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Recidivism and neighborhood institutions: evidence from the rise of the evangelical church in Chile

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Abstract
Rehabilitating convicted criminals is challenging; indeed, an important share of them return to prison only a few years after their release. Thus, finding effective ways of encouraging crime desistance, particularly among young individuals, has become an important policy goal to reduce crime and incarceration rates. This paper provides causal evidence that the local institutions of the neighborhood that receives young individuals after prison matter. Specifically, we show that the opening of an Evangelical church reduces twelve-months re-incarceration rates among property crime offenders by more than 10 percentage points. This effect represents a drop of 16% in the probability of returning to prison for this group of individuals. We find smaller and less precise effects for more severe types of crime. We discuss two classes of mechanisms that could explain our results: religiosity and social support. We provide evidence that the social support provided by evangelical churches is an important driver of our findings. This suggests that non-religious local institutions could also play an important role in the rehabilitation of former inmates.

Key words: crime desistance, recidivism, religion
JEL codes: K42; H42, J4

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1 Introduction

Rehabilitating convicted criminals has proven to be challenging. Between 30% and 50% of individuals sentenced to prison are re-incarcerated in the two years following their release (Doleac, 2020; Yukhnenko et al., 2019). This phenomenon is costly for societies. Apart from the direct costs of crime, maintaining inmates in prisons is expensive. In OECD countries, for instance, the average annual expenditure per inmate is close to USD 70,000. Encouraging desistance from crime is thus a primary policy goal for reducing both crime and incarceration rates (Doleac, 2020). Despite growing interest in understanding what factors could help to rehabilitate convicted criminals, we know little about the role played by the local institutions that inmates encounter in their neighborhoods after prison. The neighborhoods to which individuals are exposed at early ages influence many important long-term 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 et al., 2019), suggesting that neighborhood institutions could also be important for encouraging crime desistance among young offenders.

This paper provides causal evidence that the local institutions of the neighborhood to which individuals return after prison matter. Specifically, we show that the opening of an Evangelical church significantly reduces re-incarceration rates among recently released young inmates (i.e., inmates under 30 years old).[1] Understanding the role of local institutions in encouraging crime desistance is particularly interesting in contexts where criminal offenders are highly concentrated in certain neighborhoods. This is the case of Chile (see Figure I), the setting that we study, but also of many other countries including the US (Card et al., 2008; Chetty et al., 2016).[2]

We take advantage of rich administrative data in which we observe the home addresses of the universe of individuals under 30 entering prison between 2006 and 2014, and the exact dates in which they enter and leave prison. We combine these data with official records that contain the address and the opening date of all evangelical churches opened between 2006 and 2015 (i.e., 1,659

[1] 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 higher risk of committing crime (McCall et al., 2013; Ulmer and Steffensmeier, 2014).

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

churches). To overcome endogeneity concerns, we use a differences-in-differences strategy. Within a neighborhood, we define a treatment and a control area. The treatment area corresponds to an inner ring located immediately around the church, while the control area corresponds to an external ring slightly further away. Thus, we compare the change in re-incarceration rates of individuals entering prison before a church opens, and returning to the inner and external ring before and after a church opens.

We find that the opening of an evangelical church reduces twelve-months re-incarceration rates among property crime offenders by more than 10 percentage points. This effect represents a drop of 16% in the probability of returning to prison for these individuals. We also show that an important part of this effect arises already three months after the release date; the probability of returning to prison three months after being released drops by 7 percentage points. This suggests that the conditions that former inmates encounter immediately after leaving prison are important. Our results also indicate that the effect of the church openings is very local. Indeed, it becomes not significant when the radius used to define the inner ring is set at 200 meters. When studying drug crimes, violent crimes and other types of crimes we find smaller and less precise effects.[3] Finally, we also show that church openings decrease the number of young individuals going to prison for the first time. As in the case of re-incarceration, the effect is particularly strong for property crimes.

But how can evangelical churches lead recently released individuals to rehabilitate? Evangelical communities, organized around local churches, promote a healthy lifestyle and have strong social norms against crime, and alcohol and drug consumption. In addition, they are often very active in charity work and provide a support network to members of the community in need (Fediakova, 2004; Mariz, 1994; Costa et al., 2018). Thus, both the social support and the values promoted by these churches could decrease the net benefits of committing crime and the individual preferences for crime.

Although we cannot rule out that the promotion of evangelical values plays a role in reducing recidivism, we provide evidence that the social support provided by the evangelical churches is an important driver of our findings. Using Census data, we show that the areas shocked by a church

[3]Not finding significant drops in these crimes is not surprising. 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).

opening only experience a modest increase in the number of evangelicals. We do find, however, that following a church opening young evangelicals are more likely to be employed. In addition, we show that our results are driven by individuals who before entering prison—and therefore, before the church opening occurs—already identified as evangelicals. Although we cannot tell whether these former inmates are the ones actually getting the new jobs, this evidence suggests that the support that they are receiving from the church is relevant. Consistent with this idea, we also find that the effects are larger in areas with less public services, suggesting that the evangelical churches are particularly relevant in contexts where former inmates do not have other support networks. Finally, we were able to geocode the location and opening dates of a group of non-religious organizations providing labor insertion support and helping with alcoholism and drug abuse rehabilitation. We find that they generate similar effects to the ones we document for evangelical churches. These results are important from a policy perspective, as they suggest that local institutions that help inmates to reinsert in their communities once they are released from prison, can play an important role in encouraging desistance from crime.

This paper contributes to the literature that investigates the role of contextual circumstances on crime (Machin and Meghir, 2004; Bell et al., 2018) and more specifically, how the context to which individuals return after prison affects their future criminal behaviour. A handful of studies has shown that the material conditions faced by criminals at release and the value of the outside non-crime options they face, affect recidivism (e.g., Raphael and Weiman (2003); Cook et al. (2015); Valentine and Redcross (2015); Berk and Rauma (1983); Yang (2017); Tuttle (2019)). Perhaps closer to us, Kirk (2009) and Billings and Schnepel (2020) stress the importance of criminal networks in the neighborhood and how they affect the rehabilitation of inmates after release. Kirk (2009) shows that released inmates that were taken out of their networks due to Hurricane Katrina were less likely to commit crime than those that could return to their neighborhood. Consistently, Billings and Schnepel (2020) shows that inmates who, at the moment of release, have more criminal partners in prison are less likely to re-offend. Two recent studies—Pettus-Davis et al. (2017) and Shamblen et al. (2017)—published in psychology and criminology journals use randomized controlled trials to evaluate the effect of community support programs on recidivism of recently released individuals. Both studies fail to find significant effects, although this could simply be due to lack of power

(sample sizes are 40 and 280 individuals respectively). Our paper contributes to this literature by showing that local institutions that support recently released inmates can play an important role in their rehabilitation without the need of removing them from their neighborhoods.

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

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

2 Evangelical Churches in Chile

2.1 Evangelical churches in Chile

In the last decades, the Evangelical churches have experienced a consistent growth in South America. Chile has not been an exception. While in 1992 around 12% of the Chilean population identified as member of an Evangelical Church, in 2019 this figure rose to 18%.[4] The number of Evangelical churches has experienced an even faster growth.

The growth of evangelical churches in Chile was boosted by a 1999 law that guarantees religious freedom and equal rights to all churches (Law 19,638). This law allowed evangelical churches to

[4]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.

register as religious entities and to access the same benefits and tax exemptions that other churches already had. Figure II shows that the number of churches being registered quickly increased in the years following the law, reaching a peak of 212 in 2005.

Evangelicals in Chile come predominantly from low socioeconomic groups. According to the Bicentenario survey, 25% of low socioeconomic status individuals are members of an Evangelical church, while among high socioeconomic status individuals this figure is only 6%.[5] These churches are usually build and funded entirely by their members, and in general they are small (Fediakova, 2004) (see Figure III for some examples). Despite small in size, evangelical churches are decentralized in their functioning and their preachers play an important role in their communities. Evangelical communities often provide basic assistance to those in need in their neighborhood and hold activities and gatherings that target specific demographic groups. Spreading the word of God and the rehabilitation of alcoholics, drug addicts and criminals are crucial goals of their social action (Fediakova, 2012; Mansilla et al., 2017; Fediakova, 2014).

Consistently with this evidence, a survey implemented by the PEW Research Center in 2014 in multiple countries of Latin America, including Chile, indicates that evangelicals are more likely to do charity work, visit sick people, and provide different types of support to those in need than other individuals with links to a church (i.e., individuals who have attended a religious service in the last 12 months).[6] In addition, they are more likely to report that their church provides support in finding jobs, and lobbies for pro-poor policies (see Panel (a) in Figure IV). According to this survey, evangelicals are also more likely to oppose gay marriage, to think that abortion should be illegal and to favour strong leaders in government. They have stronger views against alcohol consumption and have more conservative views about the role of women in the family (see Panel (b) in Figure IV).[7] Finally, the members of evangelical churches have a more active religious life and participate in activities to convert and attract new people to the church.

