Another Brick in the Wall: How Repurposed Mafia Properties Affect Local Education and the Perception of Mafia

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Abstract

Real estate confiscation is a widespread practice to tackle organised crime throughout European countries. The Italian policy for the confiscation of Mafia assets also allows the social reuse of these properties to regenerate Mafia-ridden neighbourhoods. In this context, the socio-economic effects of reusing Mafia assets are still unexplored, as well as how this policy reshapes beliefs about the State and Mafia groups. Using school-level geo-referenced data from 2015 to 2022, I exploit the staggered reuse of Mafia properties to investigate changes in the local educational patterns and sentiments towards the State and the Mafia. My results reveal a significant decrease in the dropout rate for schools having at least one reused Mafia residential property within their students' catching area. Moreover, I argue how the measured effect is driving a change in students' perception of Mafia and anti-mafia efforts. From a policy perspective, these findings show the importance of reprioritizing public funds to improve human and social capital in Mafia strongholds.

Keywords: Mafia; real estate; Italy; education; NGOs; perception; State.
JEL Codes: R23, H72, I25, K42.
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1 Introduction

The detrimental effects of organised crime on education are well-known and are at the top of many policymakers' agendas worldwide; as in the case of Mafia-type criminal groups, these effects are very localised, requiring policymakers to implement tailor-made public policies to renovate Mafia-ridden communities.

Considering the Italian context, the average rate of students dropping out from high school standed at 12,7% in 2022, which is well above the European average of 9.5% (Children, 2022). Moreover, in most of the historically Mafia-ridden regions, the dropout rate reaches spikes of 14.6% in Campania and Apulia and 18.8% in Sicily (Children, 2022). The negative influence played by the presence of the Mafia on educational attainment has been proven to be driven by several channels: first, juveniles may be directly recruited by Mafia families as a result of direct socialization with Mafia affiliates (van Dijk, Kleemans and Eichelsheim, 2019); second, mainly through the transmission of social ties, as well as behavioural code and environmental beliefs (Kleemans and de Poot, 2008; Farrington and Welsh, 2003), Mafia groups reallocates juveniles' cost-opportunity beliefs in investing in their human capital; indeed, previous research showed that mafia presence decreases tertiary education shares and school attendance (Coniglio, Celi and Scagliusi, 2010; Caglayan, Flamini and Jahanshahi, 2017; Acemoglu, De Feo and De Luca, 2020).

To counter the Mafia capital and power, several direct and indirect policies have been implemented in Italy since the 1980s. While direct policies have targeted the criminal group members, indirect policies aim to build local resilience against organised crime by targeting the behavioural patterns of the most infiltrated communities (La Spina, 2014). The most developed localised indirect policy targeting the infiltrated communities is the Mafia Confiscated Assets' Social Reallocation and Reuse (SRR) implemented nationwide since 1996. Mafia assets, especially real estate, are a symbol of the local Mafia power and its control over the territory as well as being the places where Mafia families meet and carry out criminal activities; once reused for the social needs of the local population under the management of lcoal NGOs, those places not only stop representing Mafia's local strongholds, but they can also become places where the local community can build new, Mafia-resilient social bonds (Falcone, Giannone and Iandolo, 2016).

Whether the SRR policy can boost local social and economic resilience against the Mafia's detrimental effects is still a debated issue. While repressive policies only targeting the Mafia families are still widely supported, it has been often proffered that resilience-targeted policies struggle to combat the strength of Mafia capital and the power of their social and political bonds. In this context, an evaluation of the localised effect of the reuse practices of Mafia properties is still missing, leaving the ultimate effects of the SRR policy unknown. Moreover, an analysis focusing relevant outcomes from juveniles - one

of the fragile groups targeted by the policy itself - has never been carried out.

This lack of investigation might be due to the absence of accessible data recording the social activities carried out in the Mafia real estate reused by the local CSOs. Even though a general description of the confiscated Mafia buildings are shared online by the ANBSC[1], there is no updated and available information about the practices of reuse. For this reason, I created a novel database matching the information provided by the ANBSC with descriptive information about the CSOs managing the reused Mafia real estate, the time of reuse and the activities carried out there for the ten biggest municipalities in the South of Italy. These novel data are the results of merging information that I obtained collaborating with Italian CSOs[2] and the data scraped from the websites of the municipalities which are part of my sample.

In this paper, I investigate the localised effects of the reuse of Mafia real estate on high schools dropout rates, measured as the number of students dropping out from each cohort for each academic year. I compute the distance between Mafia real estate and census blocks[3] and I compute high schools' catchement areas. Under a difference-in-differences approach, I compare schools catching in their area at least one reused Mafia real estate to those that do not.

Under a difference-in-differences design, I find a significant decrease in the number of students dropping out of school due to the fact of having at least one reused Mafia real estate within a specific school's catchment area. My results show that the reuse of Mafia properties reduces the students' dropout rates by about 2.6 percentage points from the fourth year of high school onwards only. Moreover, the results are stronger in Mafia strongholds and driven by low-performing schools. To address any concerning endogeneity issue, I perform a falsification test finding no effect of previous policies on dropout rates. In addition, I perform two robustness checks: first, I find that the effect is not driven by the presence of NGOs; second, I introduce municipality-time fixed effects to check whether the treatment effect is driven by municipality-specific changes across time; in all the specifications mentioned, the results show similar effects on students' dropout rates, allowign to confirm their robustness.

I then look into the mechanisms underlying the treatment effect, identifying three main potential channels. First, I test whether the reuse of Mafia properties play a general regenerative effect at the level of the local neighbourhood, and I find no effect on

[1] the National Agency for the Administration and Destination of Properties Seized and Confiscated from Organised Crime

[2] the anti-Mafia Association *Libera. Associazioni, Nomi e Numeri contro le Mafie* is the biggest nationwide anti-mafia network in Italy which gave me access to their survey data compiled by CSOs from 2016 onwards

[3] On average the census blocks elaborated by Italian Institute of Statistics include between 200 to 400 inhabitants.

dropout rates driven by the combined effect of the policy and the change in rental prices; second, I investigate whether the reuse of Mafia properties specifically offer additional educational support for juveniles, which boosts their incapacitation of joining Mafia groups and their educational performance. I look into the additional effect of the reuse activities which focus on educational activities and I don't find any effect on dropout rates nor on graduation grades. Third, I investigate whether the reuse of Mafia properties indirectly affect the perception of the Mafia and the State in juveniles, reshaping their believes and aspirations. For this purpose, I first employ school-level survey data and show that the reuse of Mafia properties increases the share of students having a negative perception of the Mafie; second, I review the interviews offered by the qualitative literature looking into the social effects of reusing Mafia real estate (Nazzaro, 2021; Falcone et al., 2016).

To the best of my knowledge, this is the first paper providing causal estimates on the effects of the reuse of Mafia properties on local education and students' perception of the Mafia. Prior research established that the confiscation of Mafia properties increases the prices of commercial real estate located nearby as well as firms' performance, turnover and local market competition (Calamunci, Ferrante and Scebba, 2022; Calamunci and Drago, 2020; Ferrante, Fontana and Reito, 2021a; Operti, 2018). Moreover, the reallocation of such properties increases both market and electoral competition (Ferrante et al., 2021a; Ferrante, Reito, Spagano and Torrisi, 2021b). Previous research has exploited the number of confiscated and reallocated Mafia real estate at the municipality level, leaving the policy's neighbourhood-level effects and reuse-specific effects unknown. The closest paper to mine by Boeri, Di Cataldo and Pietrostefani (2023) examines the neighbourhood-level effects of Mafia properties' confiscation and reallocation on housing prices. Their findings indicate that while confiscations lead to a decline in nearby housing prices, reallocation drives their increase. I take a step forward from this paper in two key directions. First, I leverage the staggered effect of the reuse of Mafia properties, demonstrating how this process translates policy into action—unlike reallocation, which remains a purely bureaucratic step. Second, I explore the impact of this policy on educational outcomes and the students' perception of the Mafia, an area that has been entirely unexplored until now. For this purpose, the creation of a novel database of the reuse practices of Mafia properties is an essential contribution. Furthermore, this paper builds on the insights of Nazzaro (2021) and Martone (2020), who offer qualitative case studies on the effect of reusing Mafia real estate in Apulia and Campania, respectively. These studies focus on outcomes related to education and the labor market, and their findings help frame my analysis of how the reuse of Mafia assets can influence social perceptions and provide new opportunities for the youth.

