary statistics for individuals entering prison before the opening of an Evangelical church around them and who are released over the time period that we study. While column (2) shows statistics for individuals living at most at 100 meters from the church, column (3) focuses on individuals living at between 250 and 350 meters from it. Each observation corresponds to an individual-imprisonment combination in column (1) and to an individual-imprisonment-church combination in columns (2) and (3).

Table III: Effect of Evangelical Church Openings on 12-month Reincarceration for Individuals Originally Sentenced for Different Types of Crime

	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 (0.040)	-0.007 (0.080)	0.010 (0.036)	-0.015 (0.043)
Inner ring = 1	0.027 (0.016)	-0.034 (0.035)	-0.002 (0.035)	-0.018 (0.015)
Church opened = 1	0.005 (0.021)	0.027 (0.044)	0.031 (0.022)	0.051 (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 parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table IV: Effect of Evangelical Church Openings on 12-month Reincarceration for Individuals Originally Sentenced for Property Crime

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Panel A - Main Specification</i>						
Inner ring = 1 × Church opened = 1	-0.111 (0.040)	-0.110 (0.040)	-0.110 (0.040)	-0.108 (0.040)	-0.109 (0.040)	-0.113 (0.041)
Observations	14269	13794	13794	13738	13689	13624
Outcome mean before church opening	0.61	0.61	0.61	0.61	0.61	0.61
<i>Panel B - Main Specification with Church × Release-year FE</i>						
Inner ring = 1 × Church opened = 1	-0.155 (0.064)	-0.187 (0.062)	-0.189 (0.062)	-0.191 (0.062)	-0.177 (0.063)	-0.185 (0.064)
Observations	12178	11691	11691	11631	11584	11,530
Outcome mean before church opening	0.62	0.63	0.63	0.63	0.63	0.61
<i>Panel C - Alternative diff-in-diff estimation method (Gardner, 2021)</i>						
Treated church = 1 × Church opened = 1	-0.110 (0.044)	-0.098 (0.054)	-0.103 (0.053)	-0.101 (0.053)	-0.109 (0.053)	-0.105 (0.053)
Observations	2,861	2,779	2,779	2,766	2,757	2,757
Outcome mean before church opening	0.63	0.63	0.63	0.63	0.63	0.63
Demographic characteristics	No	Yes	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes	Yes
Number of churches within 1km	No	No	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes	Yes
Month FE	No	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 consist 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 neighborhood fixed effects. The specification in Panel B includes the interaction between them. The results in Panel C were estimated using the two-stage 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 the 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 parentheses, standard errors clustered at the neighborhood level (i.e., the inner plus the outer ring).

Table V: Effect of Evangelical Church Openings 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 (0.003)	-0.006 (0.003)	-0.001 (0.002)	-0.002 (0.002)	0.011 (0.006)	0.026 (0.011)
Inner ring = 1	0.003 (0.002)	-0.004 (0.002)	-0.000 (0.001)	0.001 (0.001)	-0.006 (0.005)	-0.017 (0.009)
Church opened = 1	0.015 (0.001)	-0.027 (0.002)	0.038 (0.001)	-0.027 (0.001)	0.006 (0.003)	0.010 (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 labor 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 VI: Effect of Evangelical Church Openings on 12-month Reincarceration by Inmates Religion and by Proximity to Public Services for Individuals Originally Sentenced for Property Crime

	(1)	(2)	(3)	(4)	(5)
Inner ring = 1 × Church opened = 1	-0.067 (0.047)	-0.144 (0.069)	-0.262 (0.074)	-0.162 (0.068)	-0.142 (0.064)
Inner ring = 1 × Church opened = 1 × Evangelical = 1	-0.106 (0.076)				
Inner ring = 1 × Church opened = 1 × Dist. to Main Municipality = Mid 33%		0.004 (0.084)			
Inner ring = 1 × Church opened = 1 × Dist. to Main Municipality = Bottom 33%		0.098 (0.089)			
Inner ring = 1 × Church opened = 1 × Number of Educ. Centers in 500m			0.024 (0.009)		
Inner ring = 1 × Church opened = 1 × Number of Health Centers in 1000m				0.017 (0.017)	
Inner ring = 1 × Church opened = 1 × Dist. to Police Station = Mid 33%					0.004 (0.096)
Inner ring = 1 × Church opened = 1 × Dist. to Police Station = Bottom 33%					0.128 (0.086)
Observations	14270	14270	14270	14270	14270
Outcome mean before church opening	0.61	0.61	0.61	0.61	0.61
<i>Effects after adding interactions</i>					
Baseline Effect + Interaction 1	-0.173 (0.065)	-0.140 (0.058)	NA NA	NA NA	-0.137 (0.079)
Baseline Effect + Interaction 2		-0.046 (0.062)			-0.013 (0.064)

*Notes:* Column (1) studies heterogeneous effects by the religion of the inmate before entering prison. A 41.13% of the individuals in our sample were Evangelicals before entering prison. Column (2) studies heterogeneous effects depending on the distance between the church and the main office of the municipality. The average distance between churches and the main municipality office in the top 33% of the distribution is 3.75 km, in the mid 33% is 1.93 km, and in the bottom 33% is 0.88 km. Column (3) studies heterogeneity by the number of education centers within 500 meters from the church. On average, there are 6.24 education centers within 500 meters from the church. Column (4) studies heterogeneity by the number of health centers within 1000 meters from the church. On average, there are 3.11 health centers within 1000 meters from the churches in our sample. Column (5) studies heterogeneous effects depending on the distance between the church and the closest police station. The average distance between churches and the closest police station in the top 33% of the distribution is 1.94 km, in the mid 33% is 0.86 km, and in the bottom 33% is 0.39 km.

Table VII: Heterogeneous Effects of Evangelical Church Openings on 12-month Reincarceration Rates by Relevance of Activities Organized by the Churches in the Neighborhood for Individuals Originally Sentenced for Property Crime

	Baseline specification (1)	Drugs and alcohol abuse rehabilitation (2)	Criminal rehabilitation (3)	Employability and earnings potential (4)	Charity activities (5)	Family support (6)
Inner ring $\times$ Post	-0.111 (0.154)	-0.0167 (0.162)	-0.0845 (0.208)	-0.0831 (0.163)	-0.089 (0.174)	-0.177 (0.221)
Inner ring $\times$ Post $\times$ Activity Relevance Index		-1.726 (0.536)	-3.057 (4.833)	-0.133 (1.181)	-0.068 (0.061)	1.021 (1.163)
Observations	787	787	787	787	787	787
Activity Relevance Index Mean		0.192	0.048	0.053	1.624	0.487

*Notes:* This table presents the results of specifications exploring heterogeneous effects of church openings on 12-month reincarceration rates depending on the relevance of the different types of activities organized by the churches in their neighborhoods. All estimates come from an augmented version of specification (1) in which we add an interaction between a dummy variable that indicates whether a released inmate was living in a 100 meter radius of the church before entering prison (Inner ring), a dummy variable indicating whether the church had opened before the inmate is released from prison (Post), and an index measuring the relevance of each activity in the neighborhood (Activity Relevance Index). The specification also includes the interactions *Inner ring  $\times$  Activity Relevance Index* and *Post  $\times$  Activity Relevance Index*, year-at-release fixed effects, and neighborhood fixed effects. The relevance of an activity in the neighborhood is measured by the ratio between the number of people participating in each activity according to the survey and the number of Evangelicals living in a 100 meters radius around the church according to the 2002 Census (i.e., before the opening of the churches in our estimation sample). The heading of each column indicates the activity being studied in each case. Thus, column (1) reports the main specification using only the sample of churches surveyed; column (2) studies heterogeneity by the relevance of alcohol and drugs abuse rehabilitation programs; column (3) by the relevance of criminals rehabilitation activities; column (4) by the relevance of activities designed to help individuals to connect with labor market opportunities; column (5) by the relevance of charity activities in the neighborhood (i.e., community kitchens and other material support ); and column (6) by the relevance of family support activities (tutoring and inter-mediation for couples and for parents and children). In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table VIII: Effect of Evangelical Church Openings on Crime Reported at the Neighborhood and on First Incarceration

	Property crime (1)	Drug crime (2)	Violent crime (3)	Any crime (4)
<i>Panel A: Number of crimes reported per sq km in the ring</i>				
Inner ring = 1 × Church opened = 1	11.81 (11.50)	-0.73 (0.84)	0.98 (4.29)	54.51 (42.01)
Observations	17906	17906	17906	17906
Outcome mean	202.82	2.15	63.17	864.01
<i>Panel B: Number of individuals entering prison for the first time per sq km in the ring</i>				
Inner ring = 1 × Church opened = 1	-1.164 (0.342)	-0.505 (0.313)	-0.694 (0.396)	-0.827 (0.537)
Observations	32,180	32,180	32,180	32,180
Outcome mean	6.091	3.739	7.397	15.06

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

Table IX: Effect of NGO Openings on 12-month Reincarceration Rates for Individuals Originally Sentenced for Property Crime

	Employability and earnings potential (1)	Alcohol and drug abuse rehabilitation (2)	Sports (3)	Neighborhood and housing (4)	Other NGOs (5)
Inner ring = 1 × NGO opened = 1	-0.116 (0.055)	-0.101 (0.157)	0.008 (0.046)	0.008 (0.036)	0.021 (0.038)
Inner ring = 1	0.005 (0.027)	-0.015 (0.038)	0.010 (0.017)	0.007 (0.018)	0.015 (0.019)
NGO opened = 1	0.023 (0.029)	0.009 (0.007)	0.005 (0.024)	-0.033 (0.018)	0.000 (0.018)
Observations	7583	661	12468	14206	13922
Outcome mean	0.596	0.614	0.603	0.622	0.619

Notes: The table presents difference-in-differences estimates for the effect of the opening of different type of non-religious organizations on 12-month reincarceration rates among property crime offenders. Column (1) focuses on employability and earnings improving organizations, column (2) on alcohol and drug abuse rehabilitation organizations, column (3) on sports organizations, column (4) on neighborhood and housing organizations, and column (5) on other type of organizations. The treated group includes individuals living at 100 meters or less from an NGO. The control group includes individuals living at between 250 meters and 350 meters from an NGO. All specifications include year and neighborhood fixed effects (i.e., NGO fixed effect). In parentheses, standard errors clustered at the neighborhood level (i.e., inner plus outer ring).