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

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

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

3 Empirical Strategy

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

Considering that the areas where these new evangelical churches open are not necessarily random, we implement a difference-in-difference approach in which we define as treatment group individuals who before being sentenced to prison lived at 100 meters or less from the church location, and as control group individuals who before being sentenced lived at between 250 meters and 350 meters from it.[8] We focus on individuals who enter prison before a church opens near them, and compare the re-imprisonment probability of individuals returning to control and treated areas before and after a church opening. We focus on individuals who enter prison before the church opens to ensure that their entrance to prison is not affected by the church.[9]

Our baseline specification is:

$$R(m)_{ict} = \beta_1 T_{ict} + \beta_2 Post_{ct} + \beta_3 T_{ict} \times Post_{ct} + \beta_4 X_{ict} + \mu_c + \mu_t + \varepsilon_{ict} \quad (1)$$

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

[8] Individuals living between 100 meters and 250 meters from the church, which corresponds to the buffer zone, are initially excluded from the analysis although they will be included in later analyses as we test the robustness of the results to changes in the size of the rings and in the buffer zone.

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

Figure VI illustrates our control and treatment groups. All the individuals living in the inner circle—i.e., at 100 meters or less from the church—belong to the treatment group. The control group, on the other hand, includes individuals living in the outer ring. Our identification strategy relies in the assumption that in the absence of the church, the trajectory of recidivism in the inner ring would be parallel to its trajectory in the outer ring. To investigate if this assumption is plausible, we rely on event studies that allow us to check whether control and treated areas where indeed in parallel trends before the church opens.[10]

As illustrated in Panel (b) of Figure VI, in high density areas some churches are close to each other making some individuals to be at the same time in treated and control areas of different churches. In order to avoid having duplicated individuals in the estimation sample, we assign them to the church that first opens near them (i.e., anywhere within 350 meters from where they live).[11]

Recent literature highlights important challenges when the timing of the treatment varies across treated units in differences-in-differences and event studies settings. (Goodman-Bacon, 2018; Borusyak and Jaravel, 2017). Our empirical approach attenuates these concerns. Since specification 1 includes a neighborhood fixed effect that includes both a treatment and a control area, the parameter of interest β_3 can be thought as an estimate of the pooled effect of 1,659 2×2 difference-in-differences, one per church opened during the period studied.[12]

To investigate how local is the effect of a church opening, we present additional specifications in which we vary the radius that defines the treatment group. If the influence of a church goes beyond the treatment radius, it could also affect some of the control units affecting in this way our estimates. To investigate this, in Section A we present estimates from specifications in which we vary the buffer ring that determines the distance between treated and control units.

Finally, we complement our analyses with an alternative identification strategy. Once more we rely

[10] In Appendix A.4 we use Census data and show that individuals living in control and treated areas are very similar both before and after a church opening. We also show that the opening of evangelical churches did not crowd-out or in NGOs or other community-based organizations.

[11] In principle, additional churches could open near treatment units increasing the intensity of the treatment to which they are exposed. In addition, churches could open near control units and start treating them. This second case would make it more difficult to find any effect. These cases are, however, extremely rare in our data. Excluding observations affected by these scenarios does not affect our results.

[12] Note that in specification 1 year fixed effects are still estimated using all neighborhoods. In Appendix A.2 we present the results of a specification that controls for neighborhood-specific years fixed effects. The results are very similar to the ones we present in the main body of the paper.

on differences-in-differences estimations, but this time both treatment and control units correspond to individuals who live at 100 meters or less from the location where an evangelical church will open in the future. The churches that define the treatment group are those opened between 2006 and 2014, while the churches that define the control group are those opened between 2015 and 2018. We do not observe prison sentences after 2015, so we study re-imprisonment in the same time period as before.

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

4 Data

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

The prisoners records include detailed information about the crimes they committed, their exact incarceration and release dates, a rich vector of demographic characteristics—i.e., gender, age, education level, civil status, number of children and religion—and their home address. The church records include the name of the church, the address, and the exact date in which it was registered at the Ministry of Justice.

To create our main sample, we first geocoded all prisoners' and churches' addresses. None of the datasets included postal codes, what meant that we had to rely on street names, house numbers and municipality names. We were able to correctly identify around 80% of prisoners' addresses and 90% of churches' addresses.[13] Considering our identification strategy, not finding all prisoners' addresses should not be a major concern. It affects the power of our analyses, but unless there is some non-random selection process making the share of unidentified addresses to differ in control and treated areas, this should not affect the consistency of our estimates. Something similar occurs

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

with the churches that we are not able to identify. They reduce the number of observations in our sample, but this should not affect the internal validity of our results.[14]

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

In addition to the aforementioned records, we use the cartography and the individual level datasets of the population censuses of 2002 and 2012.[15] These data allow us to investigate whether the neighborhoods where the churches opened experienced changes in dimensions not necessarily related with criminal activity.

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

5 Results

This section presents the main results of the paper. We first show that the opening of an evangelical church reduces re-incarceration rates for individuals returning to the neighborhood after serving prison sentences for property crime. We do not find, however, significant changes in re-incarceration

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

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

rates for individuals involved in other types of crime. Finally, we show that the drop in re-offending rates is already relevant three months after the release date, and that the effects of church openings are very local and quickly decay with distance.

5.1 Effect of Church Openings on Re-incarceration: All Crimes

We start by studying how the opening of an evangelical church affects recidivism among individuals returning to the neighborhood after completing a prison sentence. To estimate this effect we rely on specification 1. As shown in Table II, individuals who after completing their time in prison return to live in a location that is very close—i.e., 100m or less—from a recently opened evangelical church are less likely to return to prison in the twelve months following their release date than similar individuals who return to the same location, but at a greater distance from the church—i.e., 250m to 350m from the church.

The results in Table II indicate that the probability of returning to prison in the twelve months following the release from prison drops in all crime categories, but this drop is significant only for individuals who committed property crimes. These individuals are 10.6 percentage points less likely to return to prison if after completing their sentences, they go back to a neighborhood where an evangelical church recently opened. This is a large effect; it represents a 16.6% drop relative to the levels of recidivism observed in the neighborhood before the church opening.[16]

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-months recidivism is also higher among them. Secondly, individuals involved in property crime have been shown to be more responsive to the conditions they find at release, and to interventions alleviating material needs (Tuttle, 2019; Mallar and Thornton, 1978; Berk et al., 1980). On the other hand, individuals involved in more severe types of crimes may have personal treats and links with criminal organizations that could make their rehabilitation more challenging for a non-specialized institution like Evangelical churches.

As discussed in Section 4, we observe individuals' addresses only when they enter prison. The

[16] In Section A we present results from a similar specification, but in which the control group consists of individuals that live very close to a church that has not yet opened (i.e., individuals living close to churches opening between 2015 and 2018). We find very similar results.

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

5.2 Effect of Church Openings on Re-incarceration: Property Crimes

This section studies in more detail the effect that the opening of an evangelical church has on the re-incarceration probabilities of individuals released from prison after completing sentences for property crime.

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

Table A.II shows that our estimates are robust to the inclusion of a rich vector of controls. The estimates in column (1) come from a specification that only controls for neighborhood and release year fixed effect. In contrast, the estimates in column (5) come from a specification that on top of these fixed effects controls by demographic, socioeconomic and family characteristics, by criminal history, religion and number of churches within one kilometer before being sentenced to prison. Despite the difference in the set of controls used in each specification, the estimates are remarkably similar.

The effects discussed so far examine the effect on recidivism after twelve-months from being released. In Table 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 a location close to an evangelical church are 7 percentage points less likely

to return to prison in the three months following their release. This drop represents a 70% of the drop that we observe when looking at longer periods of time. This result is consistent with previous research for various countries that has shown that an important part of the re-offending takes place very close to the release date (Morales Peillard et al., 2012; Durose et al., 2014), and highlights the importance of the environment and support that inmates receive immediately after being released from prison (see for instance Munyo and Rossi, 2015).

The results we have presented focus on individuals who before entering prison lived within 100 meters from the location where an evangelical church would open in the future. However, these are not necessarily the only individuals affected by the church opening. Next we study the effects of the church opening evolve with distance.

To answer this question, we estimate our baseline specification, but allowing the inner radius that defines the treatment group to vary between 50 and 300 meters. In all these specifications we keep the buffer radius of 150 meters constant.[17] As illustrated in Figure VIII, the effects of a church opening seem to be very local. The coefficients quickly decrease with distance and become statistically indistinguishable from zero at 200 meters.