This paper contributes to the literature on the effects of the Mafia on socio-economic outcomes, which builds on the seminal work from Gambetta (1996) revealing how Mafia

families have become providers of private protection and transform social bonds into transactions, fostering distrust in the local community. In this context, previous literature highlighted how the presence of the Mafia affects the Italian economy by slowing economic development, influencing its electoral cycle and weakening the provision of public goods (Pinotti, 2015; Acemoglu et al., 2020; Daniele and Geys, 2015; Alesina, Piccolo and Pinotti, 2019). More specifically, the generational and contextual transmission of social distrust makes it difficult to create new scenarios and aspirations for juveniles who embark on Mafia-related criminal careers (Gambetta, 1996). In this direction, several scholars showed that the historical presence of the Mafia negatively affected the number of students participating in secondary and tertiary education hindering human capital accumulation and the demand for high-skilled workers (Di Vita and DiVita, 2019; Coniglio et al., 2010; Caglayan et al., 2017; Caglayan, Flamini and Jahanshahi, 2021). However, the mechanisms behind the negative impact of the Mafia on education are still unclear, leaving little room to counter this detrimental effect from a policy perspective. This paper contributes to filling this gap by investigating the effect of anti-Mafia policies on education outcomes by exploring how these policies can alter social dynamics in Mafia-ridden communities. Specifically, it investigates how anti-mafia initiatives reshape juveniles' perceptions of the benefits of aligning with the Mafia, offering new role models and incentives to further invest in their education.

Second, this paper speaks to the literature investigating the impact of urban policies on social outcomes and education; although the evidence seems to be mixed, (Nieuwenhuis and Hooimeijer, 2016) estimated that juveniles' educational outcomes are significantly affected by neighbourhood-specific social dynamics, as well as policies aiming at neighbourhood renewal positively affect health, employment and educational outcomes (Ludwig, Duncan, Gennetian, Katz, Kessler, Kling and Sanbonmatsu, 2013; Alonso, Andrews and Jorda, 2019). This study brings light to whether the reuse of Mafia properties can help renew the social capital at the localised level, especially in places where the Mafia have historically infiltrated the social fabric.

Last, this study provides novel evidence on the effects of educational and social policies on juvenile outcomes at the local level, specifically focusing on how these policies shape their perceptions of future opportunities, influencing their decisions and pathways moving forward. Several scholars from experimental economics show that tailor-made localised programmes targeting education can play a transformative role both on education and crime (Heller, Shah, Guryan, Ludwig, Mullainathan and Pollack, 2017; García, Heckman and Ziff, 2019), as well as on students' perception of interpersonal trust and self-esteem (Kenney and Godson, 2002). Additionally, previous research suggests that localised policies can mitigate the influence of parental incentives to involve children in illegal markets, fostering criminality. In this context, policies like Conditional Cash Transfers (CCTs) can increase the opportunity cost of a criminal career, increasing the benefits of pursuing edu-

cation (Sviatschi, 2022a,b). I contribute to expanding the current knowledge in this field by exploring a novel area of criminal activity—the Mafia—and examining how anti-Mafia policies reshape juveniles' beliefs about the opportunity cost between aligning with the Mafia and engaging with the State.

The remainder of the paper is structured as follows: Section 2 illustrates the relevant institutional background, while Section 3 offers a short review of the conceptual framework supporting the mechanisms behind the measured effect; Section 4 describes the data while Section 5 provides information about the empirical strategy and the main endogeneity issues relating to this work; in Section 6, I present the results articulating them in main results, mechanisms and robustness checks. Finally, Section 7 summarises the conclusions and introduces the policy implications related to my findings.

2 Institutional background

In this section, I provide information about the institutional background relevant to my research question. This paper focuses on the changes in high schools' dropout rates explained by the staggered reuse of real estate confiscated from Mafia families located nearby. For this purpose, I first introduce the background of the Mafia Confiscated Assets' Social Reallocation and Reuse (SRR) policy in Italy; second, I provide an overview of the current practices of reusing the Mafia real estate in Italy and why they represent an essential step for the policy's scope.

2.1 The Social Reallocation and Reuse of Mafia Houses (SRR) Policy

Mafia groups have been playing a substantial role in affecting Italy's economy and social development for more than a century. As criminal syndicates, Mafia groups mainly reinforce their power in two ways: through their economic and political resources and their local power and consensus (Sciarrone, 1998). In this context, although some preventive measures against people connected to Mafia groups were introduced in 1965[4], the economic sources of the Mafia's power were neglected till the beginning of the 1980s, making it unfeasible to tackle them. In 1982 the Italian politician from the Communist Party Pio La Torre and the Ministry of Interior Virginio Rognoni drafted a bill proposal to fill this legislative vacuum. In 1976 Pio La Torre, to describe the purpose of their effort, stated that

The path of simple repression - which strikes at the outgrowth, but does not change the

[4]The bill n. 575 in 1965: *Provisions against mafia-type criminal organisations, including foreign ones.*

economic, social and political humus in which the mafia has its roots - did not and could not lead to definitive results.

In September 1982, after Pio La Torre was murdered by the Sicilian Mafia, the bill that he proposed passed becoming the turning point of the Italian legislative efforts to counter organised crime: first, thanks to the novel establishment of the conviction for Mafia association, Mafia groups have become directly liable to be arrested for specific Mafia-related activities under the article 416-bis[5]; second, Mafia groups' wealth has been undermined by the possibility of confiscating their financial and real estate assets even before their criminal conviction (Nazzaro, 2021). As previously mentioned, the Mafia families' real estate represent and symbolise their local power and are primarily used to enforce the idea of their local criminal sovereignty (Operti, 2018; Mosca, 2017). In this context, the La Torre-Rognoni law aims to seize those criminal symbols of power and send a clear message to the local population: the State is stronger than the Mafia and can cut its detrimental resources.

Yet, the Rognoni-La Torre law was only the first step of the Italian legislation against the Mafia: indeed it did not provide any regulations for the management of Mafia assets after their confiscation (Menditto, 2013; Nazzaro, 2021). In 1995, after an intense period of mafia killings, many NGOs massively reacted against Mafia groups by taking part in the biggest Italian network fighting organised crime: *Libera. Associazioni, nomi e numeri contro le mafie. Libera* proposed a new legislative framework - the law 109 of 1996 - to allow the reuse of the confiscated real estate by targeting the urban and social recovery of the most infiltrated areas (Nazzaro, 2021; Falcone et al., 2016). The proposal advanced by *Libera* represented a significant shift from repression-oriented anti-Mafia policies to policies aimed at compensating the local communities and offering alternative role models locally. The NGOs put into practice the beliefs of the Sicilian judge Paolo Borsellino a couple of years before being murdered by the Sicilian mafia in 1992:

> The fight against the Mafia must first and foremost be a cultural movement that accustoms everyone to smell the beauty of the fresh scent of freedom, which is opposed to the stench of moral compromise, indifference, contiguity and therefore complicity.

After the introduction of the law 109/1996, a procedure for the reuse of confiscated Mafia properties was formulated and finalised over the last decades as the last step of the SRR policy. As shown in Figure 1, the Italian SRR policy is made of three main phases: first, the Mafia family get arrested and the Mafia properties are seized and then officially confiscated once the mafia family get convicted; during this stage, the ANBSC[6]

[5]The Rognoni-La Torre bill (n. 646 in 1982) stated that *"Anyone who is part of a mafia-type association consisting of three or more persons shall be punished by imprisonment of three to six years. Those who promote, direct or organise the association are punished with imprisonment of four to nine years."*

[6]the National Agency for the Administration and Destination of Properties Seized and Confiscated from

autonomously decides on the way to repurpose them; there are two main purposes: institutional purposes, where the Mafia properties are kept under the property of the state for governmental use or reallocated to the local authorities for law and order and civil defence forces; and social purposes when the Mafia real estates are reallocated to the local authorities to let the local NGOs running social activities. In our context, we are going to consider the Mafia properties reused for social purposes only.

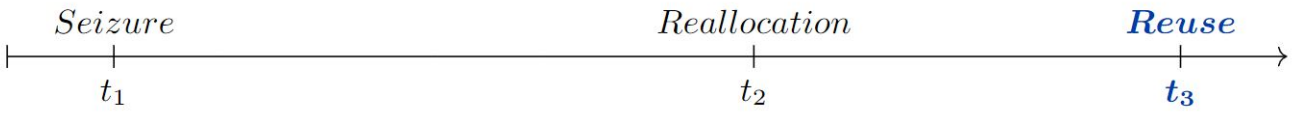
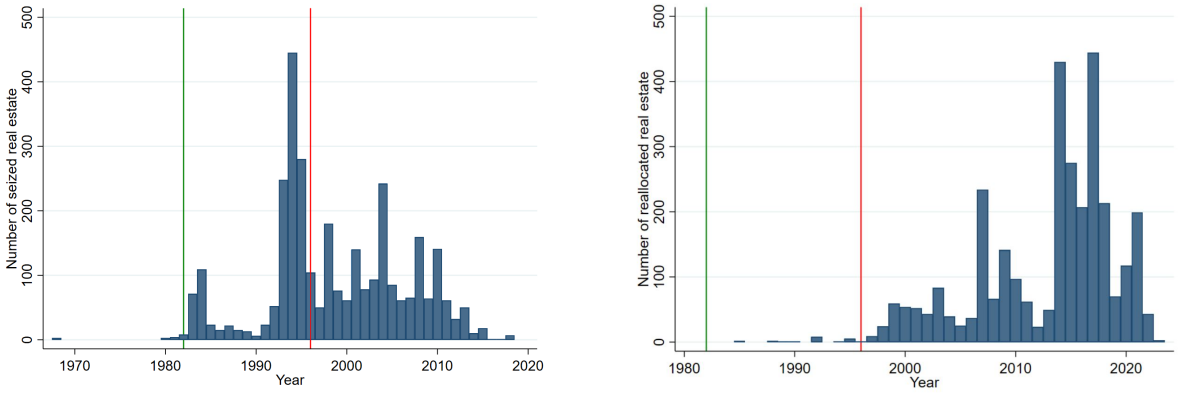


Figure 1 The SRR policy timeline

Moreover, graphs (a) and (b) from Figure 2 respectively show the number of Mafia real estate seized and reallocated in Italy, while Figure 3 shows the reused Mafia real estate. The green line identifies 1982, the year of the Rognoni-La Torre law, while the red line identifies 1996, the year of the Law 196 proposed by *Libera*. While the seized assets seem to have experienced an increase during the 1990s, the reallocations consistently increased in the 2010s. Considering the reused real estate, they also seem to have increased during the 2010s.