Table X: Effect of Openings of NGOs working to Improve Individuals' Earnings Potential on 12-month Reincarceration for Individuals Originally Sentenced for Property Crime

	(1)	(2)	(3)	(4)	(5)	(6)
<b>Panel A - Main Specification</b>						
Inner ring = 1 × NGO opened = 1	-0.116 (0.055)	-0.140 (0.053)	-0.140 (0.053)	-0.140 (0.054)	-0.140 (0.054)	-0.140 (0.054)
Observations	7583	7291	7291	7256	7225	7225
Outcome mean	0.60	0.60	0.60	0.60	0.60	0.60
<b>Panel B - Main Specification with NGO × Release-year FE</b>						
Inner ring = 1 × NGO opened = 1	-0.155 (0.064)	-0.187 (0.062)	-0.189 (0.062)	-0.191 (0.062)	-0.177 (0.063)	-0.186 (0.075)
Observations	6090	5814	5814	5781	5761	5761
Outcome mean	0.62	0.62	0.62	0.62	0.62	0.62
<b>Panel C - Alternative Diff-in-Diff Estimation Method (Gardner, 2021)</b>						
Treated NGO = 1 × NGO opened = 1	-0.113 (0.085)	-0.100 (0.088)	-0.099 (0.088)	-0.086 (0.088)	-0.091 (0.088)	-0.120 (0.092)
Observations	1849	1794	1794	1792	1784	1776
Outcome mean	0.60	0.60	0.60	0.60	0.60	0.60
Demographic characteristics	No	Yes	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes	Yes
Number of NGOs within 1km	No	No	Yes	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes	Yes
Release month fixed effects	No	No	No	No	No	Yes

*Notes:* The table presents difference-in-differences estimates for the effect of openings of employability and earnings potential NGOs 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 an NGO, and the control group includes individuals living at between 250 meters and 350 meters from an NGO. In contrast, in Panel C both treatment and the control groups consist of individuals living within 100 meters from an NGO. In all cases we focus on individuals who enter prison before an NGO opens, and exploit variation on whether the NGO is already open once the individuals return to the neighborhood. All specifications include release-year and neighborhood fixed effects. The specification in Panel B includes the interaction between them. The results in Panel C were estimated using the two-stage 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 employability and earnings potential NGOs already operating when an individual is released from prison within 1km from his home. In parentheses, standard errors clustered at the neighborhood level (i.e., neighborhood form by the inner plus the outer ring).

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

## Online Appendix

Andrés Barrios-Fernández    Jorge García-Hombrados

June 23, 2023

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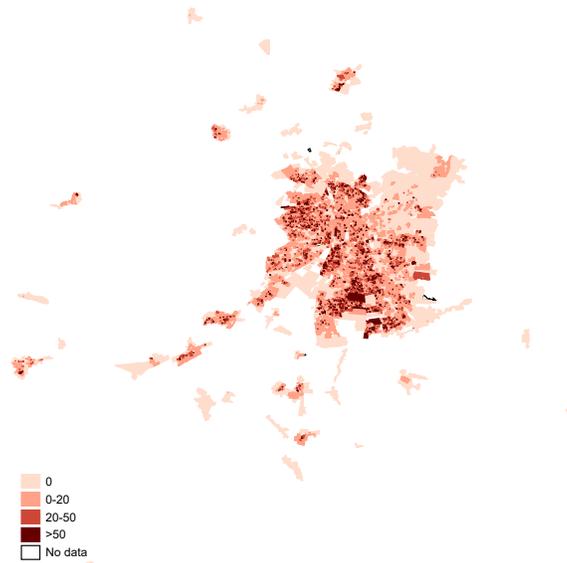
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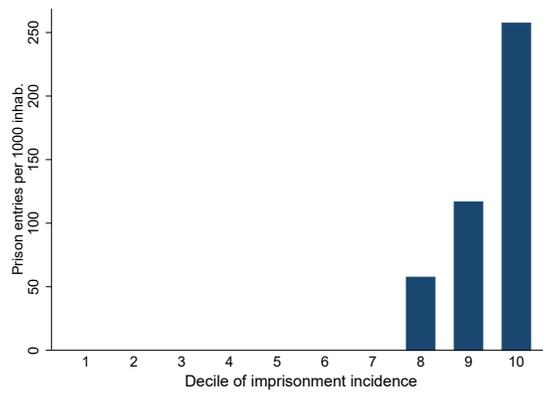
## A Crime Segregation in Santiago, Chile

Figure A.I examines the degree of spatial segregation in the home address of criminal offenders in Santiago, Chile's capital city. Combining Census data with administrative data from prison records, graph (a) shows a map with the number of individuals below 30 years old per 1,000 young individuals that ever went to prison between 2006 and 2015 in every census block. The concentration is higher in the south and in the west of the city, the most deprived areas. Graph (b) displays a histogram with the number of young individuals going to prison ordered by deciles. The graph shows that the latter number 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. Overall, both graphs reveal that criminal offenders are geographically concentrated in a limited number of neighborhoods.

Figure A.I: Crime segregation in Santiago, 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 a histogram with the distribution in deciles of the census blocks of the percentage of individuals imprisoned. The figures suggest a high spatial concentration of the residences of individuals imprisoned in Santiago.

## B Pastoral and Social Activities of Evangelical Churches in Chile

Following the approval of Law 19638 in 1999 which allowed Evangelical churches to register as religious entities and access the same benefits and tax exemptions that other churches already had, the number of Evangelical churches boomed in the 2000's. Figure B.I illustrates this phenomenon, which peaks in 2005 with the opening of 212 new churches.

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 individuals with alcohol and drug abuse problems, as well as of individuals involved in crime are important goals of their social action (Fediakova, 2012; Mansilla et al., 2017; Fediakova, 2014).

To further understand how the opening of an Evangelical church could reduce recidivism, we implemented a survey to characterize Evangelical communities and the support activities they organize in their neighborhoods. We selected a random sample of Evangelical churches from Santiago—the city that concentrates the largest number of church openings (56.7%) and inmates (69.5%) in our sample—and interviewed 66 church leaders (i.e., pastors) in August and September of 2022. We collected information about the history of the church, facilities, services provided, the congregation, and the priest, which helped us to characterize the treatment.<sup>26</sup>

Tables B.I and B.II summarize the main results of the survey. According to the survey, these churches started relatively small. Indeed, 63% of them had less than 30 members at the moment of their foundation. The congregations however grew over time with nearly half of them having more than 50 members at the time of the survey. Figure B.II shows photographs of some Evangelical churches in Santiago providing some examples that illustrate their size and external features. The area of influence of these churches is also relatively small. 80% of the surveyed pastors report that half or more of their members live in the same neighborhood in which the church is located. In terms of funding, most of it comes from individual contributions of the members of the church. In contrast to the leaders of other churches—e.g., Catholic priests—most of the pastors of Evangelical churches have not gone to college. 40% of them did not even complete high school, and 19% of them did not pursue further education after completing high school. In terms of the specific Evangelical denomination, the most popular is Pentecostal (57%), followed by Presbyterian (4%), and Baptist (4%). There are multiple other denominations that are less common in our sample—e.g., Adventist, Anglican, Apostolic, Methodist—that we group into one single category for exposition purposes.

The churches are typically located in disadvantaged areas.<sup>27</sup> According to the surveyed pastors, 92% of the neighborhoods in which they work are low or mid-low SES neighborhoods. Not surprisingly, social problems such as unemployment, low levels of education, alcohol and drug abuse, teenage

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<sup>26</sup>Some church leaders left a few questions unanswered. The tables that we present use all the answers we collected.

<sup>27</sup>Figure B.III displays the exact location of Evangelical churches in the cities of Santiago, Valparaíso and Concepción, showing that they predominantly locate in deprived areas of these cities.

pregnancy, domestic violence, and criminal activities are perceived as important or very important by the majority of them. Indeed, 61% of the priests surveyed reported that some members of the congregation have been imprisoned in the past.