These results are not surprising. We are investigating the effects of new churches. As discussed in Section 2, evangelical churches start relatively small (see Figure III for some examples). Their radius of influence, however, is not necessarily fixed. If the evangelical community starts to grow, the church could become relevant in a wider area. Unfortunately, the nature of our analyses prevent us from investigating how the effects of evangelical churches evolve over time. Our empirical strategy focuses on individuals who enter prison before the church opens, and therefore in order to study long term effects we would need to work with individuals going to prison for a very long time.[18] These cases are less frequent and can be very different from the ones in which we focus.

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

[18] As discussed in Section 3, our empirical strategy focuses on individuals who enter prison before the church opens. Thus, to study whether the opening of a church affects twelve-months 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 driving our results.

6 What is Behind our Results?

We hypothesise the opening of an evangelical church could affect re-incarceration through two main channels.

Evangelical communities place the support to individuals at risk at the center of their social action (Fediakova, 2004; Mariz, 1994). Thus, these communities could provide recently released inmates a support network (Costa et al., 2018), affecting the opportunity costs of committing crime and alleviating theri immediate needs. Providing material support to recently released inmates has shown to reduce recidivism (Yang, 2017; Tuttle, 2019). Although the evidence on employment programs is less conclusive, some studies suggest that enhancing job prospects of released inmates can reduce recidivism.[19]

Secondly, evangelical churches may increase religiosity of evangelists, convert individuals to evangelism or simply promote the evangelical lifestyle and values, which sanction drug and alcohol consumption and engagement in criminal activities. By promoting these stricter social norms, evangelical churches could change the preferences for crime, and eventually elevate the expected costs of committing crime either as a consequence of an increase in social monitoring (Gonzalez and Komisarow, 2020) or through the promise of punishment in the after life (Heaton, 2006). Higher levels of religiosity have been found to improve labour market outcomes and to help smooth consumption (Bryan et al., 2020; Chen, 2010). However, existing evidence between religiosity and crime is mixed, with some studies showing that religious revivals can decrease some types of crimes (Lowe, 2020) and others suggesting no relevant relationship (Heaton, 2006).

Although we cannot rule out that the latter channel plays a role in reducing recidivism, in the following sub-sections we implement different empirical exercises that provide evidence consistent with the social support mechanisms being an important driver of our results.

6.1 Effect of Church Openings on Religion and Labor Force Participation

This section investigates whether the opening of an evangelical church changes the neighborhood in terms of religion and employment. To explore this question, we use individual-level data from the

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

2002 and 2012 population censuses. In line with the analysis conducted in the paper, we compare individuals living very close to a new church opened between 2002 and 2012 with areas that are further away. The census data do not include the exact address of individuals, and therefore we rely on census blocks, the smallest geographic unit used in the census.[20] Therefore, for the analyses using census data we define treatment individuals as those living in a block with its centroid within 100 meters from the church and control individuals as those living in a block with its centroid located between 250 and 350 meters from the church.

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

On the other hand, we do not find any significant difference in terms of employment among individuals under 30 years old. We do, however, find a meaningful (2.6 percentage points) and statistically significant effect for evangelist men under 30. This result is consistent with churches providing a support network for the vulnerable members of their community.

6.2 Effect of Church Openings on Re-incarceration by Inmates' Religion

This section analyzes whether the effect of an evangelical church opening varies depending on the religion of individuals. Table VI shows that a large part of the effect documented in Section 5 is driven by individuals who before entering prison[21] already identified themselves as evangelicals. While for them we find a drop of 17.8 percentage points in 12-months re-incarceration rates, for individuals of other or no religion we find a non-significant drop of 3.9 percentage points.

The difference that we find in the estimates is consistent with evangelical churches affecting the

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

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

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

6.3 Effect of Church Openings on Re-incarceration by Public Services Availability

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

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

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

6.4 Effect of non-Religious Neighborhood Institutions on Re-incarceration

If the effect of the evangelical churches on re-incarceration is partly driven by their social action in the neighborhood, we should expect the effect of non-religious organizations doing similar work

in the neighborhoods to also have an effect on re-incarceration. This hypothesis is aligned with Sharkey et al. (2017), who shows that nonprofits organizations focused on reducing violence and building stronger communities helped to reduce crime in the US between 1990 and 2010.

In this section, we examine the effects on re-incarceration of the opening of different types of non-religious organizations in the neighborhood replicating the main identification strategy of the paper. Information on the exact address and opening date of these organizations is gathered from the Chilean Registry of non-governmental organizations. The results of the analysis are reported in Table VII. Consistent with the social action mechanism, they show that the opening of organizations that promote labor insertion have similar effects in terms of magnitude and statistical significance than the effect we find for churches. We find a similar effect when looking at organization that promotes alcohol and drug abuse rehabilitation. However, this last estimate is not statistically significant. The lack of a significant effect for this type of organizations is in part explained by a smaller sample size. On the other hand, sport, neighborhood and organizations with other missions do not seem to affect re-incarceration of individuals in the neighborhood.[22]

6.5 Effect of Church Openings on First Sentences

This Section shows that the opening of a new evangelical church also reduces the number of people going to prison for the first time.[23] Previous evidence remarks the importance of criminal networks in the neighborhood on recidivism (Kirk, 2009; Billings and Schnepel, 2020). Thus, if evangelical churches prevent some individuals in the community from engaging in crime, re-incarceration could be also affected through making it more difficult to find criminal partners for recently released individuals.

To investigate this hypothesis, we rely once more in 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.

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

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

Since treated and control rings differ in size, we normalize the count by the area of each ring.[24]

The results are reported in Table VIII. As in the case of re-incarceration we do find that a church opening reduces the number of people in the neighborhood entering prison for the first time. While the coefficients are negative for all types of crimes, the effects are statistically significant at conventional confidence levels for property and violent crime.[25]

While we do not see that individuals in treatment and outer rings differ in terms of demographic characteristics before or after the opening of the church (see Appendix A.4), it is not possible to rule out that at least part of the effect that we find in the first entrance analysis is driven by criminals moving away from the new churches. In contrast to our results in re-incarceration, the implication for the interpretation of this result is that the drop that we observe in the number of people going to prison around the church does not necessarily translate into a drop in the number of people going to prison in general.

6.6 Mechanisms Discussion

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

We also find that evangelical churches seem to decrease first imprisonment, which may indicate that churches could also affect re-incarceration rates by making more difficult for individuals recently released from prison to find partners to commit crime.

7 Conclusion

A large share of the individuals sentenced to prison, re-offend and are re-incarcerated a few years after being released. The costs that this phenomenon imposes on society have generated great

[24] In Section A.4, we show that the Census Blocks in treated and control rings have similar densities and that they are also similar in a rich vector of characteristics.

[25] The dynamics of this effect and the existence of parallel trends before the opening of the church are assessed in Figure A.II provided in Appendix A.4.

interest in understanding how to encourage desistance from crime. The economic and social context that inmates face when they are released seems to play an important role in their chances of rehabilitation, suggesting that neighborhood institutions could also be important.

This paper provides causal evidence that the local institutions of the neighborhood to which individuals return after prison matter. We show that the opening of an evangelical church significantly reduces re-incarceration rates among individuals sentenced to prison for committing property crime. We also show that following an evangelical church opening there is a decrease in the number of individuals sentenced to prison for the first time.

What is behind these effects? We study two broad classes of mechanisms: religiosity and promotion of evangelical values; and social support. While we cannot fully rule out the former mechanism, we find that the effect of the church is larger in areas with fewer public services available, suggesting that churches substitute to certain extent for other sources of support. We also find that these churches improve labour force participation among young evangelicals, and that their effect on re-incarceration is similar in magnitude to the effect of non-religious organizations focused on labor insertion, and drugs and alcohol abuse rehabilitation. Although we cannot disentangle which specific forms of support reduce re-incarceration, these findings suggest that the social action of evangelical churches is an important driver of the drop we document on re-incarceration rates.

Our results suggest that policy interventions aiming to support local institutions that help inmates to reinsert in their communities once they are released from prison could play an important role in encouraging desistance from crime.