(a) Seized real estate **(b)** Reallocated real estate

Figure 2 The seized and reallocated Mafia real estate

Organised Crime (ANBSC) is the public body which considers the structural and criminal factors to determine the scope of the reuse of the Mafia assets. All the decisions are driven by the ultimate scope to compensate the local community (ANBSC, 2019).

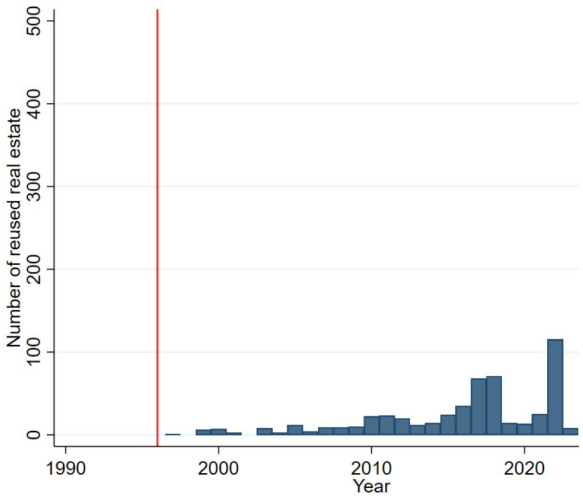


Figure 3 Reused real estate

2.2 The importance of the reusing practice

In this paper, I focus on the last step of the SRR policy: the effective reuse of Mafia real estate. In this subsection, I justify the substantial role played by the reuse of Mafia real estate to address the ultimate scope of the policy.

The existing literature evaluating the socio-economic effects of the SRR policy shows how reallocating Mafia real estate for social purposes plays a role in several outcomes such as housing prices, market concentration and electoral competition (Boeri et al., 2023; Ferrante et al., 2021a,b). However, as explained by Ferrante et al. (2021a), a gap in the literature persists concerning the evaluation of the effective reuse of reallocated mafia real estate managed by local NGOs. Indeed, on one hand, Italian NGOs involved in the reuse practices have been recognized to play an essential role in the enhancement of vulnerable communities' living standards; on the other, the reallocation of properties from the ANBSC to the municipality which has the geographical jurisdiction on the property is a merely bureaucratic step which we can expect to signal the absence of Mafia but does not represent any actual renovation within the social fabric ((Falcone et al., 2016)). Furthermore, to perpetuate their social control, Mafia families usually attempt to occupy or damage their real estate, demonstrating their worries about the possibility for them to getting reused for local social purposes (Italian Ministry of Justice, 2018).

To investigate the differences in the implementation of every single step of the SRR policy, I investigate my raw data and the available literature. According to the legislation in force, the ANBSC has a maximum of 5 months to decide about the scope and the destination of the confiscated Mafia real estate(Menditto, 2013). However, it is difficult

to believe that the real estate will be immediately reallocated to the local authorities for several reasons; the ANBSC (2019) itself highlights that

> One of the most critical aspects of the process for the reuse of real estate is the fact that the property, although requested by a local authority to be used for social purposes, nevertheless remains unused for some time, even a long one, with the risk of deterioration and degradation, in addition to which there is a loss of credibility and trust that affects the entire system of management and valorisation of the property.

First, the bureaucratic slowness of the SRR process characterised by the delayed communication among the main actors plays a role; to solve this, the ANBSC request the municipality to provide a reuse project with detailed information about its scope and the required timing for the project to settle down (ANBSC, 2019). Second, considering the reuse of the properties, it can take time for the local authorities to select and choose based on local competition which actor from the NGOs will manage the real estate. Given this context, my data shows that it takes on average 14 years for Mafia real estate to be effectively reallocated from the time of their seizure and 6 years to be reused from its time of reallocation, as shown in Figure 4. In this context, unlikely previous literature, I will not assume that the effect of the reallocation and the reuse of Mafia properties coincide in terms of their timing, contributing to filling this research gap. For this reason, further investigation into the effect played by the reuse step of the policy is needed.

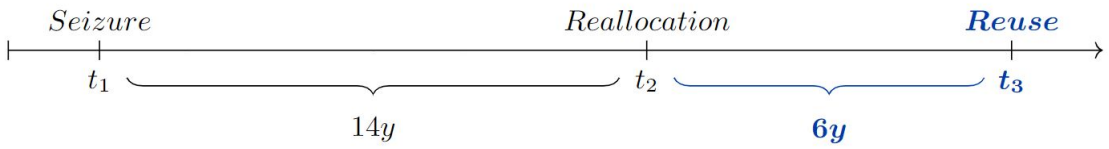


Figure 4 The SRR policy timeline

3 Conceptual framework

In this section, I justify why and how the SRR policy can in practice renew the existing juveniles' educational incentives, especially in Mafia-ridden neighbourhoods. For this purpose, I will leverage previous studies modelling the cost opportunity of education and crime; I will also review the existing literature on how Mafia families affect juveniles locally and profit from their real estate assets. Second, I discuss some of the qualitative and anecdotal evidence provided and collected by the NGOs working in Mafia real estate about

how their activities affect educational outcomes. This Section does not want to present any model prediction but rather motivate from an economic perspective the mechanisms behind the treatment effect discussed later in the paper.

3.1 The localised effects of Mafia families on education

Many scholars have already effectively extended the essential of the (Becker, 1968) model of crime choices made by individuals.

Previous literature developed the Becker model to investigate behavioural patterns of individuals facing a choice mostly between crime and work () and crime and education (). For this discussion, I will focus on the cost-opportunity of investing in one's education. At the same time, the opportunity cost to commit a crime is replaced by the opportunity cost to join the Mafia criminal network. In this context, I will argue that a shock in the strength of the Mafia given by the SRR policy can change the opportunity cost related to this trade-off.

From the supply side, according to the relevant literature in the field of economics of crime (), individuals can face a choice between investing their time in education or in Mafia activities, which respectively yield specific monetary payoffs of W_E and W_M. However, since the Mafia acts in the shadow of the law, an individual who choose to join Mafia activities will face the probability p of getting caught by the police multiplied by the size of the sanction and the costs connected by dealing with the justice P. The payoff from join Mafia activities is then determined as

$$\Pi_M = W_M - p \cdot P$$

Building from the idea that Mafia families act as suppliers of local private protection (Gambetta, 1996), several scholars from both economics and sociology investigated the sources behind the Mafia's accumulation of economic capital, especially focusing on their ability to manage social bonds locally. Sciarrone (1998) describes Mafia groups as *illegal syndicates*, highlighting how Mafia groups enforce informal institutions with the support of their accumulated wealth (economic capital) and their social control over the local territory (social capital). Given that, we can argue that the economic returns to joining Mafia groups and contributing to their criminal business (W_M) will vary based on the monetary gain expected from such a criminal business W_{M_m} but also on a non-monetary gain $W_{M_{1-m}}$ which refers to the accumulation of local power, reputation, and credibility, which are essential for the Mafia to keep its local control (Gambetta, 1996; Sciarrone, 1998). The expected utility of joining Mafia activities will then be given by

$$\Pi_M = (W_{M_m} + W_{M_{1-m}}) - p \cdot P$$

Given that, an individual will choose to engage in Mafia criminal activities whenever the expected benefit from crime is higher than the expected cost of joining the Mafia group.

From the demand side, (Caglayan et al., 2017, 2021) focused on the micro effects of the Mafia on the individual choice of whether to invest in education or Mafia activities. In areas which are historically mafia-ridden, young people often see crime as a viable path to success, as powerful bosses serve as role models. With limited social mobility and high unemployment, many juveniles view the mafia as a shortcut to wealth and influence. Mafias engage youth through two main channels: direct affiliation, appealing to those who aspire to leadership but underestimate the risks, and external collusion, attracting individuals who cooperate with criminal groups without fully grasping the dangers of subjugation or legal consequences. The absence of alternatives reinforces the cycle, making crime seem like the only way forward (Catozzella, 2011; Balestrini, 2004).