In response to the social problems that affect their local communities, Evangelical churches typically organize support activities that go beyond their religious work. The churches in the survey are not an exception. 88% of the churches in the survey organize charitable activities to alleviate the material needs of the poor people in the community (e.g., soup kitchens, collects), 85% offer family support (e.g., tutoring, couples mediation, children-parents mediation), and 62% have rehabilitation programs for individuals with alcohol and drug abuse problems. In addition, 47% provide support to improve employability and earnings potential, and nearly 40% have rehabilitation programs for individuals who have participated in a crime. Finally, 73% of these churches organize missionary outreach activities. The two surveys discussed in this section—i.e., the PEW Research Center Survey and ours—indicate that Evangelical churches provide a bundle of services to their communities that go well beyond their religious activities.

For logistical and budgetary reasons and since every interview required at least one visit to the church, we target in our survey a random sample of churches in Santiago. Unfortunately, some of these churches were no longer active. Thus, one may question whether the churches surveyed might be comparable to the rest of the churches in the sample. We examine the comparability of the churches in the survey using census data in Table B.III. The results show that individuals living around churches surveyed and the rest of the churches in the analytical sample are very similar in terms of the socioeconomic and demographic characteristics examined including religion, school enrolment, child marriage, teenage pregnancy, labor force participation, and age. We only find modest statistically significant differences in the percentage of people that completed secondary education, which is 6 percentage points larger in neighborhoods of churches that were not surveyed.

Consistently with the evidence provided by our survey, 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).<sup>28</sup> In addition, they are more likely to report that their church provides support in finding jobs, and lobbies for pro-poor policies. According to this survey, Evangelicals are also more likely to oppose gay marriage and abortion, and to favor strong leaders in government. They have stronger views against alcohol consumption and have more conservative gender norms. According to this survey, the members of Evangelical churches also have a more active religious life and are more active in proselytism.

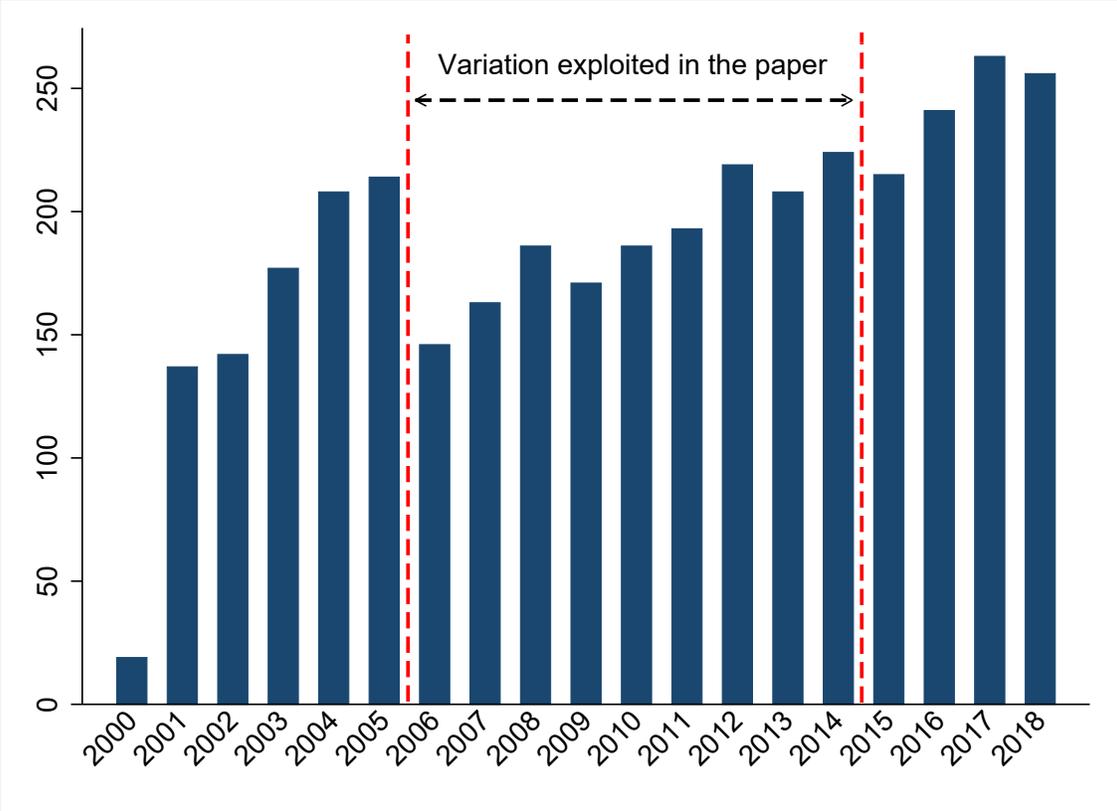
Finally, Table B.IV provides additional evidence from a survey applied every two years to a representative sample of high school students in Chile. This survey shows that the members of an

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<sup>28</sup>The data with the results of the survey can be download from [www.pewforum.org/dataset/religion-in-latin-america/](http://www.pewforum.org/dataset/religion-in-latin-america/).

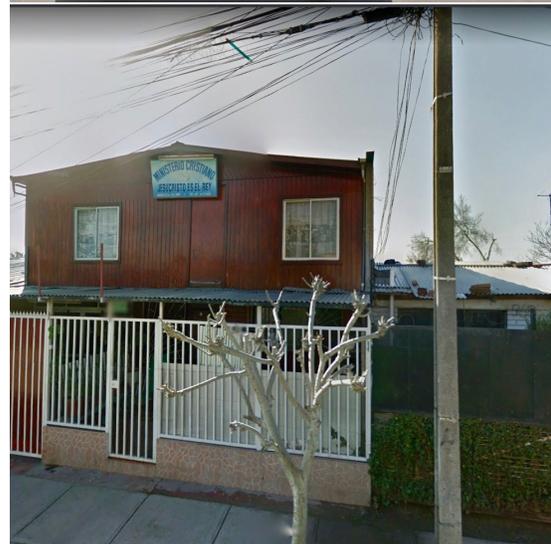
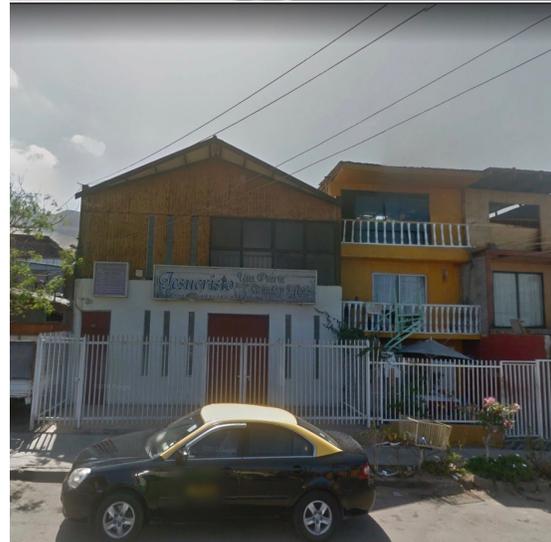
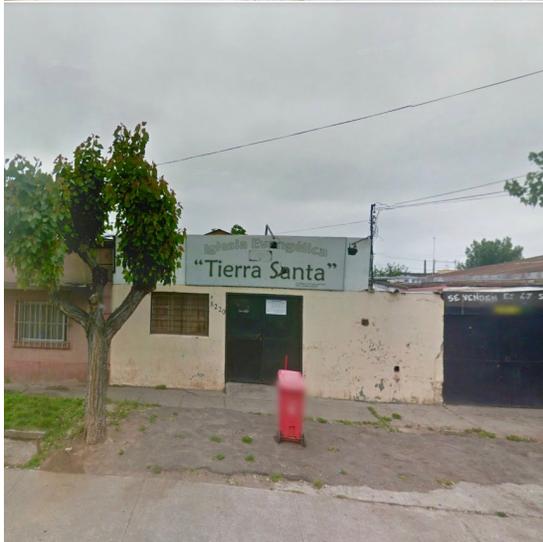
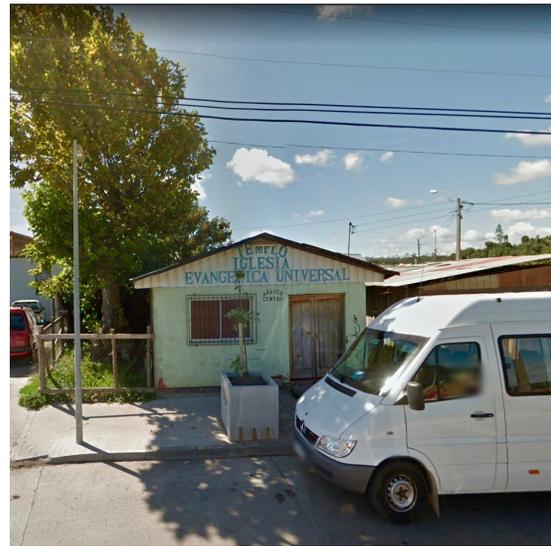
Evangelical church are less likely to consume alcohol, tobacco, and marijuana. In addition, Evangelical students also believe that their parents would be more upset in case of discovering that they consume any of these substances.