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Table I: Summary Statistics

	All individuals entering prison before a church opening	Individuals in a 100m radius from the church	Individuals between 250m and 350m from the church
	(1)	(2)	(3)
A. Demographic characteristics			
Age at entry	23.651	23.348	23.434
Gender = Male	0.893	0.898	0.887
Sexual orientation = heterosexual	0.986	0.989	0.986
Nationality = Chilean	0.987	0.991	0.989
Belongs to a minority = No	0.979	0.980	0.978
B. Education level			
Primary Education	0.402	0.444	0.427
Some Secondary Education	0.307	0.314	0.304
Complete Secondary Education	0.249	0.215	0.233
Postsecondary Education	0.042	0.027	0.036
C. Family characteristics:			
Single	0.879	0.877	0.866
Married	0.113	0.116	0.126
Divorced	0.008	0.007	0.007
Widow(er)	0.001	0.000	0.001
Children	1.619	1.649	1.633
D. Religion:			
Atheist	0.211	0.188	0.199
Catholic	0.473	0.445	0.454
Evangelist	0.305	0.357	0.336
Other Religion	0.010	0.009	0.011
E. Criminal history and sentence characteristics:			
Previous sentences	1.444	0.986	0.948
Length of the sentence	308.435	312.715	313.785
Property crimes = 1	0.401	0.418	0.394
Violent crimes = 1	0.292	0.313	0.315
Drug crimes = 1	0.074	0.073	0.076
Returns to prison in less than 12 months	0.444	0.441	0.428
Observations	216,836	6,174	25,301

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

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

	Property Crimes (1)	Drug Crimes (2)	Violent Crimes (3)	Other Crimes (4)
Treated = 1 × Church opened = 1	-0.106**	-0.007	-0.003	-0.027
	(0.043)	(0.037)	(0.093)	(0.141)
Treated = 1	0.030	0.024	-0.049	-0.025
	(0.018)	(0.020)	(0.040)	(0.030)
Church opened = 1	-0.011	0.019	0.008	0.120*
	(0.022)	(0.044)	(0.022)	(0.066)
Observations	9968	7545	1612	3090
Outcome mean before church opening	0.60	0.34	0.27	0.40

Notes: The table presents Difference-in-Difference 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 by type of crime. The treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table III: Effect of Openings of Evangelical Churches on Recidivism

	(1)	(2)	(3)	(4)	(5)
Treated = 1 × Church opened = 1	-0.106**	-0.105**	-0.100**	-0.100**	-0.106**
	(0.043)	(0.043)	(0.043)	(0.043)	(0.043)
Treated = 1	0.030	0.026	0.026	0.026	0.031*
	(0.018)	(0.016)	(0.016)	(0.016)	(0.016)
Church opened = 1	-0.011	-0.007	-0.008	-0.010	-0.010
	(0.022)	(0.022)	(0.022)	(0.022)	(0.022)
Observations	9968	9636	9636	9599	9564
Outcome mean before church opening	0.60	0.60	0.60	0.60	0.60
Demographic characteristics	No	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes
Number of churches within 1km	No	No	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes

Notes: The table presents Difference-in-Difference 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 treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. Demographic controls include age at entry and gender, socioeconomic controls include a set of dummies indicating if the individual reached primary, secondary or post secondary education. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. Family controls include civil status and number of children, and religion refers to a set of dummies that indicate if an individual defines himself as Atheist, Catholic, Evangelical or as a member of other religion (i.e. Other Christian, Muslim, Jew, Jehovah Witness). Finally, "Number of churches within 1km "is the number of Evangelical churches already operating when an individual is released from prison within 1km from his home. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table IV: Effect of Openings of Evangelical Churches on Recidivism

	Pr. of Returning to Prison in:			
	3 months	6 months	12 months	18 months
Treated = 1 × Church opened = 1	-0.072**	-0.102**	-0.106**	-0.095**
	(0.037)	(0.044)	(0.043)	(0.041)
Treated = 1	0.011	0.023	0.030	0.031*
	(0.016)	(0.018)	(0.018)	(0.018)
Church opened = 1	-0.004	-0.001	-0.011	-0.021
	(0.018)	(0.023)	(0.022)	(0.021)
Observations	10199	10133	9968	9764
Outcome mean	0.28	0.43	0.60	0.68

Notes: The table presents Difference-in-Difference estimates for the effect of new 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. The treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table V: Effect of Openings of Evangelical Churches on Neighbourhoods

	Evangelist	Catholic	Atheist	Other religion	Work Young	Work Young male evangelist
	(1)	(2)	(3)	(4)	(5)	(6)
Treated = 1 × Church opened = 1	0.010***	-0.006*	-0.001	-0.002	0.007	0.026**
	(0.003)	(0.003)	(0.002)	(0.002)	(0.004)	(0.011)
Treated = 1	0.003	-0.004	-0.000	0.001	-0.002	-0.017*
	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)	(0.009)
Church opened = 1	0.015***	-0.027***	0.038***	-0.027***	0.021***	0.010**
	(0.001)	(0.002)	(0.001)	(0.001)	(0.002)	(0.005)
Observations	4,062,418	4,062,418	4,062,418	4,062,418	1,095,386	88,041
Outcome mean	0.176	0.643	0.120	0.060	0.477	0.603

Notes: The table presents difference-in-differences estimates for the effect of an Evangelical church opening on religion and labour force participation. The treated group 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). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table VI: Effect of Openings of Evangelical Churches on Recidivism (Property Crimes)

	Dist. to Municipality Top, mid and bottom 33% (1)	Education Centres in 500 meters (2)	Health Centres in 1000 meters (3)	Religion: Evangelist (4)
Treated = 1 × Church opened = 1	-0.173**	-0.207***	-0.158**	-0.039
	(0.078)	(0.076)	(0.071)	(0.050)
Treated = 1 × Church opened = 1 × Inter.1	0.081	0.018*	0.021	-0.139*
	(0.092)	(0.009)	(0.018)	(0.079)
Treated = 1 × Church opened = 1 × Inter.2	0.143			
	(0.099)			
Observations	9972	9972	9972	9922
Outcome mean before church opening	0.60	0.60	0.60	0.60
Effects after adding interactions				
Baseline Effect + Interaction 1	-0.092			-0.178***
	(0.059)			(0.068)
Baseline Effect + Interaction 2	-0.030			
	(0.066)			

Notes: The table presents differences-in-differences estimates for the effect of new openings of evangelical churches on the probability of returning to prison in the twelve months following the release date for individuals sentenced for property crime. The treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. Columns (1) to (3) study heterogeneous effects by proximity to public services. Column (4) studies heterogeneous effects by the religion of the inmate before entering prison. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

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

	Pr. of Returning to Prison in 12 months					
	Evangelical Churches	Labor insertion	Alcohol & drug abuse rehabilitation	Sports	Neighborhood and Housing	Others
Treated = 1 × Institution opened = 1	-0.105**	-0.111**	-0.094	0.011	0.002	-0.015
	(0.043)	(0.049)	(0.167)	(0.042)	(0.028)	(0.031)
Treated = 1	0.026	0.034	-0.002	0.014	0.015	0.009
	(0.016)	(0.024)	(0.040)	(0.014)	(0.013)	(0.018)
Institution opened = 1	-0.007	0.014	0.085	0.006	-0.011	0.017
	(0.022)	(0.027)	(0.072)	(0.022)	(0.016)	(0.017)
Observations	9636	6245	628	13902	19742	13093
Outcome mean	0.60	0.59	0.60	0.60	0.60	0.59

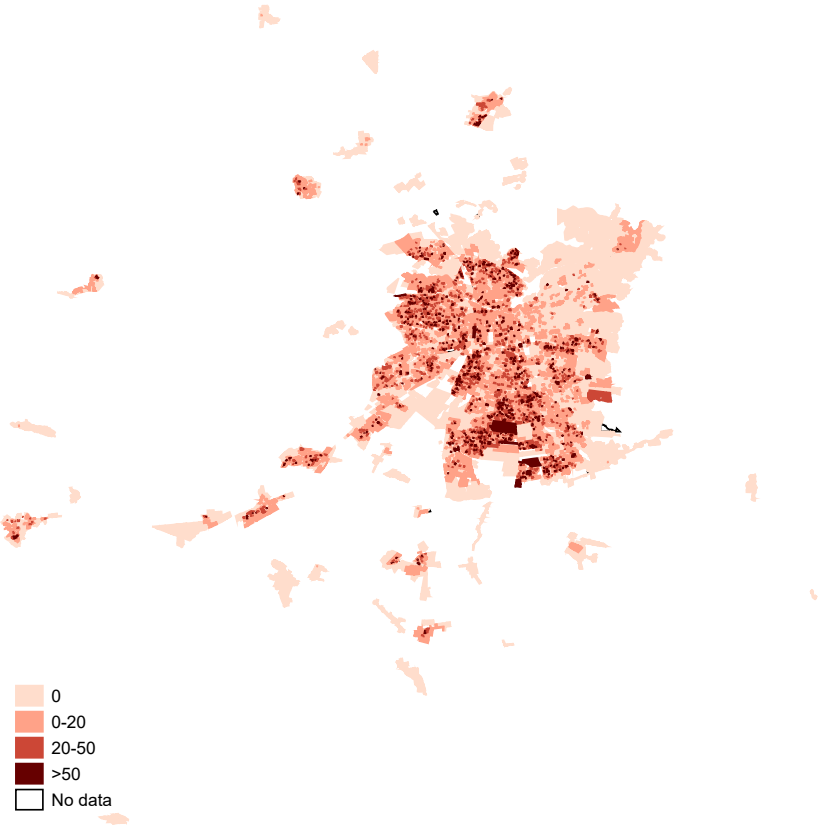
Notes: The table presents differences-in-differences estimates for the effect of churches and non-religious organizations opening in the neighborhood on the probability of returning to prison in the 12 months following the release date. Column (1) focuses on Evangelical churches, column (2) on labor insertion institutions, column (3) on alcohol and drug abuse rehabilitation institutions, column (4) on sports institutions, column (5) on neighborhood and housing institutions, and column (6) on other type of institutions. The treated group includes individuals living at 100 meters or less from any of these institutions. The control group includes individuals living at between 250 meters and 350 meters from the relevant institution. All specifications include year and neighborhood fixed effects. Demographic controls include age at entry to prison and gender. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