3.2 The role of the SRR policy as a shock in Mafia strength

According to the way we defined the pay-off of joining Mafia activities, we can expect any antimafia policy to affect the benefits and the costs of joining Mafia activities. In this context, I focus on the effect of the SSR policy and how it hinders the benefit of joining Mafia activities by reusing their seized properties. (Arlacchi and Chiesa, 1987) developed a model to investigate the relationship between the strength of the Mafia and the strength of the State and civil society. Relying on the assumption that *the real strength of the Mafia lies in its social consensus*, they identify six main domains across which the Mafia can strengthen its legitimacy: (1) economic, (2) social, (3) political, (4) institutional, (5) cultural and (6) moral spheres. According to this model, the civil society has a role on such domains as well and therefore has the agency to counter the Mafia power. The CSOs can impact the perception of the Mafia across those six domains, both acting through direct and indirect public policies. In this context, Baldascino and Mosca (2012) attempted a theoretical interpretation of the value attached to the Mafia real estate - those where the Mafia family lives or run their business - by the local population and by the Mafia family itself. According to the positional good theory (Hirsch, 1976), Mafia real estate assets are luxury symbols to symbolise the Mafia's control over the surrounding area and the surrounding transactions (Mosca, 2017; Operti, 2018). This suggests that Mafia families want to be perceived as role models for the surrounding community to build a wider social

consensus; moreover, we expect that thanks to their power, Mafia rules will be imposed mainly through secrecy and violence on those who don't comply with them (Mosca, 2017; Gambetta, 1996).

According to Mosca (2017) and Douglas and Isherwood (2002), properties in the hands of Mafia families lose their neutral status as real estate; indeed, they are not only occupied using violence, abuse and threat but they are also used to carry out also illegal and destructive activities. In the absence of any localised policy, these properties become one of the main drivers of Mafia local empowerment (Mosca, 2017); but when the SRR policy which allows to seize, reallocate and reuse for social purposes Mafia properties comes into place, we can determine the new payoff of joining the Mafia as

$$\Pi_M = W_{M_m} + W_{M_{1-m}}(R) - p \cdot P \tag{3}$$

where

$$\frac{\partial W_{M_{1-m}}}{\partial R} < 0 \tag{4}$$

What is the effect of the SRR policy on the non-monetary benefit of joining Mafia groups and what are the mechanisms behind it? In addressing the reuse of Mafia-confiscated real estate, local NGOs have been recognized to play an essential role in the enhancement of Mafia-infiltrated neighbourhoods' living standards; NGOs are not only able to provide a significant change in countering poverty and social exclusion, especially in marginalized settings (Chiodo, 2021), but they also improve social cohesion patterns from a behavioural perspective and reduce the sense of distrust injected by the local Mafia families (Falcone et al., 2016). NGOs activities have a positive effect on social relationships through new forms of primary and secondary socialization, especially considering at-risk communities; they can also be identified as health, education, social services, and employment providers for marginalised groups (Mosca, 2017). Thanks to their core aims, NGOs play an important role in the Italian fight against the Mafia: indeed, they can both provide the creation and development of public goods and prevent criminal behaviour by turning the Mafia real estate into new forms of social capital (Baldascino and Mosca, 2012).

4 Data

The final database I use for this paper was built by matching several datasets providing information aggregated at different levels for my outcome variable, my treatment, and several controls.

First, to create my treatment variable - the presence of reused Mafia real estate - I combined the data about the real estate characteristics and the information about the seizure and the reallocation timing with some novel data about the timing of the real estate reuse, and the type of reuse activity. Second, data about schools' dropout rates have been obtained from the Italian Ministry of Education and from Centro Studi Pio La Torre, a local SIcilian NGO. Third, I consider socio-economic information at the street and neighbourhood level about the presence of the CSOs, the presence of Mafia families, migration patterns, and rental prices to control for local areas' characteristics.

4.1 Schools data

My database comprises data from 334 public high schools from the 10 biggest municipalities in the historically Mafia-ridden regions of the South of Italy: Campania, Calabria, Apulia and Sicily. The school data are geocoded covering the period between 2015 and 2022. Information is provided about the number of students enrolling for each year and the number of students graduating from each cohort by the Italian Ministry of Education (2023). According to the Italian educational system, high school lasts five year and students are legally eligible to drop out of education at the age of 16, typically during the enrollment stage between the 3rd and 4th year of their educational cycle. Starting from these data, I was able to compute the dropout rate for each cohort as the difference between the number of students enrolling from the first to the final and fifth year of high school and those enrolling from the second to the fourth year of high from the same cohort. Since the number of students for each cohort in each year is collected at the end of the academic year, I remove from this share the number of students which leave the school in the final year after graduating.

Given that, I computed the share of the students dropping out of high school from the same starting cohort as

$$Dropout_t = \frac{Classes1-5_{t-1} - Graduated_{t-1} - Classes2-5_t}{Classes1-5_{t-1}} \tag{5}$$

where $Classes1-5$ represents the number of students enrolling in each academic year in time $t-1$, $Graduated$ is the number of students leaving the school as a result of successfully graduating in time $t-1$, and $Classes2-5$ represents the total number of students enrolling in the years the first to the fourth in time t considering the same cohort.

Figure 6 shows the map of the distribution of high schools for the municipality of

Naples.

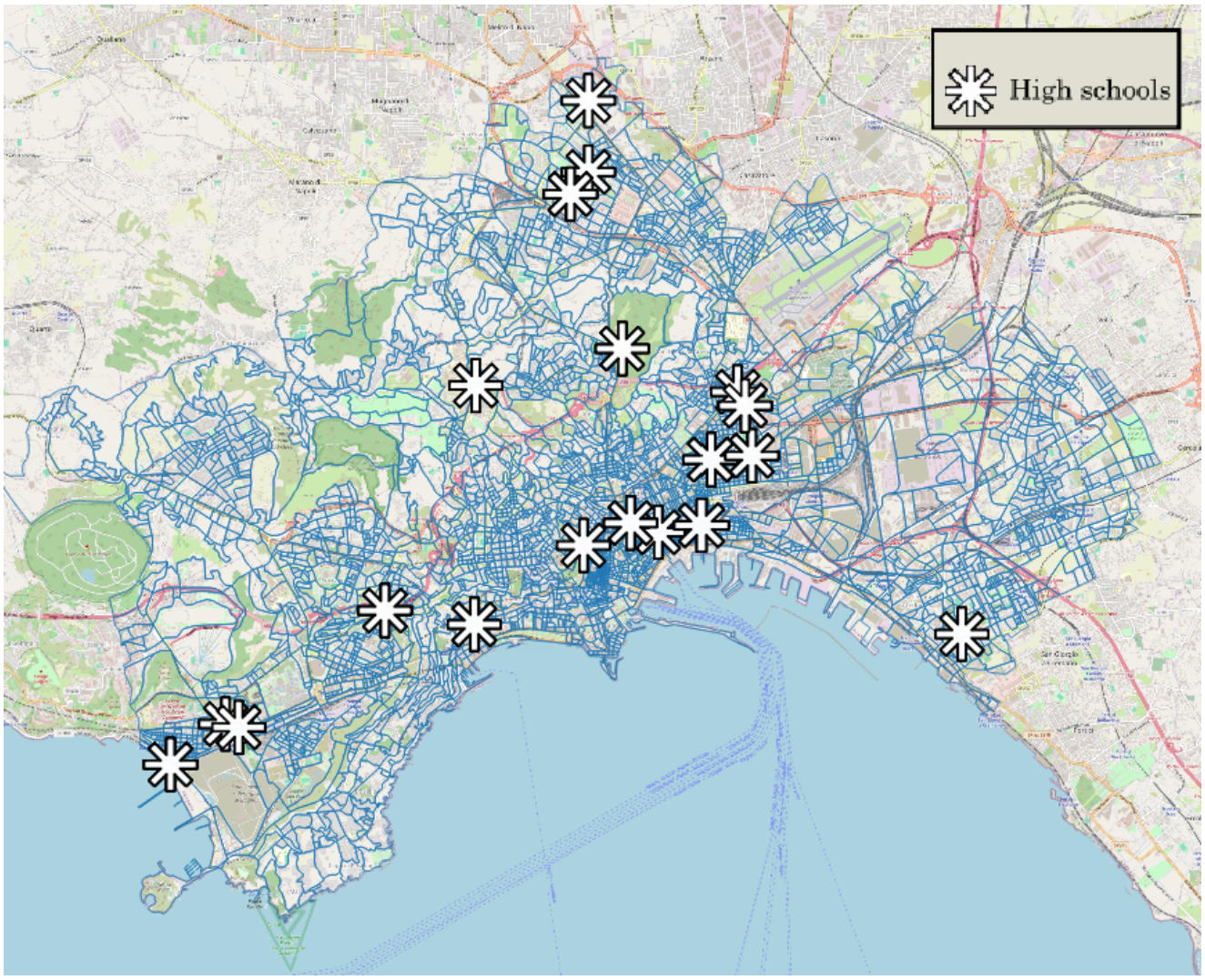


Figure 5 The geographical distribution of high schools in Naples

4.2 Mafia real estate data

The spatial information of the 3119 reused Mafia real estate has been obtained by matching two sets of information: first, I obtained information about Mafia real estate characteristics such as the address, the type of building and the moments of seizure and reallocation of the real estate from the ANBSC (2023); I then decided to geocode the address to run a geospatial analysis, as mentioned in Section 1. Figure 7 shows the spatial distribution of Mafia real estate in Palermo; as the Figure shows, the geographical distribution of the real estate does not follow any particular pattern or cluster. We were able to observe the same for the other municipalities as well.