Figure B.I: Evangelical Church Opening in Chile (2000 - 2018)



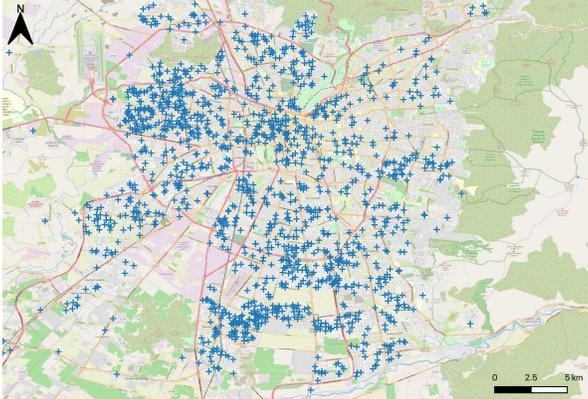
Note: This histogram provides information on the number of Evangelical churches opened yearly between 2000 and 2018. The main analysis conducted in the paper uses the churches opened between 2006 and 2014 because this is the overlapping period with information on the recidivism of individuals.

Figure B.II: Examples of Evangelical Churches in Chile



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

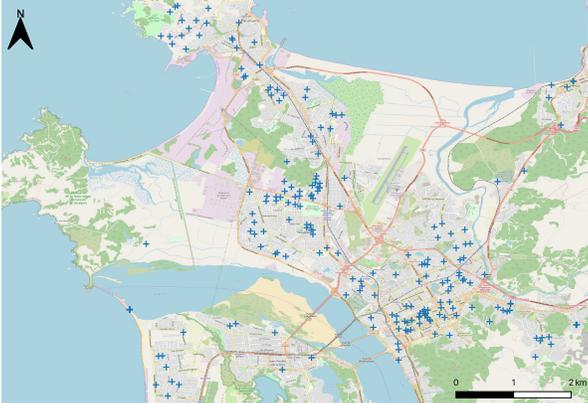
Figure B.III: Evangelical Churches Opened in Santiago, Valparaíso and Concepción (2000 - 2016)



(a) Santiago



(b) Valparaíso



(c) Concepción

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

Table B.I: Characteristics of Churches and their Neighborhoods

	(1)	(2)	(3)	(4)
<i>A. Church members and religious leaders</i>				
	Between 1-10	Between 10-30	Between 30-50	More than 50
Congregation size at foundation	24.49	38.78	16.33	20.40
Current congregation size	6.12	20.40	24.49	48.98
	Almost everyone	More than half	Half	Less than half
Share of members from the neighborhood	44.90	20.41	14.29	20.41
	Members' contributions	Central church contributions	Public funds	Other sources
Funding of the temple	62.50	14.58	0.00	22.92
	Less than high school	Completed high school	Completed technical education	Completed college education
Pastor's level of education	39.58	18.75	20.83	20.83
	Pentecostal	Presbyterian	Baptist	Other
Share of church denomination	57.14	4.08	4.08	34.69
<i>B. Neighborhood SES and Importance of Different Problems</i>				
	Low	Medium-Low	Medium-High	High
Neighborhood SES	42.42	50.00	7.58	0.00
	Very important	Important	Slightly important	Not important
Unemployment	42.42	39.39	15.15	3.03
Low level of education	50.00	37.88	9.09	3.03
Alcohol abuse	55.38	27.69	10.77	6.15
Drug abuse	72.31	21.54	3.08	3.08
Teen pregnancy	34.85	36.36	21.21	7.58
Domestic violence	41.54	40.00	16.92	1.54
Criminal activities	46.15	33.85	12.31	7.69
Gangs and drug trafficking	51.56	26.56	9.38	12.50

*Notes:* This table characterizes the members and religious leaders of the churches in the survey sample, as well as the neighborhoods in which they are located.

Table B.II: Activities offered by Evangelical Churches and Number of Participants

	Share of churches offering the activity (%)	Number of participants/beneficiaries			
	(1)	Mean	P20	P50	P80
		(2)	(3)	(4)	(5)
Charitable activities	87.88	244.09	10.00	65.00	200.00
Family support activities	84.85	60.62	3.00	20.00	80.00
Rehabilitation for alcohol and drug abuse	62.12	29.24	0.00	4.00	35.00
Employability and earnings potential	46.97	12.11	0.00	0.00	20.00
Rehabilitation for people involved in criminal activities	39.39	9.71	0.00	0.00	6.00
Missionary outreach	72.73	40.56	0.00	15.00	40.00

*Notes:* This table describes the activities offered by the Evangelical churches in the survey sample and the number of individuals who participate of them. In addition to the average number of participants, it presents the percentile 20, 50 and 80.

Table B.III: Summary Statistics

	Indiv. within 100m from churches surveyed	Indiv. within 100m from rest of churches in analysis	Difference
Evangelical	0.196	0.164	0.032
Working (18-30)	0.491	0.469	0.022
Working (all)	0.343	0.350	-0.007
Studying	0.737	0.761	-0.024
Adolescent mother	0.079	0.103	-0.024
Married as teenage	0.046	0.046	0.000
Secondary education	0.304	0.365	-0.061
Age	32.312	31.606	0.706
Observations	5158	205150	

*Notes:* The table present summary statistics for individuals in the 2002 Census data living within 100 meters from the churches. Column (1) shows mean values for socioeconomic characteristics of individuals living within 100 meters from the churches surveyed. Column (2) shows mean values for socioeconomic characteristics of individuals living within 100 meters from churches in the analytical sample that are not surveyed. Column (3) shows the magnitude of the differences between (1) and (2).

Table B.IV: Drug Consumption and Risky Behavior among Evangelicals

<b>Panel A - Individual Consumption of Drugs</b>						
	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 (0.003)	-0.052 (0.003)	-0.023 (0.002)	-0.085 (0.003)	-0.079 (0.003)	-0.012 (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						
<b>Panel B - Parental Control</b>						
	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 (0.003)	0.010 (0.002)	0.063 (0.003)	0.019 (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. nuclear family, only mother, only father, other structure). In parentheses, standard errors clustered at the school level.

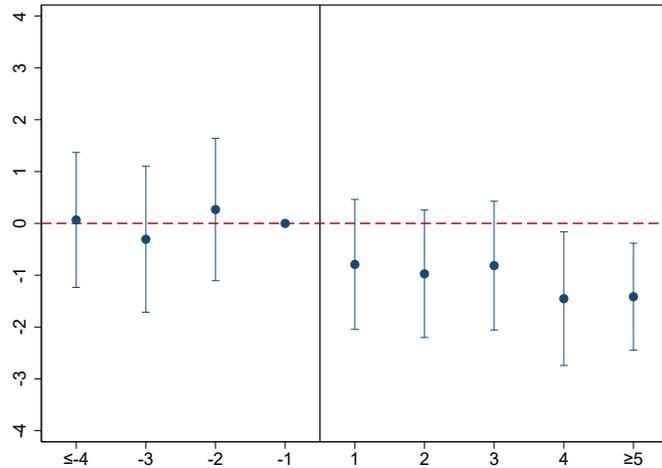
## C Robustness Checks

This appendix reports the results of the following tests: an event study analysis of the effects of the opening of Evangelical churches on first imprisonment, an event study analysis of the effects of the opening of Evangelical churches on recidivism of individuals originally sentenced for different types of crimes, the effects of the opening of Evangelical churches on recidivism using different radiuses to define the buffer, the effect of the churches on recidivism using different time windows to exclude from the analytical sample individuals released too close to the date of the church opening, and the effects of the Evangelical churches on neighborhood characteristics and community-based organizations.

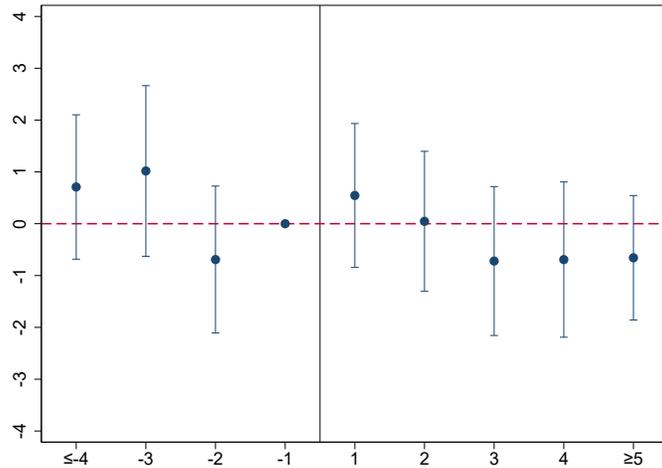
### C.1 First Sentences: Event Studies

Figure C.I 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 C.I: Effect of Evangelical Church Openings on First-Time Imprisonment



(a) Property crime: Imprisoned per km2



(b) Violent crime: Imprisoned per km2

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This figure illustrates how the estimated effect of Evangelical churches' openings on first time in prison for property and violent crime evolves over 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.