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

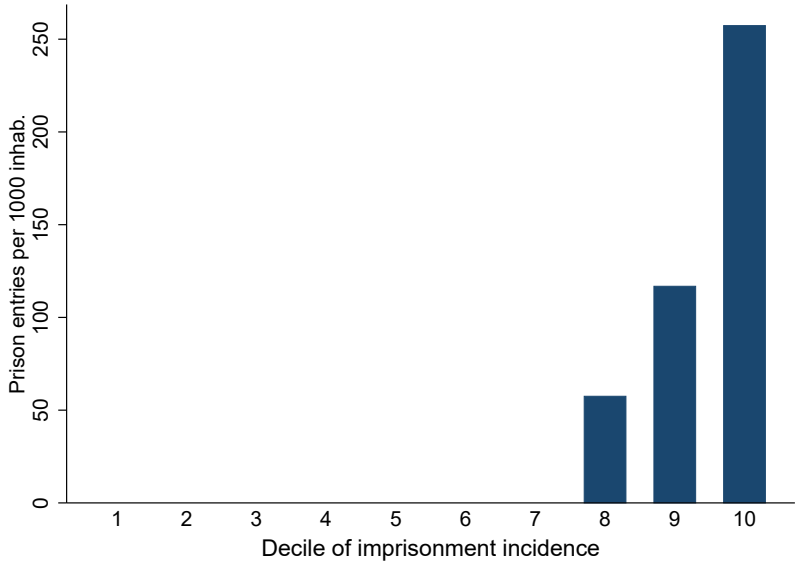
	Property Crimes (1)	Drug Crimes (2)	Violent Crimes (3)	Other Crimes (4)
Treated = 1 × Church opened = 1	-1.164***	-0.505	-0.694*	-0.827
	(0.342)	(0.313)	(0.396)	(0.537)
Treated = 1	2.608***	1.675***	3.022***	5.113***
	(0.323)	(0.252)	(0.356)	(0.460)
Church opened = 1	0.490*	-0.0507	0.266	0.612
	(0.292)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

Notes: The table presents difference-in-differences estimates for the effect of an Evangelical church opening on the number of individuals entering prison. The treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. The outcome is the number of individuals entering prison normalized by the area of treatment and control zones. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

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



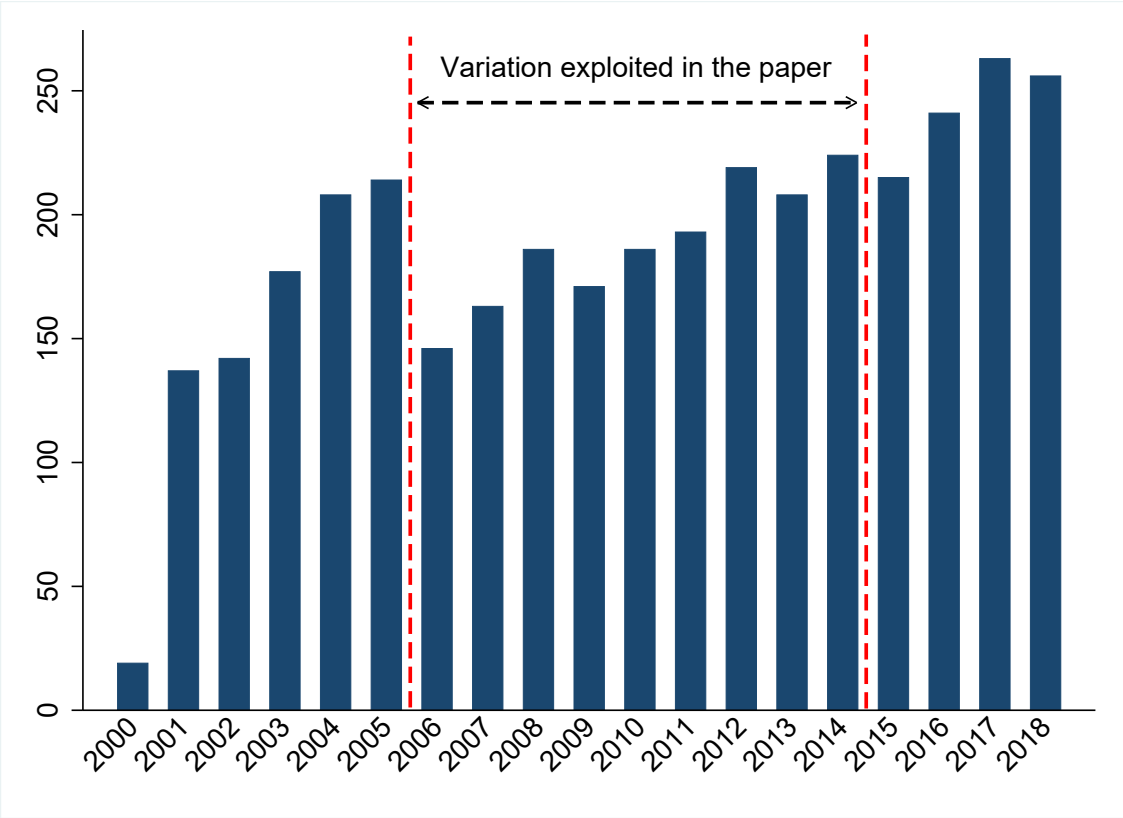
(a) Yearly imprisoned per 1,000 inhabitants (under 30) in Santiago.



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

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

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

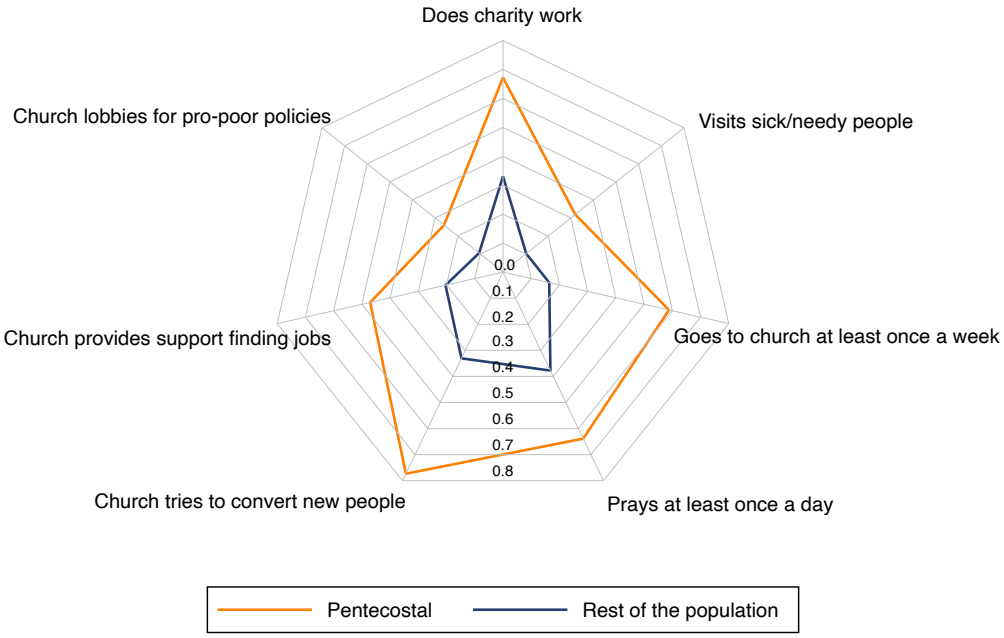


Note: This histogram provides information on the number of Evangelical churches opened yearly between 2000 and 2018. The main analysis conducted in the paper uses the churches opened between 2006 and 2014 because this is the overlapping period with information on the recidivism of individuals.