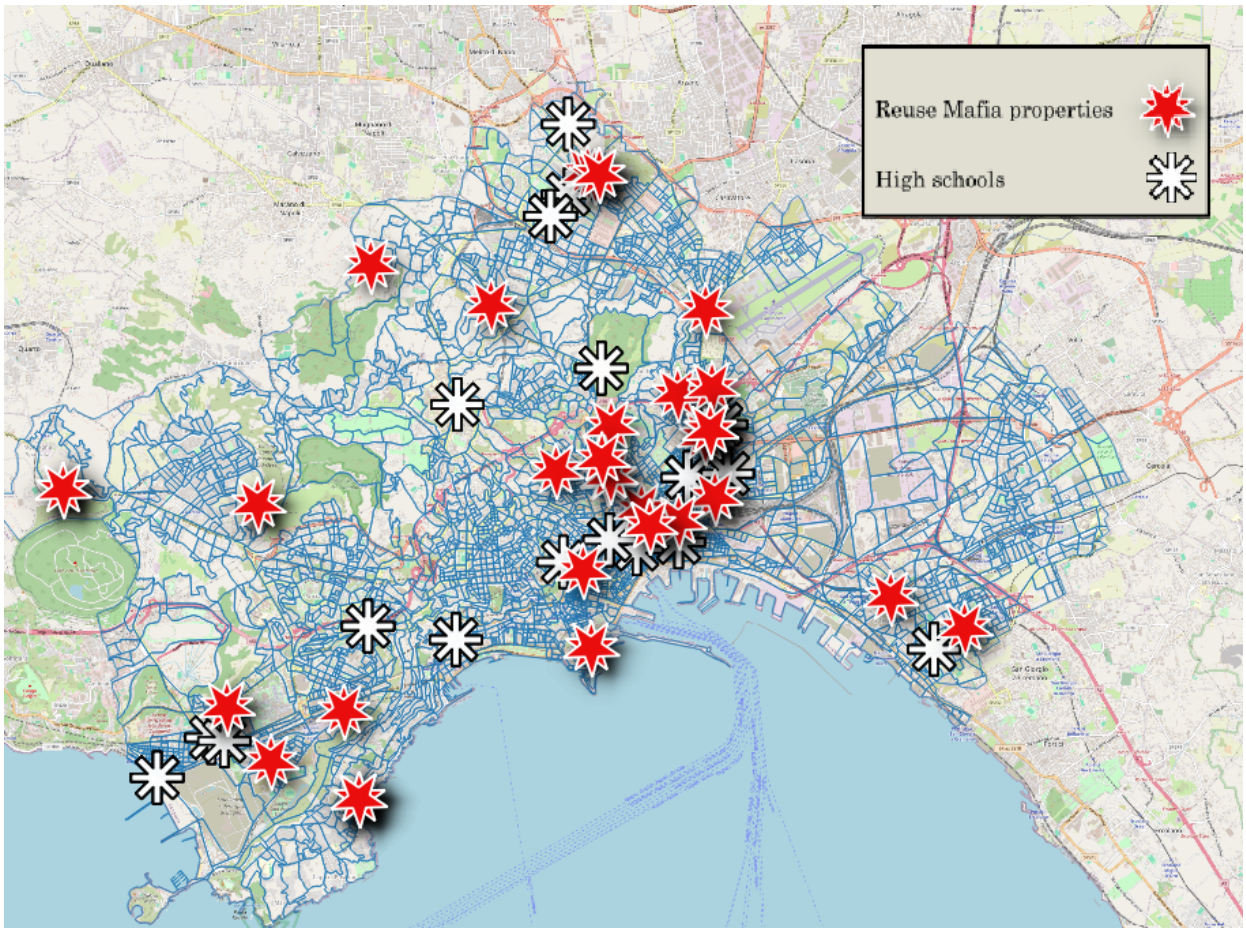


Figure 6 The geographical distribution of used Mafia real estate and schools in Naples

Second, I scraped information from *Libera's* website and collaborated with the national managers of confiscated assets to build novel qualitative information about the timing of the Mafia real estate reuse and the type of reusing activity. After organising the qualitative information for each real estate, I produced dummy variables using text-analysis exact match on R for the most frequently used thematic words in the descriptions I collected; I was then able to identify five main categories of activities[7]: educational, welfare, cultural, employment-related and agricultural activities.
Table 1 summarises the number of Mafia real estate reused for each type of activity and gives a comprehensive description of the categories themselves.

[7]The categories have been adjusted based on those created in Libera reports (Falcone et al., 2016)

Table 1 The types of reusing activities

Activity	Description	Reused Mafia real estate %
Welfare	Places for housing emergency, activities to assist the homeless and people in need, social activities targeting vulnerable groups	0.483
Education	After-school activities and schooling support, socio-educational activities for at-risk juveniles	0.235
Culture	Cultural activities to raise awareness about organised crime, the rule of law and self-responsibility	0.126
Employment	Support and training activities for unemployed people or fragile groups	0.083
Agriculture	Activities in the agricultural industries aiming to sell organic products on the local market	0.074

Lastly, I collected data about a school-level survey running from 2009 to 2023 in 51 of the schools which are part of my sample which was provided by the Sicilian NGO Centro Studi Pio La Torre. The data contains rich questions which allows me to track the students' perception of the Mafia and the State across years, as well as their believes about whether the Mafia can be eventually defeated or not. I employ this data in the last part of the mechanisms analysis.

4.3 Census areas and neighbourhood level data

In addition to the data used to build my treatment and outcome variables, I decided to collect information about the socio-economic conditions of the local community around the schools; indeed, there are many time-invariant and time-variant factors which potentially affect educational outcomes through several different channels. To address this issue, I first collected information about rental prices from 2016 to 2022 from Immobiliare.it as a proxy for the local level of deprivation; second, I scraped from the website of the Italian Ministry of Labour and Social Policies (MLPS) information about each CSO at the local level, such as the address of their headquarter, the time the CSO was created, the type of activity they pursue and the number of people which engage in their activities. As with the Mafia real estate, I then geocoded the CSOs' addresses to be able to map them at the street level. Last, I digitalised on GIS the historical maps about the street-level distribution of Mafia families in Italy from the Italian Antimafia Directorate (DIA) from 2014.

Table 2 presents a comprehensive summary statistics of the main variables which

I use in my analysis considering the outcomes, controls and the mechanisms variables. As expected, Table 2 shows that the dropout rates measured for each year tend to be lower in areas where at least one Mafia property has been reused. Moreover, as expected, Mafia families are more likely to be present in areas where reuses happen, while treated areas also show higher NGOs presence, higher rental prices and a slightly higher student migration.

Table 2 Descriptive statistics

	Reuse = 0		**Reuse = 1**	
	N	mean	N	mean
Outcome variables				
Dropout year 1	339	0.110	1,098	0.103
Dropout year 2	339	0.0156	1,102	0.000621
Dropout year 3	350	0.0617	1,135	0.0693
Dropout year 4	351	0.0578	1,153	0.0437
Dropout year 5	470	0.970	1,372	0.968
Controls and mechanims				
NGOs presence	722	0.389	1,374	0.816
Mafia presence	722	0.620	1,374	0.691
Rental prices	470	7.169	1,374	7.820
Students' migration	351	0.0544	1,144	0.0563

Notes: The descriptive statistics include the number of observations and the average of the considered variables

5 Empirical strategy

In this section, I present the identification strategy to investigate the causal effect of the reuse of the confiscated Mafia real estate on the educational outcomes of high schools located in Mafia-ridden areas. Specifically, this study wants to exploit the plausibly exogenous variation generated by the staggered concession of reuse for Mafia real estate to analyse their effect on the share of students dropping out from for each cohort at the school level.