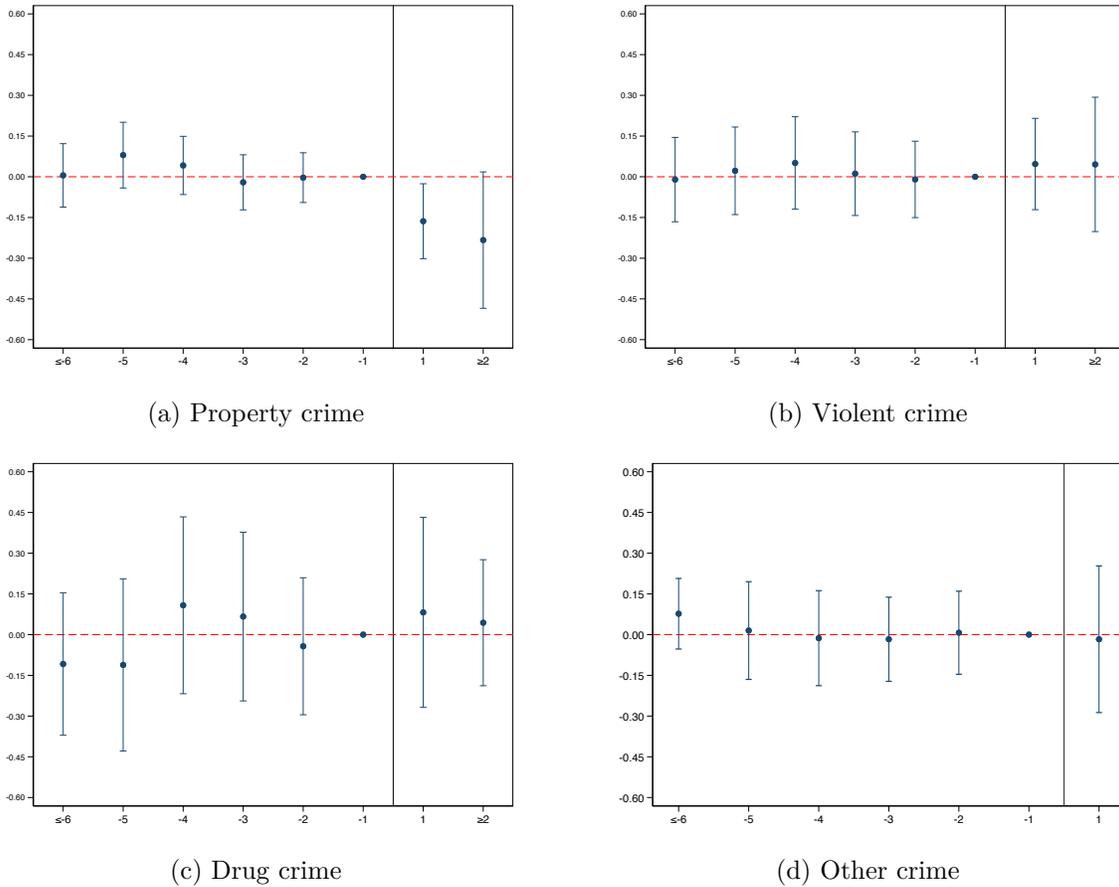
## C.2 Reincarceration: Event Studies

This section presents event studies of the effect of an Evangelical church opening on 12-month reincarceration (see Figure C.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 types 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 C.II: Effect of Evangelical Church Openings on 12-month Reincarceration by Type of Crime of Original Sentence

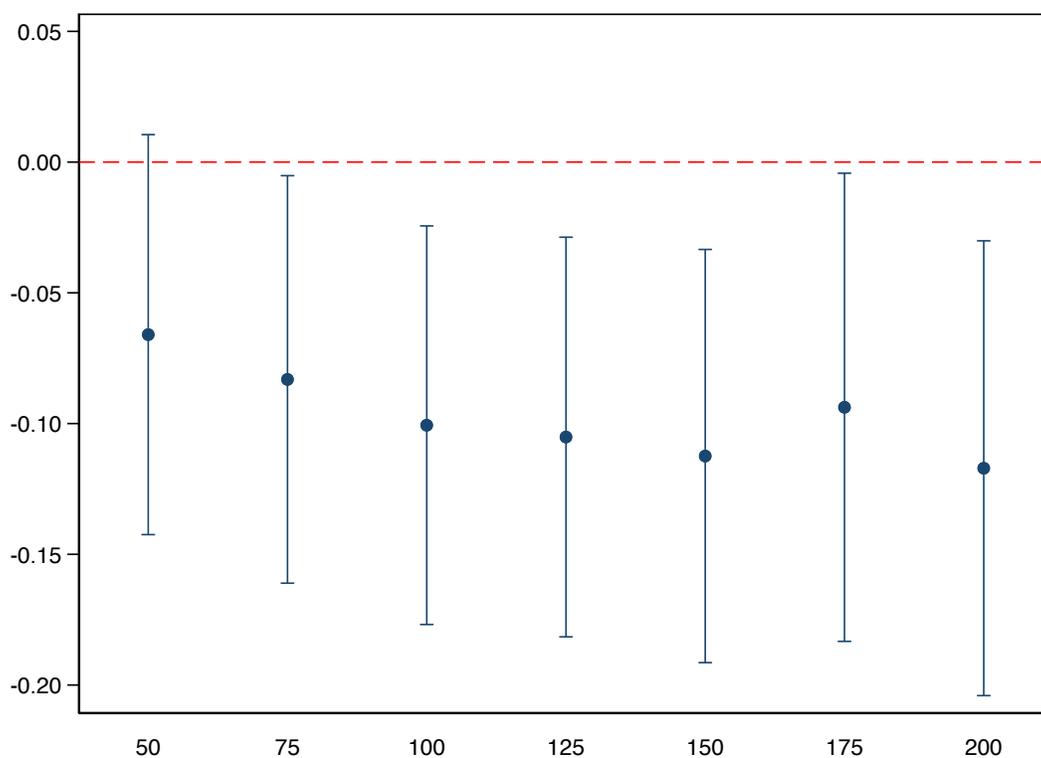


This figure illustrates how the estimated effect of Evangelical churches' openings on 12-month reincarceration of individuals originally sentenced for different types of crimes evolves over time. The treated group includes individuals living at 100 meters or less from the church location, while the control group includes individuals living at between 250 and 350 meters from the church. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

### C.3 Reincarceration and Different Buffers

This subsection illustrates how the estimated effect of church openings on reincarceration for individuals originally sentenced for property crime varies 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 C.III illustrates, the estimates stabilize after defining a buffer of 100 meters. This is consistent with the results discussed in Section 5 that show that the effect of an Evangelical church opening is very local.

Figure C.III: Effect of Evangelical Church Openings on 12-month Reincarceration by Buffer Radius for Individuals Originally Sentenced for Property Crime



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This figure illustrates how the estimated effect of Evangelical churches' openings on 12-month reincarceration of individuals originally sentenced for committing property crime changes depending on the distance used to separate treated and control groups. In all cases, the treated groups include individuals living at 100 meters or less from the church location. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

## C.4 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 the analytical sample individuals who returned to their neighborhood before the church was open, but that could still have been affected by the church. The results in Table C.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 C.I: Effect of Evangelical Church Openings on Reincarceration for Individuals Originally Sentenced for Property Crime - Excluding Inmates Released at Different Time Windows around Church Opening Date

	0 days (1)	30 days (2)	60 days (3)	90 days (4)	120 days (5)	150 days (6)	180 days (7)
Inner ring = 1 × Church opened = 1	-0.111 (0.040)	-0.100 (0.042)	-0.127 (0.046)	-0.117 (0.048)	-0.125 (0.051)	-0.126 (0.052)	-0.119 (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 parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

## C.5 Neighborhood Characteristics and Community-based Organizations in Treatment and Control Areas

This subsection 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 churches opened between 2002 and 2012 differ from individuals that live at between 250 and 350 meters from the church in terms of demographic and socioeconomic characteristics.

The results of this analysis are reported in columns 1-13 of Table C.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. However, the church seems to have slightly increased the share of Evangelicals and decreased the share of Catholics.

Second, in Table C.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 at between 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 neighborhood. The results of this analysis, conducted at the ring level following the identification strategy described in Section 6.3 for first imprisonment, are reported in Column (14) of Table C.II. They show that the presence of community-based organizations was not different in the inner and outer rings neither before nor after the opening of the church.