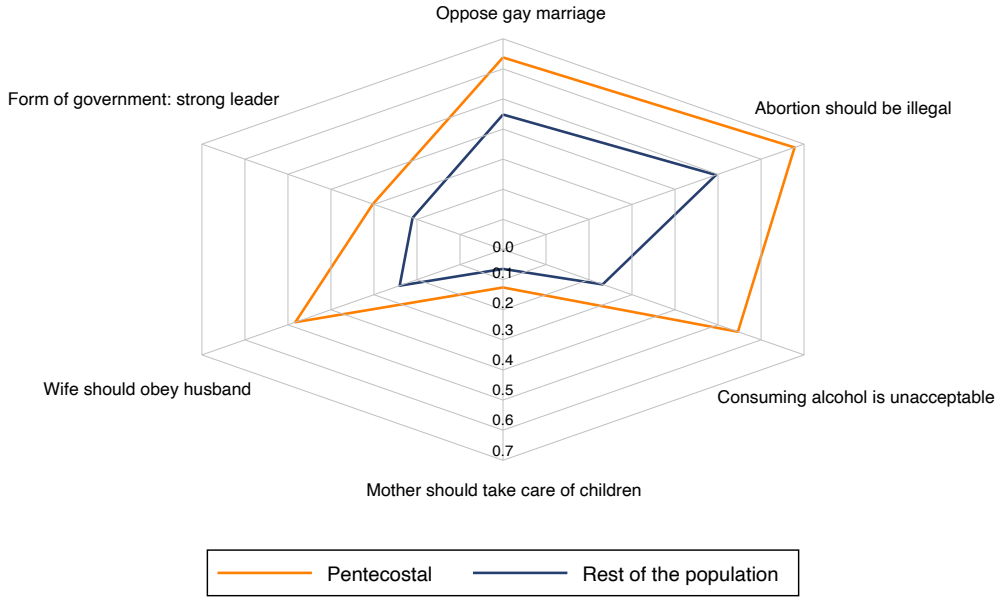
Figure III: Examples of Evangelical Churches in Chile

Note: The graphs are examples of evangelical churches in Chile.

Figure IV: Evangelical Churches Activities and Values



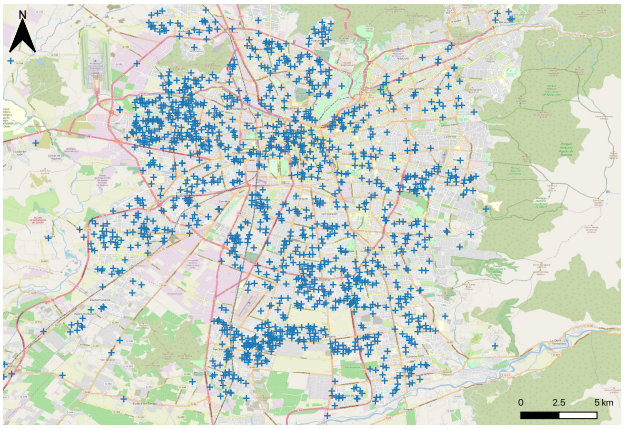
(a) Activities



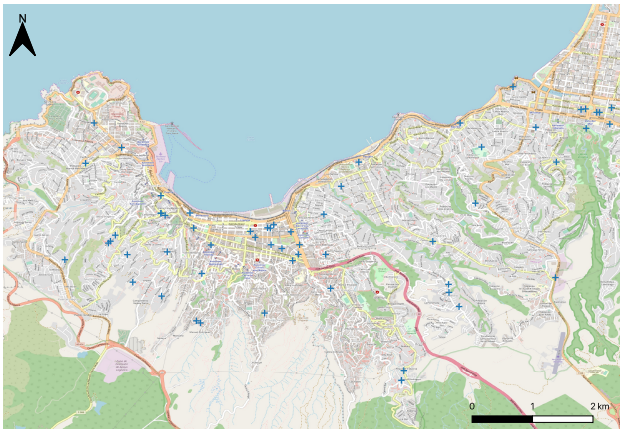
(b) Values

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

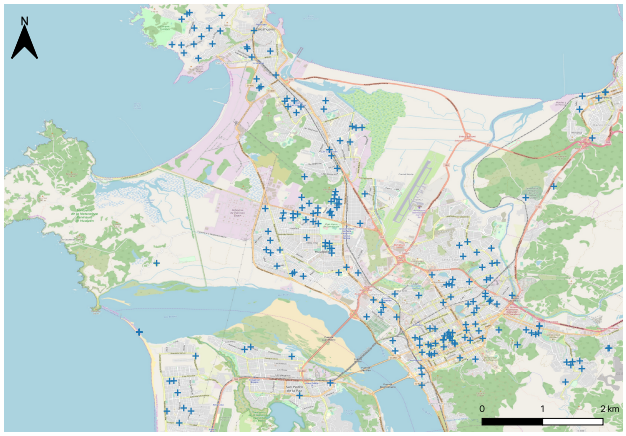
Figure V: Evangelical Churches Opening in Santiago, Valparaíso and Concepción (2000 - 2016)