My empirical design leverages the geographical distance between schools and reused Mafia real estate. Specifically, I compare the schools which are located near the reused real estate to those that are not. Following Boeri et al. (2023), given the tailor-made nature of the policy, we expect to be able to observe a clearer effect at a very localised level. However, differently from Boeri et al. (2023), I decided to build schools' catchement areas instead of implementing a buffer analysis for two main reasons: first multiple buffers

at the level of 500 meters or less would easily overlap generating issues in defining the treatment and interpreting the results; second, students' and families enrolling parents can easily confound the treatment effect if students are enrolled in some specific school without living within the defined buffer. To address the issues related to enrolling preferences, I began drawing schools' catchment areas considering three simple factors: first I consider the distance between each school and each census areas, which seems to be a primary factor influencing enrolling preferences (Mandic, Sandretto, García Bengoechea, Hopkins, Moore, Rodda and Wilson, 2017); this way, I am able to match each census area of each city with their closest high school. Second, I differentiate schools' catchment areas based on the major of study. The Italian educational system includes high schools that focus on different fields of study, preparing students for different tracks: *Licei* are high schools focusing on academic subjects and preparing students to enroll in university, *Istituti Tecnici* provide a more practical and technical education, while *Istituti Professionali* offer vocational training. I then decided to create specific schools' catchment areas for each type of high schools track and each specific track subjects. I then obtained 12 categories of high schools major which can be summarised in 3 high school tracks. Table 3 illustrates the specific subjects offered by each track, as outlined by the Italian Ministry of Education.[8] Last, I decided to exclude from my sample the private high schools, which in the Italian context target the wealthier subgroup of the population and only represent the 5% of the entire country's enrolling preferences (ISTAT, 2021[9]).

Table 3 The types of high school tracks

HS Tracks	**Description**	**High Schools %**
Licei	Provide students with the skills and knowledge for higher education in classical, scientific, economic, linguistic, and human studies.	0.411
Istituti Tecnici	Provide practical and technical skills related to key sectors for the country's economic and productive development.	0.371
Istituti Professionali	Provide vocational skills for arts, trades, and professions that are strategic to the country's economy.	0.101

As a result of this process, I built 1,096 school catchment areas which are, on average, associated with five distinct census areas. In order to address my empirical analysis, I will consider schools catchement areas as treated whenever at least one Mafia property get

[8]The organisation of Italian high schools can be found at this website: https://www.mim.gov.it/scuola-secondaria-di-secondo-grado.

[9]information about the share of students enrolling in private high schools can be found as a part of the ISTAT database http://dati.istat.it/Index.aspx?DataSetCode=DCIS_SCUOLE

reused within its boundaries in a specific year. Figure 8 provides a spatial visualisation of the schools' catchment areas of vocational high schools in Naples, where the boundaries of the schools' catchment areas are highlighted in different colors.

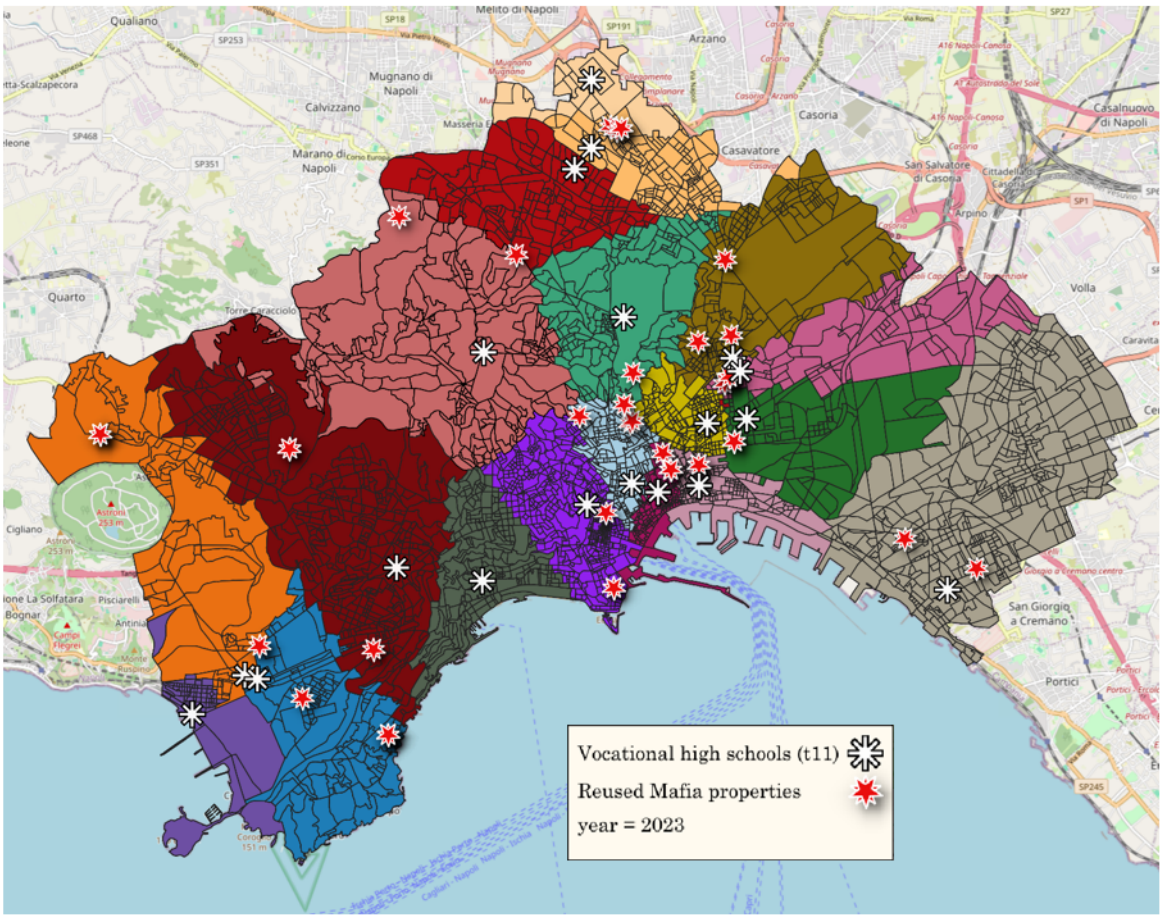


Figure 7 Schools catchment areas for vocational high school track 11 *Licei* in Naples

In order to explore the spillover effects of reusing Mafia real estate on the dropout rates of the schools located nearby, I estimate a TWFE model under a triple difference-in-differences (DDD) research design. The main specification is

$$Dropout_{s,c,n,t} = \beta_1 SRR_{s,t} + \beta_2 X'_{s,c,n,t} + \delta_s + \theta_t + \epsilon_{s,c,n,t} \tag{6}$$

where $Dropout_{s,c,n,t}$ is the share of students dropping out of high schools s in census area c, neighbourhood n, measured in year t; $SRR_{s,t}$ is equal to 1 if there is at least one Mafia real estate within the school catchment area in year t + n after the reuse. Since the treated schools are treated at different points in time, the coefficient of interest β_1 captures the difference in the share of students dropping out of high school between schools which

catches in their enrolling area at least one reused Mafia real estate and those who do not or not yet, by also exploiting the variation in localised Mafia presence. $X_{s,c,n}$ is a vector of controls at the school, census area and neighbourhood levels. Regarding controls, in my main specification I include only a proxy the migration of students at the neighbourhood level measured as the average dropout of the schools in such a locality. Additionally, δ_s captures the school fixed effects and θ_t, captures the year fixed effects. Standard errors are clustered at the school level.

Although the fixed effects and the controls address the expected sources of endogeneity, Equation (1) might be biased due to the limitations of the TWFE model in measuring the treatment effect with a staggered option in a unique coefficient, as shown by the recent literature about the TWFE limitations in the presence of heterogeneous and dynamic treatment (Goodman-Bacon, 2021; Sun and Abraham, 2021; Callaway and Sant'Anna, 2021). Among the new alternative models for the estimation of a DiD, I decided to apply the one proposed by Sun and Abraham (2021), which creates an interaction-weighted estimator of the average treatment effect (ATT) including dummies for the interactions of each cohort with their treatment times.

5.1 Endogeneity issues

Unpacking and understanding the relationship between the last step of the SRR policy and the dynamics of dropout rates represents a challenging task due to several endogeneity concerns.

The two major endogeneity concerns regarding the treatment respectively relate to the previous presence of civil engagement and the level of municipalities' compliance. First, even though the policy explicitly targets Mafia-ridden areas and the social activities are aimed at building forms of anti-Mafia resilience, one could argue that Mafia real estate tend to be reused in areas with higher social cohesion and civil society activity, introducing a selection bias. For this reason, I preliminarily decided to show the geospatial correlation between the presence of CSOs and the presence of reused Mafia real estate plotting the CSOs and the reused Mafia real estate at the street level on GIS. Figure 9 shows the distribution of reused Mafia real estate and the presence of CSOs within Palermo city centre. This is also evident for the other municipalities part of my sample. Moreover, the treatment variable and the time-varying presence of CSO at the census block level present a correlation coefficient of 0.16, denoting a weak positive correlation. According to my data, there is not a clear positive correlation between the presence of CSOs and the presence of reused Mafia real estate from a geographical point of view, supporting the reliability of my empirical strategy.