Table C.II: Evangelical Church Openings and Neighborhoods' Demographic and Socioeconomic Characteristics

<i>Religious and Labor Characteristics</i>							
	Evangelical	Catholic	Atheist	Other Religion	Working (18-30)	Working All	Neither work/study (15-24)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Inner circle = 1 × Church opened = 1	0.010 (0.003)	-0.006 (0.003)	-0.001 (0.002)	-0.002 (0.002)	0.005 (0.004)	-0.000 (0.002)	0.005 (0.004)
Inner circle = 1	0.003 (0.002)	-0.004 (0.002)	0.000 (0.001)	0.001 (0.001)	-0.002 (0.003)	-0.000 (0.001)	0.001 (0.004)
Observations	4,062,418	4,062,418	4,062,418	4,062,418	911,949	5,292,533	1,147,534
Outcome mean	0.176	0.643	0.120	0.060	0.531	0.387	0.192
<i>Demographic Characteristics</i>							
	Log Pob per $km^2$	Studying	Adolescent Mother	Married as a Teenager	Age	Female	Community-based Organizations per $km^2$
	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Inner circle = 1 × Church opened = 1	0.031 (0.021)	-0.002 (0.006)	-0.004 (0.004)	0.002 (0.002)	0.041 (0.123)	0.001 (0.002)	-1.265 (0.994)
Inner circle = 1	-0.003 (0.017)	-0.007 (0.005)	0.002 (0.003)	-0.000 (0.002)	0.094 (0.086)	-0.002 (0.002)	1.054 (0.948)
Observations	43,007	350,518	174,113	350,518	5,292,533	5,292,533	85,056
Outcome mean	9.849	0.799	0.096	0.042	33.080	0.516	2.457

*Notes:* 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 14, the table presents difference-in-differences estimates at the ring level following the identification strategy presented in Section 6.3 for the effect of the opening of an evangelical church on the presence of community-based organizations in the neighborhood. In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table C.III: Differences in Distance to Public Services between Individuals Living in Treatment and Control Areas

	Distance to (in km)					
	Health center (1)	Hospital (2)	School (3)	Nursery (4)	Police station (5)	Municipality (6)
Inner circle = 1	-0.008 (0.005)	0.002 (0.005)	-0.004 (0.005)	-0.001 (0.005)	-0.001 (0.005)	0.001 (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 at between 250 and 350 meters from the church). All specifications include neighborhood fixed effects. In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

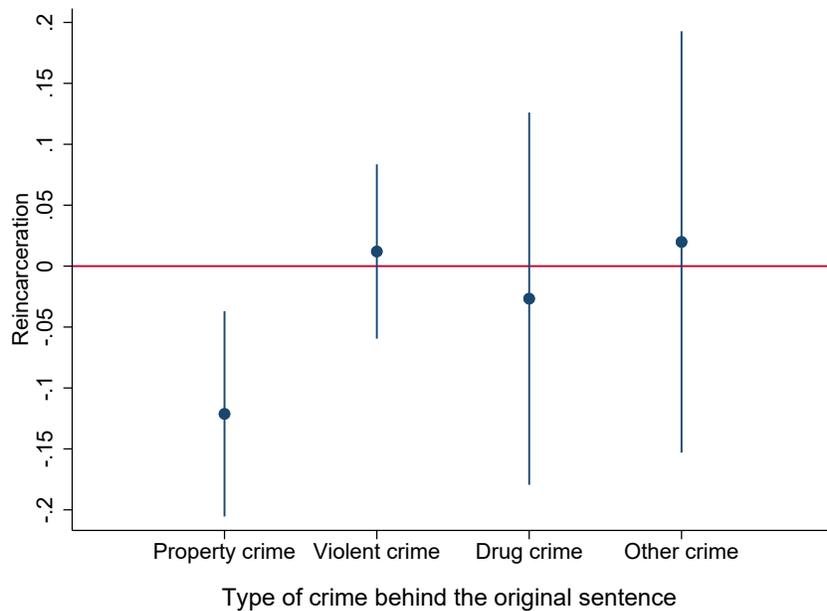
## D Additional Results

This appendix reports the results of the following tests: the effect of the opening of Evangelical churches on recidivism using an alternative definition of crime categories, the heterogeneous effects of the opening of Evangelical churches on employment of young men and young Evangelical men by social activities organized at the church, the effects of the opening of Evangelical churches on reincarceration within different time periods excluding also individuals released within different time windows from the opening of the churches, the effect of the opening of Evangelical churches on reincarceration by original and reincarceration crime, the effects of the opening of Evangelical churches on sentence lengths and the heterogeneous effects of the churches by type of Evangelical faith.

## D.1 Alternative Definition of Crime Categories

As a robustness check, we present results that rely on an alternative classification of crimes. In this alternative classification, individuals who committed a violent crime are still only included in the violent crime category. However, individuals that served a sentence for multiple non-violent crimes are included in all the categories that correspond to the crimes they committed. For example, an individual that committed a drug and a property crime enters both the drug and the property crime analyses. Figure D.I reports the results of this robustness check. The figure shows very similar results to those reported in the main analysis of the paper in Table III.

Figure D.I: Effect of Evangelical Church Openings on 12-Month Reincarceration by Type of Crime in the Original Sentence (Alternative Definition of Crime Categories)



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The figure 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. We exclude from property crimes, drug crimes, and other crimes subsets those individuals that served a sentence involving any form of violent crime. Non-violent criminals can be in more than one category if they served a sentence for more than one non-violent crime. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

## D.2 Heterogeneous Effects of Evangelical Church Openings on Employment of Young

In Table V reported in Section 6.2 we show that Evangelical church openings increase labor force participation of young men, particularly for young evangelical men. In this subsection, we explore whether these effects are heterogeneous depending on the relevance of the different types of activities organized by the churches.

To address this question, we estimate an augmented version of the basic difference-in-differences model with a triple interaction of the variables indicating whether a released inmate was living within a 100 meter radius from the church before entering prison (Inner ring), a dummy variable indicating whether the church had opened before the inmate is released from prison (Post), and an index measuring the relevance of each activity in the neighborhood (Activity Relevance Index). The specification also includes the interactions *Inner ring*  $\times$  *Activity Relevance Index* and *Post*  $\times$  *Activity Relevance Index*, year-at-release fixed effects, and neighborhood fixed effects.

Table D.I reports the results of the analysis estimating the heterogeneous effects on labor force participation for young Evangelical men and Table D.II reports the results for the full sample of young men. Overall, the estimates suggest that those Evangelical churches specialized in increasing employability and earnings potential, conducting charity activities, and providing family support seem to have the largest effects on labor force participation. Those Evangelical churches providing criminal rehabilitation also seem to increase labor force participation but only for the full sample of young men.

Table D.I: Heterogeneous Effect of Evangelical Churches on Labor Force Participation of Young Evangelical Men by Relevance of Activities Organized by the Churches in the Neighborhood

	Drugs and alcohol abuse rehabilitation (1)	Criminal rehabilitation (2)	Employability and earnings potential (3)	Charity activities (4)	Family support (5)
Inner ring $\times$ Post $\times$ Activity Relevance Index	0.092 (0.138)	0.063 (0.066)	0.032 (0.005)	0.001 (0.000)	0.005 (0.002)
Inner ring $\times$ Post	0.010 (0.059)	0.010 (0.055)	0.012 (0.055)	0.009 (0.055)	0.009 (0.055)
Observations	2,458	2,458	2,458	2,458	2,458

*Notes:* This table presents the results of specifications exploring heterogeneous effects of church openings on the employment rate of evangelical males younger than 30 depending on the relevance of the different types of activities organized by the churches in their neighborhoods. All estimates come from an augmented version of the basic difference-in-differences estimates. For this analysis, we add an interaction between a dummy variable that indicates whether a released inmate was living in a 100 meter radius of the church before entering prison (Inner ring), a dummy variable indicating whether the church had opened before the inmate is released from prison (Post), and an index measuring the relevance of each activity in the neighborhood (Activity Relevance Index). The specification also includes the interactions *Inner ring  $\times$  Activity Relevance Index* and *Post  $\times$  Activity Relevance Index*, year-at-release fixed effects, and neighborhood fixed effects. The relevance of an activity in the neighborhood is measured by the ratio between the number of people participating in each activity according to the survey and the number of Evangelicals living in a 100 meters radius around the church according to the 2002 Census (i.e., before the opening of the churches in our estimation sample). The heading of each column indicates the activity being studied in each case. Thus, column (1) studies heterogeneity by the relevance of alcohol and drugs abuse rehabilitation programs; column (2) by the relevance of criminals rehabilitation activities; column (3) by the relevance of activities designed to help individuals to connect with labor market opportunities; column (4) by the relevance of charity activities in the neighborhood (i.e., community kitchens and other material support ); and column (5) by the relevance of family support activities (tutoring and inter-mediation for couples and for parents and children). In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

Table D.II: Heterogeneous Effect of Evangelical Churches on Labor Force Participation of Males Younger than 30 by Activities Developed by the Church in the Neighborhood

	Drugs and alcohol abuse rehabilitation (1)	Criminal rehabilitation (2)	Employability and earnings potential (3)	Charity activities (4)	Family support (5)
Inner ring $\times$ Post $\times$ Activity Relevance Index	-0.0103 (0.0341)	0.0176 (0.0057)	0.0063 (0.0025)	0.0002 (0.0000)	0.0014 (0.0004)
Inner ring $\times$ Post	0.0098 (0.0591)	0.0097 (0.0551)	0.0121 (0.0550)	0.0086 (0.0547)	0.0094 (0.0546)
Observations	22,104	22,104	22,104	22,104	22,104

*Notes:* This table presents the results of specifications exploring heterogeneous effects of church openings on the employment rate of males younger than 30 depending on the relevance of the different types of activities organized by the churches in their neighborhoods. All estimates come from an augmented version of the basic difference-in-differences estimates. For this analysis, we add an interaction between a dummy variable that indicates whether a released inmate was living in a 100 meters radius of the church before entering prison (Inner ring), a dummy variable indicating whether the church had opened before the inmate is released from prison (Post), and an index measuring the relevance of each activity in the neighborhood (Activity Relevance Index). The specification also includes the interactions *Inner ring  $\times$  Activity Relevance Index* and *Post  $\times$  Activity Relevance Index*, year-at-release fixed effects, and neighborhood fixed effects. The relevance of an activity in the neighborhood is measured by the ratio between the number of people participating in each activity according to the survey and the number of Evangelicals living in a 100 meters radius around the church according to the 2002 Census (i.e., before the opening of the churches in our estimation sample). The heading of each column indicates the activity being studied in each case. Thus, column (1) studies heterogeneity by the relevance of alcohol and drugs abuse rehabilitation programs; column (2) by the relevance of criminals rehabilitation activities; column (3) by the relevance of activities designed to help individuals to connect with labor market opportunities; column (4) by the relevance of charity activities in the neighborhood (i.e., community kitchens and other material support ); and column (5) by the relevance of family support activities (tutoring and inter-mediation for couples and for parents and children). In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

### D.3 Effect of Evangelical Church Openings on Reincarceration at Different Time Windows Excluding Individuals Released Shortly Before Church Openings

Figure IV in Section 5.2.2 reports the effect of Evangelical church openings on recidivism within different time windows following release. The graph shows that there is an important difference in the probability of returning to prison already three months after the release date.