(a) Santiago



(b) Valparaíso

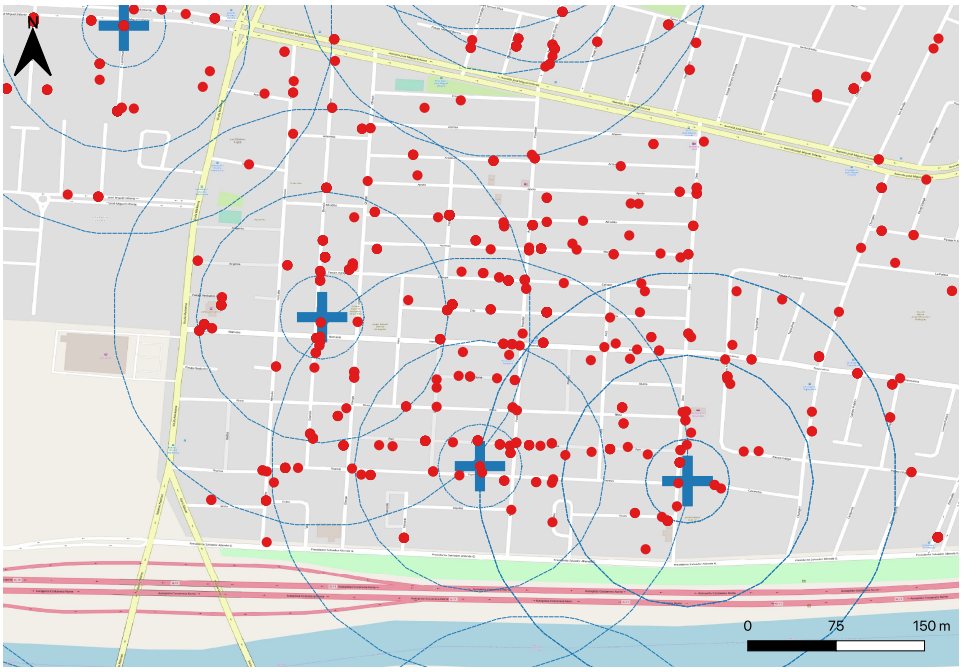


(c) Concepción

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

Figure VI: Treatment and Control Groups Definition

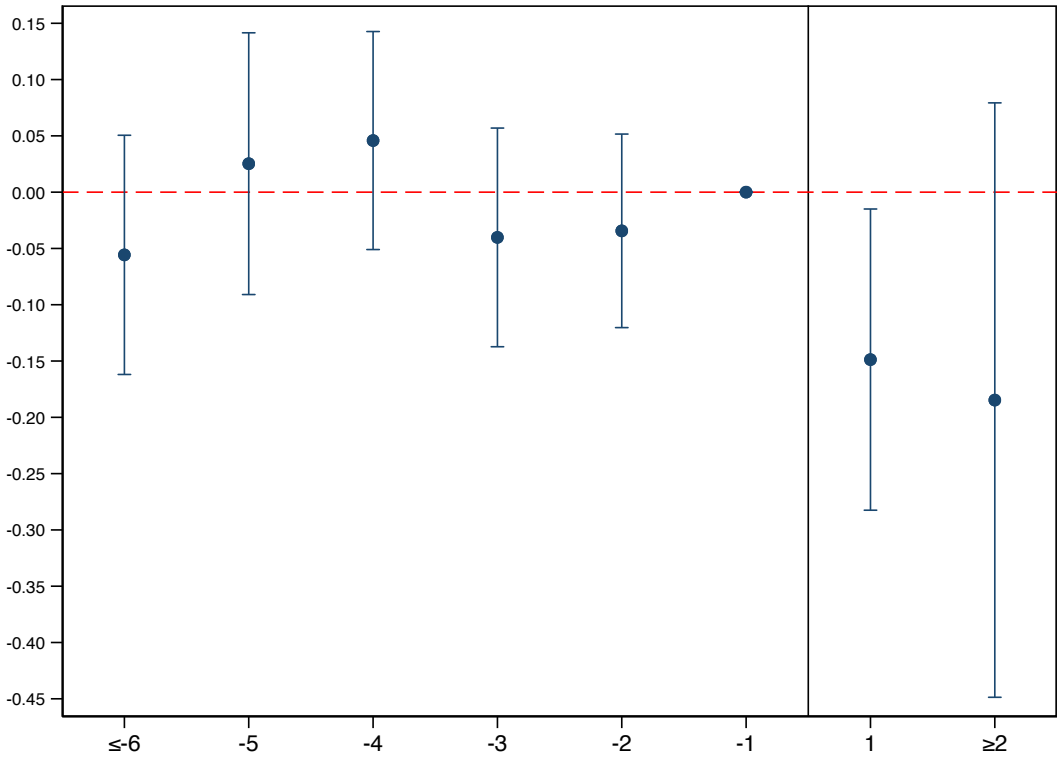
(a) Low Density Area



(b) High Density Area

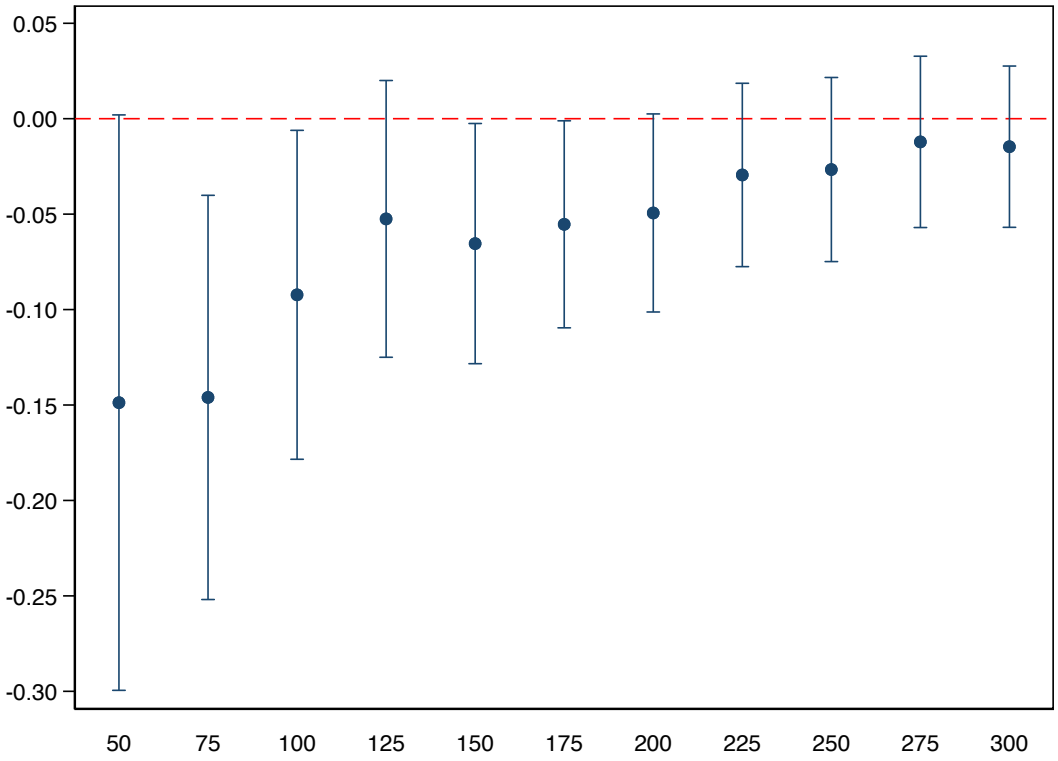
This figure illustrates the definition of treated and control groups used in the paper. The treatment group consists of individuals living within the smallest radius. The control group consists of individuals living on the outer ring. The intermediate ring is a buffer area. Panel (a) illustrates a low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

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



This figure illustrates how the estimated effect of Evangelical churches' openings on recidivism evolves with time.The treated group includes individuals living at 100 meters or less from the church location, while the control group individuals living between 250 and 350 meters from the church. The dots represent the estimated coefficients, and the bars 95% confidence intervals. The sample includes individuals serving sentences that range between a week and 3 years.

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



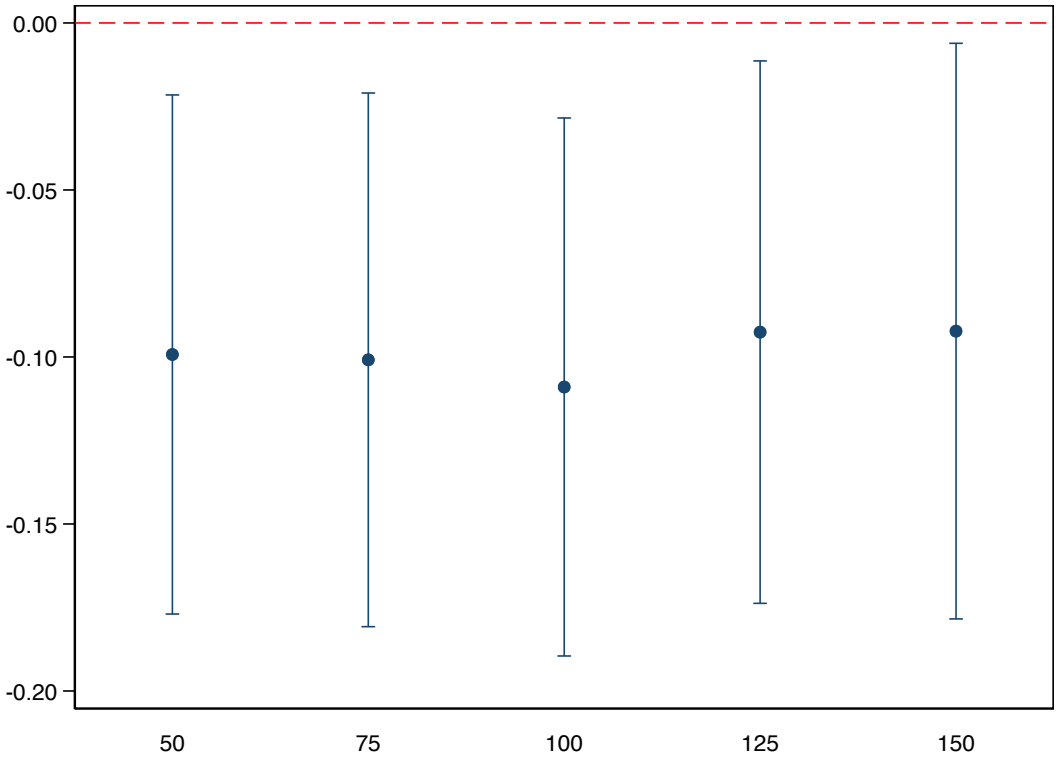
This figure illustrates how the effect of Evangelical churches' openings on recidivism changes depending on the radius used to define the treated group. The dots represent the estimated coefficients, and the bars 95% confidence intervals.

A Robustness Checks

A.1 Re-incarceration and Different Buffers

This subsection illustrates how the estimates vary when changing the buffer radius that defines the distance between treated and control areas. The baseline specification uses a buffer of 150 meters. As Figure A.I illustrates reducing the buffer radius does not generate relevant changes in the estimates we obtain. This is consistent with the results discussed in subsection 5 that show that the effect of a church opening is very local.

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



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

A.2 Re-incarceration: Alternative Specifications

This subsection presents the results of three complementary exercises. First, we estimate an augmented version of specification 1 in which we add neighborhood-specific year fixed effects. If anything, adding these fixed effects makes our estimates larger (see Table A.I).

Second, we estimate specification 1 on different samples in which we eliminate individuals returning to the neighborhood to 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 control group individuals that could potentially have been treated by the church. The results on Table A.II show that independently of the time window used, the estimates remain very stable, suggesting that these cases are not affecting our results.

Finally, we present the results of an exercise in which we change the control group definition. Once more we rely on a difference-in-differences, but this time both treatment and control units are individuals who live at 100 meters or less from the location in which an Evangelical church will open in the future. As before, treated individuals are those who after prison return to a neighborhood in which a church opens between 2006 and 2014. This time, however, control individuals are those returning to a neighborhood in which a church will open between 2015 and 2018. As we do not observe prison sentences after 2015, we once more focus on changes in re-imprisonment rates between 2006 and 2015.