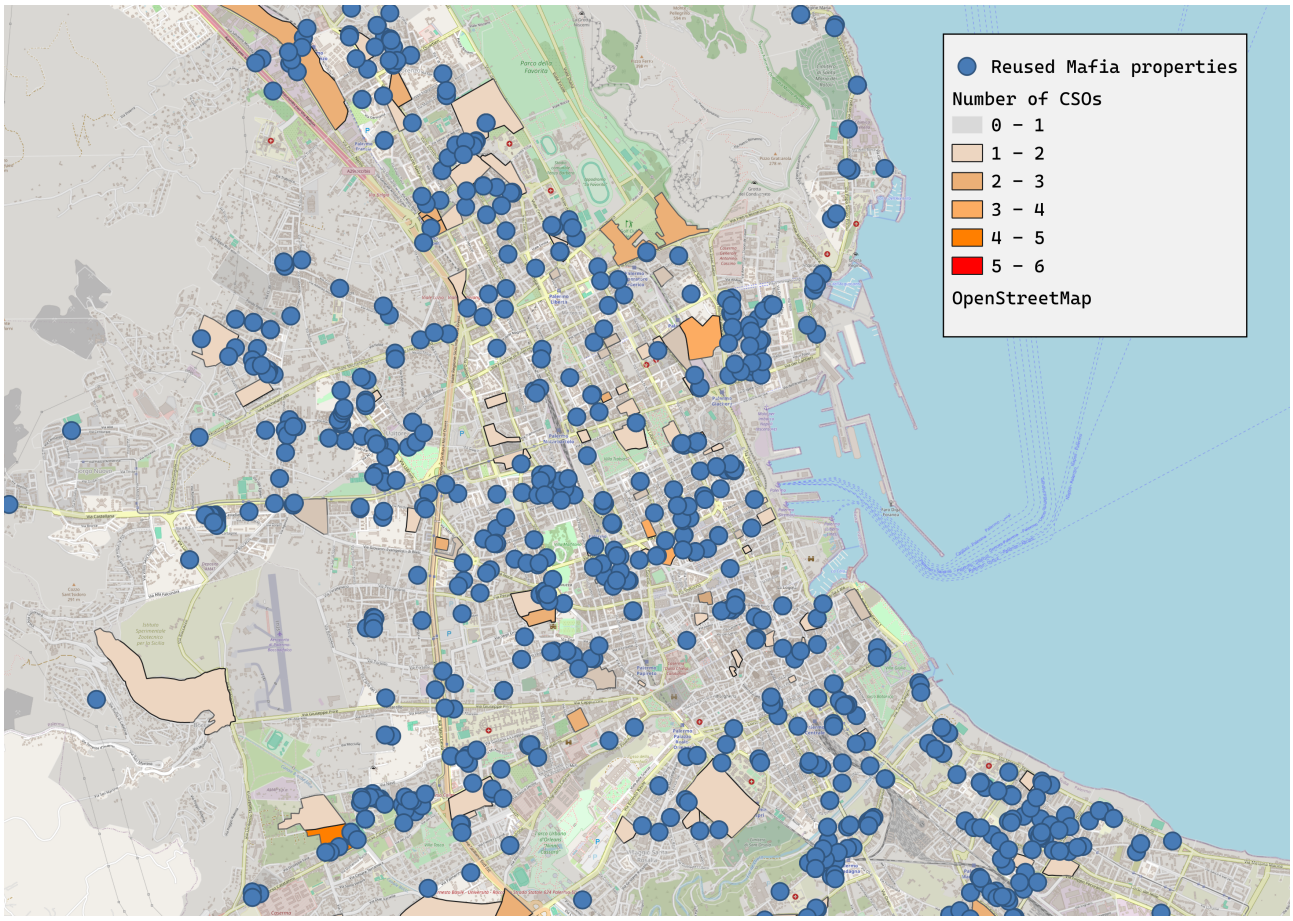


Figure 8 CSOs and reused Mafia real estate spatial distribution in Palermo city centre

Second, during the last years, *Libera*'s reports (Falcone, Illustrazione, Giannone, Mennella, Ferrante and Martone, 2022, 2021), have delivered a vast monitoring work on the process concerning the reuse of Mafia real estate, showing that many municipalities are not fully compliant when it comes to share the list of the reallocated Mafia real estate within their administrative boundaries, even though they are bounded by the law in doing so[10]. Then, having potentially more compliant municipalities as a part of the sample would cause a selection problem in the treatment as they might present a higher number of reused Mafia real estate; In 2022, *Libera* ranked the Italian municipalities based on their compliance in publishing online the essential information about the reallocated Mafia real estate based on several indicators[11]; the consider as *compliant* the above-median municipalities of their compliance index, so those with a rank equal or major to 50% compliance. In my sample, I was able to identify five municipalities in my sample as non-compliant: Taranto, Salerno, Palermo, Messina and Siracusa. For these reasons, I decided to sum-

[10] Antimafia Code art. 48, comma 3, lett. c

[11] The report built the ranking on three main types of indicators: the presence of a list of the Mafia real estate online; description of the Mafia buildings; publication of notices for the allocation of confiscated properties to local NGOs (Falcone et al., 2022).

marise the share of Mafia real estate which have been reused after the reallocation by splitting the sample and comparing compliant and less-compliant municipalities.

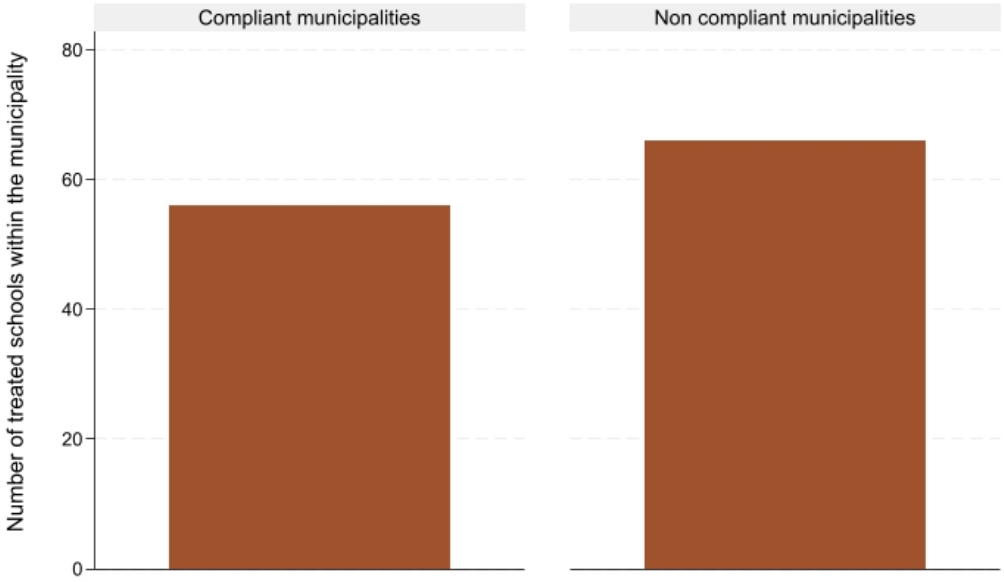


Figure 9 Share fo reused Mafia real estate for compliant and non-compliant muncipalities

According to Figure 10, we cannot argue that municipalities considered as *compliant* show a higher share of reused Mafia real estate. Moreover, there is not much difference in terms of timing since the average time between the reallocation and the reuse of Mafia real estate is 5.5 years for compliant and 5.8 years for non-compliant municipalities. Thus, we can argue that this supports the choice of my empirical strategy as well. To confirm the discussed descriptive statistics, I will provide additional robustness checks in Section 7.

6 Results

In this section, I present the results of to the effects of reusing Mafia real estate on the students' dropout rate from high schools in the South of Italy. As hypotised, having at least one reused Mafia real estate within school catchment area decreases the dropout rates of schools located nearby; moreover, I find that the effect is stronger where there is at least Mafia family active in the neighbourhood in the first year of my sample, and the effect is driven by low-performing schools. In terms of mechanisms, I find that there is not significant additional effect of the reuse where rental prices are higher or lower, nor where more Mafia properties are reused for educational purposes. As robustness and falsification tests, I show now effect of the previous step of the policy on the dropout rates and that the effect is not driven by places with more NGOs or where the municipality is

fully compliant with the SRR legislation. All these results are robust to the inclusion of the school fixed effects, the time fixed effects and controls.

The rest of the section will be discussed as follows: first, I will discuss the main result of the DiD specification and the related heterogeneity. Second, I will show some evidence supporting the expected mechanisms behind the main effects; finally, I will provide several robustness checks to exclude any source of endogeneity.

6.1 DiD specification

My main results focus on the effect of the SRR policy on the dropout rates of schools located nearby. I created a dropout measure for each academic year to following the same cohorts and look into high school year-specific effects, considering that students are legally allowed to dropout only when they turn 16.