In this subsection, we re-estimate the effect of Evangelical church openings on the probability of reincarceration within 3, 6, 12, and 18 months following release but excluding from the analytical sample those individuals released from prison 3, 6, 12, and 18 months before the church openings. The estimates, reported in Table D.III, are very similar to those obtained in the main analysis which does not exclude from the analytical sample individuals released from prison before the opening of the church.

Table D.III: Effect of Evangelical Church Openings on Reincarceration at Different Time Windows Excluding Potentially Problematic Individuals (Original Sentence: Property Crime)

	Pr. of Returning to Prison in:			
	3 months	6 months	12 months	18 months
Inner ring = 1 × Church opened = 1	-0.078 (0.035)	-0.082 (0.042)	-0.110 (0.041)	-0.083 (0.041)
Inner ring = 1	0.012 (0.014)	0.021 (0.016)	0.039 (0.018)	0.035 (0.018)
Church opened = 1	0.017 (0.020)	0.015 (0.025)	0.015 (0.024)	0.004 (0.026)
Observations	13844	13197	11912	10662

*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 3, 6, 12, and 18 months following the release date for individuals sentenced for property crime. Individuals released 3, 6, 12, and 18 months before the opening of the church are excluded from the analysis. 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 parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

#### **D.4 Effect of Evangelical Church Openings on Reincarceration by Original and Reincarceration Crime**

This subsection examines the probability of returning to prison for different types of crimes for individuals originally sentenced for different types of crimes.

The results are reported in Table D.IV. The estimates reported in Panel A show that, for individuals originally sentenced for committing property crime, Evangelical church openings reduce significantly the probability of reincarceration for committing property crime but not for other types of crimes. For individuals originally sentenced for committing other crimes, the estimates do not show any significant effects of Evangelical church openings on reincarceration for any type of crime.

Table D.IV: Effect of Evangelical Church Openings on 12-month Reincarceration by Original and Reincarceration Crime

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<b>Panel A: Individuals originally sentenced for property crime</b>				
	Pr. of returning to prison for:			
	Property crime (1)	Violent crime (2)	Drug crime (3)	Other crime (4)
Inner ring = 1 × Church opened = 1	-0.069 (0.038)	-0.022 (0.018)	0.000 (0.009)	-0.021 (0.034)
Observations	14269	14269	14269	14269
Outcome mean before church opening	0.39	0.07	0.01	0.14

<b>Panel B: Individuals originally sentenced for violent crime</b>				
	Pr. of returning to prison for:			
	Property crime (1)	Violent crime (2)	Drug crime (3)	Other crime (4)
Inner ring = 1 × Church opened = 1	0.016 (0.023)	0.022 (0.022)	-0.003 (0.008)	-0.023 (0.029)
Observations	9954	9954	9954	9954
Outcome mean before church opening	0.11	0.13	0.01	0.09

<b>Panel C: Individuals originally sentenced for drug crime</b>				
	Pr. of returning to prison for:			
	Property crime (1)	Violent crime (2)	Drug crime (3)	Other crime (4)
Inner ring = 1 × Church opened = 1	-0.009 (0.041)	-0.021 (0.026)	0.016 (0.053)	0.007 (0.052)
Observations	2210	2210	2210	2210
Outcome mean before church opening	0.04	0.03	0.13	0.07

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*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 for type of crime committed following the release date and 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 parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring).

## D.5 Effect of Openings of Evangelical Churches on Sentence Length

Table D.V summarizes the analyses on recidivism and sentence length. Panel A presents results for individuals originally sentenced for property crime, while Panel B presents results for individuals sentenced for any crime. The results in column (1) come from a specification that focuses on individuals who actually return to prison. Therefore they are subject to the selection issues described in the previous paragraph. With this caveat in mind, we find that the opening of an Evangelical church does not make a statistically significant difference in sentence length. To avoid the selection problems mentioned above, we implement a second exercise in which we look at the probability of being sentenced for more than 0, 30, 60, 90, 180, and 365 days. We study this using a linear probability model in which the outcome is defined as a dummy variable that takes a value of one if the sentence is longer than the relevant threshold, and a value of zero otherwise. A nice feature of this exercise is that it allows us to include in the regression individuals who do not return to prison. These results indicate that Evangelical church openings reduce reincarceration rates along the whole distribution of prison lengths. Indeed, we find a drop of 5.6 percentage points (56%) in the probability of returning to prison for more than 365 days, a result that suggests that Evangelical churches are not only reducing minor property crimes, but also more serious property crimes. As in our main analyses, when bringing into the analyses other types of crimes we find no statistically significant effects (see Panel B).

Table D.VI presents the results of similar analyses but for the first sentences. The main difference is that as in the main body of the paper, the results in columns (2) to (6) are based on counts of individuals entering prison normalized by the area of the ring where they live. Thus, these columns look at changes in the number of individuals being sent to prison for the first time for more than 0, 30, 60, 90, 180, and 365 days. While the results in column (1) show no significant impact on the length of the sentence for those that enter prison, the estimates reported in columns (2) to (6) indicate that the opening of the church decreased the number of people in the neighborhood sentenced to prison for the first time all over the distribution of prison lengths.

Table D.V: Effect of Openings of Evangelical Churches on Sentence Length

	Sentence length (days) (1)	Ever sentenced (2)	Sentence >1 months (0/1) (3)	Sentence >3 months (0/1) (4)	Sentence >6 months (0/1) (5)	Sentence >12 months (0/1) (6)
Panel A: Individuals Originally Sentenced for Property Crime						
Inner ring = 1 × Church opened = 1	44.245 (66.140)	-0.111 (0.040)	-0.072 (0.031)	-0.074 (0.025)	-0.046 (0.022)	-0.056 (0.021)
Observations	7,071	14,269	14,269	14,269	14,269	14,269
Outcome mean	241.12	0.61	0.36	0.20	0.13	0.10
Panel B: Individuals Originally Sentenced for Any Crime						
Inner ring = 1 × Church opened = 1	-31.914 (143.742)	-0.023 (0.024)	-0.022 (0.012)	-0.012 (0.009)	-0.010 (0.008)	-0.012 (0.007)
Type of crime FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	12,320	34,061	34,061	34,061	34,061	34,061
Outcome mean	254.62	0.45	0.24	0.14	0.10	0.07

*Notes:* The table presents difference-in-differences estimates for the effect of Evangelical church openings on sentence length for individuals recently released from prison. Column (1) focuses only on individuals who return to prison. Column (2) replicates our main analysis and focuses on the probability that these individuals return to prison for any sentence length. Columns (3) to (6) look at the probability that these individuals return to prison for more than 30, 90, 180, and 365 days. As in the main specification in the paper, the inner ring includes individuals living at 100 meters or less from the church. The external ring includes individuals living at between 250 meters and 350 meters from the church. All specifications in Panel A include year and neighborhood fixed effects. All specifications in Panel B include year, neighborhood fixed effects and type of crime fixed effects. Standard errors clustered at the neighborhood level (i.e., inner plus outer ring) are presented in parentheses.

Table D.VI: Effect of Openings of Evangelical Churches on First Sentence Length

	Sentence length (days) (1)	Ever sentenced (2)	Sentence >1 months (0/1) (3)	Sentence >3 months (0/1) (4)	Sentence >6 months (0/1) (5)	Sentence >12 months (0/1) (6)
Panel A: Individuals Sentenced for Property Crime						
Inner ring = 1 × Church opened = 1	-130.013 (325.637)	-1.164 (0.342)	-0.487 (0.232)	-0.331 (0.155)	-0.272 (0.124)	-0.257 (0.106)
Observations	4,744	32,180	32,180	32,180	32,180	32,180
Outcome mean	315.70	6.09	3.47	1.88	1.26	0.93
Panel B: Individuals Sentenced for Any Crime						
Inner ring = 1 × Church opened = 1	327.200 (329.871)	-3.195 (1.095)	-2.076 (0.643)	-1.550 (0.503)	-1.138 (0.394)	-0.951 (0.319)
Observations	16,503	32,180	32,180	32,180	32,180	32,180
Outcome mean	394.29	31.59	13.44	9.44	6.89	5.02

*Notes:* The table presents difference-in-differences estimates for the effect of Evangelical church openings on sentence length for individuals that are first imprisoned. Column (1) focuses only on individuals who went to prison for the first time. Column (2) replicates our main analysis and focuses on the number of individuals that are sentenced to prison. Columns (3) to (6) look at the number of individuals that were sentenced for the first time to prison sentence for more than 30, 90, 180, and 365 days. In columns (3) to (6), the outcome is the number of individuals entering prison normalized by the area of treatment and control zones for committing property crime in Panel A and for committing any crime in Panel B. As in the main specification in the paper, the inner ring includes individuals living at 100 meters or less from the church. The external ring includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. Standard errors clustered at the neighborhood level (—) i.e., inner plus outer ring) are presented in parentheses.