Table A.III summarizes the results of this exercise. As before we find that the opening of an Evangelical church reduces twelve-months recidivism by a little bit more than 7 percentage points. The magnitude of these estimates is very similar to the magnitude of the results we discuss in subsection 5.

Table A.I: Effect of Openings of Evangelical Churches on Recidivism (Neighborhood-specific year fixed effects)

	(1)	(2)	(3)	(4)	(5)
Treated = 1 × Church opened = 1	-0.136**	-0.156**	-0.155**	-0.156**	-0.144**
	(0.068)	(0.067)	(0.068)	(0.068)	(0.068)
Observations	8069	7739	7739	7699	7663
Outcome mean before church opening	0.62	0.62	0.62	0.62	0.62
Demographic characteristics	No	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes
Number of churches within 1km	No	No	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes

Notes: The table presents Difference-in-Difference 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 treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include neighborhood and neighborhood-specific year fixed effects. Demographic controls include age at entry and gender, socioeconomic controls include a set of dummies indicating if the individual reached primary, secondary or post secondary education. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. Family controls include civil status and number of children, and religion refers to a set of dummies that indicate if an individual defines himself as Atheist, Catholic, Evangelical or as a member of other religion (i.e. Other Christian, Muslim, Jew, Jehovah Witness). Finally, "Number of churches within 1km "is the number of Evangelical churches already operating when an individual is released from prison within 1km from his home. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

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

	0 days (1)	30 days (2)	60 days (3)	90 days (4)	120 days (5)	150 days (6)	180 days (7)
Treated = 1 × Church opened = 1	-0.106**	-0.099**	-0.118**	-0.107**	-0.118**	-0.114**	-0.103*
	(0.043)	(0.045)	(0.049)	(0.051)	(0.054)	(0.055)	(0.056)
Observations	9968	9647	9367	9102	8874	8675	8472
Outcome mean before church opening	0.60	0.60	0.60	0.60	0.60	0.60	0.60

Notes: The table presents Difference-in-Difference 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 treated group includes individuals living at 100 meters or less from the church. The control group includes individuals living at between 250 meters and 350 meters from the church. All specifications include year and neighborhood fixed effects. In parenthesis, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

Table A.III: Effect of Openings of Evangelical Churches on Recidivism (Alternative Specification)

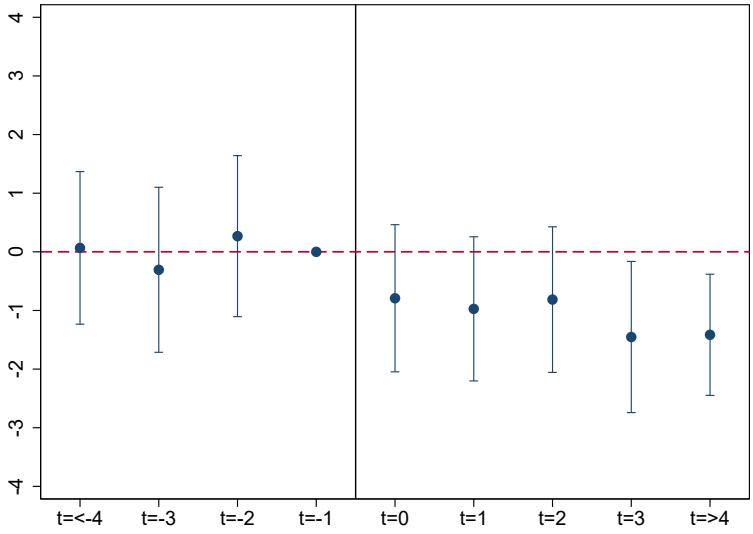
	(1)	(2)	(3)	(4)	(5)
Treated = 1 × Church opened = 1	-0.072*	-0.078**	-0.078**	-0.070*	-0.076**
	(0.037)	(0.038)	(0.038)	(0.038)	(0.038)
Observations	4792	4649	4649	4630	4618
Outcome mean before church opening	0.64	0.64	0.64	0.64	0.64
Demographic characteristics	No	Yes	Yes	Yes	Yes
Criminal history	No	Yes	Yes	Yes	Yes
Number of churches within 500m	No	No	Yes	Yes	Yes
Socioeconomic characteristics	No	No	No	Yes	Yes
Family characteristics and religion	No	No	No	No	Yes

Notes: The table presents Differences-in-Differences estimates for the effect of new openings of Evangelical churches on the probability of returning to prison in the 12 months immediately after being released. The treated group includes individuals living at 100 meters or less from churches opening between 2006 and 2014. The control group includes individuals also living at less than 100 meters from a church opening between 2015 and 2018. All specifications include year and neighborhood fixed effects. Demographic controls include age at entry and gender, socioeconomic controls include a set of dummies indicating if the individual reached primary, secondary or post secondary education. Criminal history controls include the length of the sentence and the number of times an individual has been incarcerated in the past. Family controls include civil status and number of children, and religion refers to a set of dummies that indicate if an individual defines himself as Atheist, Catholic, Evangelical or as a member of other religion (i.e. Other Christian, Muslim, Jew, Jehovah Witness). Finally, "Number of churches within 1km"is the number of Evangelical churches already operating when an individual is released from prison within 1km from his home. In parenthesis, standard errors clustered at the neighborhood level. *p-value<0.1 **p-value<0.05 ***p-value<0.01.

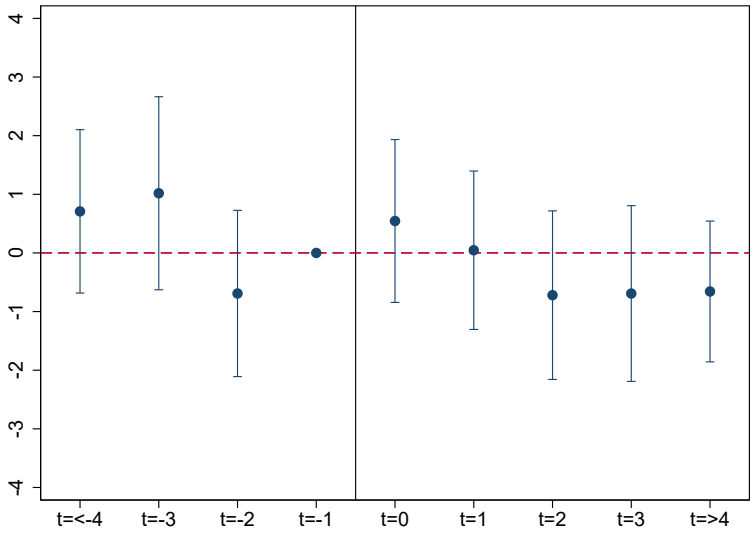
A.3 First Sentences: Event studies

Figure A.II reports the results of the event study analysis 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 beneficial effect of the church increases over time.

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



(a) Property crime: Imprisoned per km2



(b) Violent crime: Imprisoned per km2

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

A.4 Neighbourhood characteristics and community-based organizations in treatment and control areas

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

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

The results of this analysis are reported in columns 1-14 of Table A.IV. For all variables examined the coefficient measuring the difference between treatment and control individuals in 2002, before the opening of the church[26], is small and statistically indistinguishable from 0 at conventional confidence levels for all variables. The church seems however to have increased the share of Evangelists and decreased the share of Catholics although we do not find any further change at endline for the variables examined.

Second, we examine whether the opening of an evangelical church affected the presence of community-based organizations in the neighbourhood. The results of this analysis, conducted at the ring level following the identification strategy described in 6.5, are reported in Table A.IV. They show that the presence of community-based organization was not different in inner and outer rings neither before nor after the opening of the church.

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

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

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

Notes: In columns 1-14, the table presents difference-in-differences estimates for the effect of an Evangelical church opening on demographic and socioeconomic characteristics using the 2002 and 2012 censuses. The treated group 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 column 15, the table presents difference- in-differences estimates at the ring level following the identification strategy presented in section 6.5 for the effect of the opening of an evangelical church on the presence of community-based organization in the neighborhood. In parentheses, standard errors clustered at the neighborhood level (i.e. inner plus outer ring). *p-value<0.1 **p-value<0.05 ***p-value<0.01.

B Additional Results

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

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

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

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

Notes: The specifications presented in the table were estimated using data from the National Survey of Drug Consumption among Secondary Students (2001-2015). Panel (A) presents correlations between being a member of the Evangelical church and drug consumption. Panel (B) presents similar correlations for different measures of parental control. All specifications include grade, year and school fixed effects. Demographic controls include age and gender. Household composition is a set of dummies that indicate different types of households (i.e. both parents presents, only mother, only father, other structure). In parenthesis, standard errors clustered at the school level. *p-value<0.1 **p-value<0.05 ***p-value<0.01.

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