## D.6 Heterogeneous Analysis by Type of Evangelical Faith

As discussed in Section 2 of the paper, the most popular denomination among surveyed churches is Pentecostal (57%), followed by Presbyterian (4%), and Baptist (4%). There are multiple other denominations that are less common in our sample —e.g., Adventist, Anglican, Apostolic, Methodist —that we group into one single category for exposition purposes.

We use this information to test whether the effect of the church openings varies depending on the specific Evangelical denomination of the church. Specifically, we explore whether the effects on 12-month reincarceration rates are different for Pentecostal and other Evangelical churches. To study this we add to our baseline specification a triple interaction between a dummy variable that indicates whether a released inmate lives within 100 meters from the church (i.e., *Inner ring*), a dummy variable that indicates whether the church opened while the inmate was in prison (i.e., *Post*), and a dummy variable that indicates whether the Evangelical church is Pentecostal. The specification also includes the interactions *Inner ring*  $\times$  *Pentecostal* and *Post*  $\times$  *Pentecostal*.

The results in Table D.VII suggest that the effects we find on recidivism are larger for Pentecostal churches. Indeed, the estimate we find for Pentecostal churches is almost twice the estimate we find for other Evangelical churches. Note, however, that this difference is not statistically different from zero. Considering the small sample size and the lack of statistical power, these results should be interpreted with caution.

Table D.VII: Effect of Evangelical Church Openings on Reincarceration by Evangelical Denomination for Individuals Originally Sentenced for Property Crime

	Property crime
Inner ring = 1 × Church opened = 1 × Pentecostal church = 1	-0.091 (0.363)
Inner ring = 1 × Church opened = 1	-0.097 (0.307)
Observations	850
Outcome mean before church opening	0.64

*Notes:* This table presents the results specifications exploring heterogeneous effects of church openings on 12-month reincarceration rates depending on the specific evangelical faith of the church: Pentecostal vs other evangelical. All estimates come from an augmented version of specification (1) in which we add an interaction between a dummy variable that indicates whether a released inmate was living within a 100 meter radius of the church before entering prison (Inner ring), a dummy variable indicating whether the church had opened before the inmate is released from prison (Post), and a dummy variable indicating whether the evangelical church is Pentecostal. The specification also includes the interactions *Inner ring* × *Pentecostal* and *Post* × *Pentecostal*, year-at-release fixed effects, and neighborhood fixed effects. In parentheses, standard errors clustered at the neighborhood level (i.e., neighborhood form by the inner plus the outer ring).

## E Social Activities of NGOs in Chile

In Section 7, we document that NGOs that provided labor-related services significantly decreased recidivism among individuals that served sentences for committing property crime. To gain a better understanding of the characteristics and type of activities offered by these organizations, we surveyed a random sample of them.

To gain a better understanding of the characteristics and type of activities offered by these organizations, we surveyed a random sample of them. We initially tried to collect information from NGOs through their websites and Facebook pages. However, for the vast majority of them, the information available on-line was non-existent or very limited. Thus, we proceeded through requesting telephonic numbers from the public registry of NGOs. In total, we surveyed a sample of 29 NGOs specialized in providing employability and earnings potential services via phone during August and September of 2022. Similarly to what we did for churches, we collected information on the history, main funding source, and support activities offered by these NGOs.

Table E.I summarizes the results of the survey. The NGOs in our sample are relatively small. On average, they have 15 employees and volunteers working with them and they help 20 beneficiaries per month. As in the case of Evangelical churches, they work very locally. Their beneficiaries typically come from the same neighborhood (48%) or from the same municipality (17%) in which the NGO is located. Only one NGO in the survey reports having beneficiaries from multiple municipalities of the Metropolitan Region of Santiago. Almost 80% of the NGOs are located in low or mid-low SES areas and report unemployment as an important or very important problem for their local communities. Low levels of education (62%), and alcohol (55%) and drug abuse (59%) are also acknowledged as important or very important problems. Domestic violence (32%), crime (36%), and the presence of gangs (39%) still seem to be important issues in these communities, but to a lesser extent than for the communities around Evangelical churches.

Given their understanding of the multiple problems affecting the communities in which they work, it is not surprising that despite focusing on improving individuals' employability and earnings potential, these NGOs also offer support in other areas. According to the survey, 58% of them provide some type of material support, and 20% of them organize soup kitchens. 31% also offer tutoring for kids, and 10% of them have alcohol and drug abuse rehabilitation programs in place. In terms of their activities to improve labor market prospects, 58% of them offer some type of vocational training opportunities, and 31% of them offer opportunities to sell different types of products (e.g., handicrafts, vegetables, second-hand clothes). Thus, more than connecting individuals with formal job opportunities, these NGOs seem to provide their beneficiaries with a bundle of treatments that combines material support and opportunities to improve their employability and earnings potential through training and trading opportunities.

While the sample of NGOs targeted in the survey was random, some NGOs no longer exist or we failed to find a valid telephone number. Thus, one relevant question would be whether surveyed

NGOs are representative of the employability and earnings potential NGOs in the analytical sample. We address this question using census data. We show in table E.II that, as in the case of Evangelical churches, individuals living within 100 metres from NGOs surveyed are very similar to those living within 100 meters from the rest of NGOs in the sample. In particular, we find no differences in terms of religion, school enrolment, child marriage, teenage pregnancy, secondary education and age. The only differences identified are for labor force participation, which is slightly lower among individuals living in the neighborhoods of the NGOs surveyed.

Table E.I: Characteristics of NGOs

<i>A. NGO size</i>				
	<i>Mean</i>	<i>P20</i>	<i>P50</i>	<i>P80</i>
Number of employees	15.042	3.000	12.000	20.000
Number of beneficiaries	20.294	12.000	18.000	20.000
	<i>Same neighborhood of the NGO</i>	<i>Same municipality of the NGOs</i>	<i>Same and neighboring municipalities of the NGO</i>	<i>Multiple municipalities in the Metropolitan Region</i>
Where do beneficiaries typically live? (%)	48.26	17.24	27.59	3.45
	<i>Individual contributions</i>	<i>Competitive funds</i>	<i>Institutional contributions</i>	<i>Other sources</i>
Funding sources (%)	75.86	31.03	27.59	27.59
	<i>None</i>	<i>Evangelism</i>	<i>Catholicism, Judaism, and Islamism</i>	<i>Other</i>
Religious orientation (%)	86.21	10.34	0.00	3.45
<i>B. Neighborhood SES and Importance of Different Problems</i>				
	<i>Low</i>	<i>Medium-Low</i>	<i>Medium-High</i>	<i>High</i>
Neighborhood SES	27.59	51.72	17.24	3.45
	<i>Very important</i>	<i>Important</i>	<i>Slightly important</i>	<i>Not important</i>
Unemployment	55.17	24.14	6.90	13.79
Low level of education	27.59	34.48	10.34	27.59
Alcohol abuse	37.93	17.24	20.69	24.14
Drug abuse	48.28	10.34	17.24	24.14
Domestic violence	14.29	17.86	25.00	42.86
Criminal activities	10.71	25.00	14.29	50.00
Gangs drug trafficking	25.00	14.29	14.29	46.43

*Notes:* This table characterizes non-governmental organizations focusing on improving the employability and earnings potential of their beneficiaries. This information was collected through a survey applied to a random sample of this type of NGOs that are part of our main estimation sample.

Table E.II: Characteristics of Individuals Living within 100m of NGOs: Surveyed vs Non-Surveyed NGOs

	Surveyed NGO (1)	Non-surveyed NGO (2)	Difference (3)
Evangelical	0.217	0.181	0.036
Working (18-30)	0.398	0.453	-0.054
Working (all)	0.311	0.331	-0.019
Studying	0.744	0.768	-0.024
Adolescent mother	0.106	0.095	0.011
Married as teenage	0.065	0.044	0.021
Secondary education	0.344	0.345	-0.001
Age	31.613	31.119	0.494
Observations	2384	164268	

*Notes:* The table presents summary statistics for individuals in the 2002 Census data living within 100 meters from the location in which NGOs working to improve employability and earnings potential of their beneficiaries will open between 2006 and 2014. Column (1) focuses on individuals living nearby NGOs that we surveyed. Column (2) focuses individuals living nearby NGOs in our sample, but that we did not survey. Column (3) shows the magnitude of the differences between (1) and (2).