Table 4 reports the estimated coefficients of the effect of reusing Mafia real estate on the school-level dropout rates under a DiD design. Column (1),Column (2) and Column (3) show that having at least one reused Mafia property within the school's catchment area does not have a statistically significant effect on the rate of students dropping out, showing also very low coefficients. Looking into the dropout out measured in the fourth and in the last year of high school, we find a decrease in the share of students dropping of about 3.9 percentage points in the fourth year and 0.9 in the fifth year. The results are statistically significant at the 10% level. This result follows the idea that the treatment affect relatively significant rates of dropout which start being measured in the fourth year, when the entire students population has just turn 16.

Table 5 shows the effect of reusing Mafia properties on the dropout rates before and after the fourth year. Columns (2), (3) and (4) respectively show the effect of having at least one reused Mafia real estate within the school catchment area on the dropout rates measured at the end of the 1st, 2nd and 3rd year respectively. The analysis shows that there is no statistically significant effect of the treatment on these specific dropout rates. On the contrary, the treatment seems to significantly reduce the dropout rates measured at the end of the 4th and final year of high school. Indeed, Columns(5) and (6) respectively show that the reuse of nearby Mafia properties reduces the 4th year dropout of about 9.1 percentage points and the 5th year dropout of about 3.3 percentage points. This confirms the previously stated hypothesis that a reductive effect of the treatment is clearly visible when students are legally allowed to dropout out, so then when they turn 16 years old between the third and the fourth year of high school.

Table 4 Impact of reusing Mafia real estate on the share of students dropping out from high schools by course year

	(1) Dropout year 1	(2) Dropout year 2	(3) Dropout year 3	(4) Dropout year 4	(5) Dropout year 5
SRR = 1	0.00632	-0.00133	-0.0113	-0.0393*	-0.00950*
	(0.0218)	(0.0261)	(0.0206)	(0.0228)	(0.00561)
Observations	1,437	1,441	1,485	1,492	1,493
Number of schools	282	282	292	292	292
clustered SE	yes	yes	yes	yes	yes
time FE	yes	yes	yes	yes	yes
school FE	yes	yes	yes	yes	yes
students' migration	yes	yes	yes	yes	yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

In order to investigate how the dropout rates evolve and robust this intuition, I run the same exercise considering the dropout happening before and after the students turn 16. Panel A from Table 5 shows that there is no statistically significant effect of the reuse on the dropout happening before the fourth year, showing also very small negative coefficients. However, Panel B Column (5) reports a decrease in the dropout rates of about 2.6 percentage points when we consider the dropout occurring during the fourth and the fifth year of high school. As shown in Table, the results are robust to the introduction of each specific fixed effect and the inclusion of students' migration as a control.

Table 5 Impact of reusing Mafia real estate on the share of students dropping out from high schools by course year

Panel A	(1) Dropout 1-3	(2) Dropout 1-3	(3) Dropout 1-3	(4) Dropout 1-3	(5) Dropout 1-3
SRR = 1	-0.00517	-0.00517	-0.00566	-0.00892	-0.0103
	(0.00613)	(0.00613)	(0.00655)	(0.00815)	(0.00700)
Observations	1,433	1,433	1,433	1,433	1,433
Number of schools	281	281	281	281	281
clustered SE		yes	yes	yes	yes
time FE			yes	yes	yes
school FE				yes	yes
students' migration					yes

Panel B	Dropout 4-5	Dropout 4-5	Dropout 4-5	Dropout 4-5	Dropout 4-5
SRR = 1	-0.0184**	-0.0184**	-0.0157*	-0.0282**	-0.0257**
	(0.00851)	(0.00851)	(0.00864)	(0.0127)	(0.0115)
Observations	1,487	1,487	1,487	1,487	1,485
Number of schools	293	293	293	293	292
clustered SE		yes	yes	yes	yes
time FE			yes	yes	yes
school FE				yes	yes
students' migration				no	yes

Notes: Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

According to the DiD design, my results rely on the parallel trend assumption (PTA), meaning that in the absence of the treatment, we would expect to see the rate of dropout of both treated and untreated schools to follow a similar trend. To support this assumption, I built an event study to visualize the estimates from Column (5) from Panel B of Table 5, as Figure 11 shows. I created event dummies before and after the treatment considering the years before and after the first reuse occurring within the school catchment area, where the year zero corresponds to the first year of treatment. All the coefficients preceding the reuse timing are insignificant and very close to zero, suggesting that in the absence of treatment, the treated and the control groups can be described as comparable with no significant anticipation of the treatment. After the treatment starts, it is possible to see a slow decline for the coefficients representing the effect of the policy on the dropout rate.

A clear negative effect only appears one years after the treatment, while a significant negative effect takes at least 5 years to be visible. According to my interpretation, this can be due to the adjusting time local CSOs need to settle down and to start the project after they are allowed to reuse for social purposes the property.

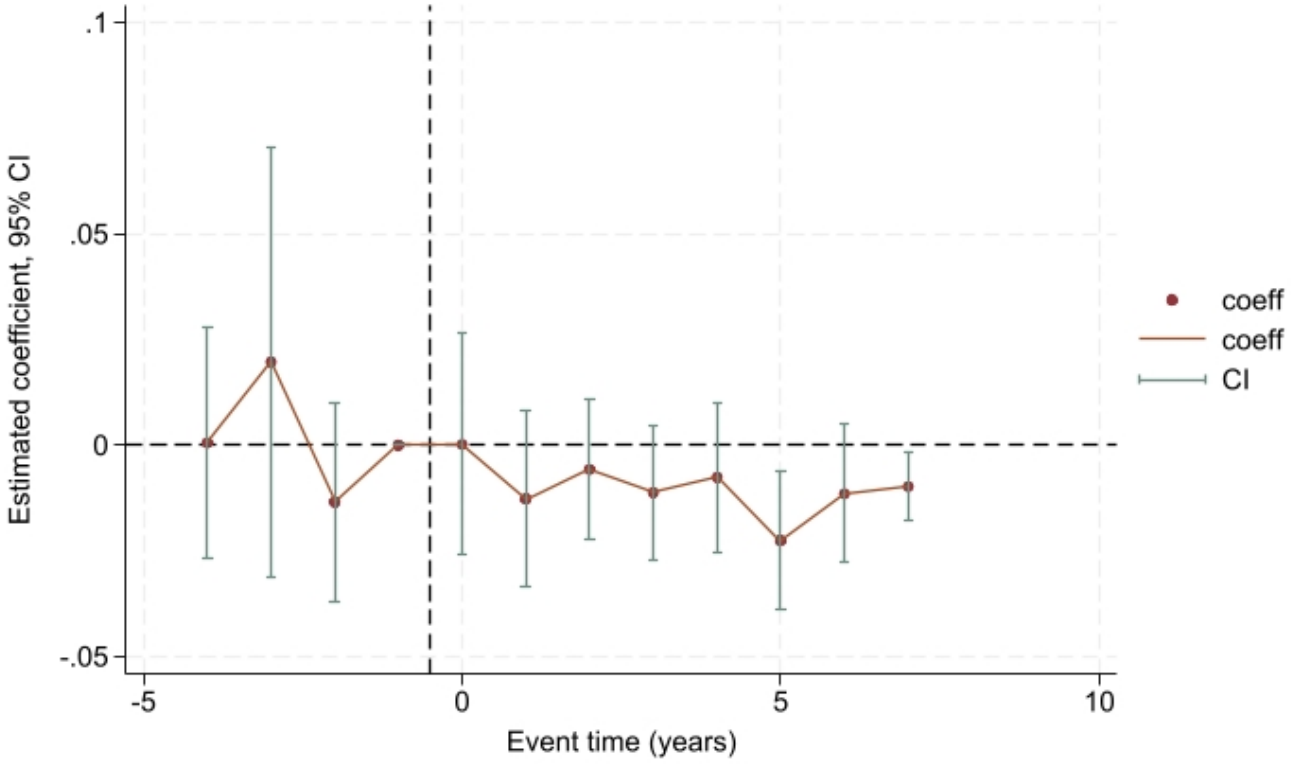


Figure 10 Event study for the total dropout occurring in year 4 and 5

6.2 Heterogeneity

Given that the main purpose of the policy is to restore the communities which were previously infiltrated by Mafia families and renovate social bonds targeting fragile and deprived communities, I perform a heterogeneity analysis considering several factors: the level of Mafia presence, and the level of school quality.

6.2.1 Mafia presence and quality of schooling

Given that the reuse of Mafia real estate is not only an urban and development-related policy but mainly an antimafia policy, I expect it to produce a larger impact on schools where the more fragile and at-risk-of-dropping-out students are more vulnerable to the Mafia's effects. To ease the interpretation of the results, I create a dummy distinguishing between census blocks with no Mafia families at all and census blocks with at least one

Mafia family before the start of my treatment. Figure 12 reports on the left the effect of the reuse of Mafia properties in areas which were not previously infiltrated and on the right we find the effect of the treatment on the previously infiltrated areas. As we can see, while we don't see any significant effect considering specifically non-infiltrated communities, we find dropout rates in Mafia-infiltrated areas decrease consistently. More specifically, we find a significantly decrease in dropout rates around the second year after the reuse is put in practice, highlighting how in Mafia places the reuse represent a signal of renovation in the community.

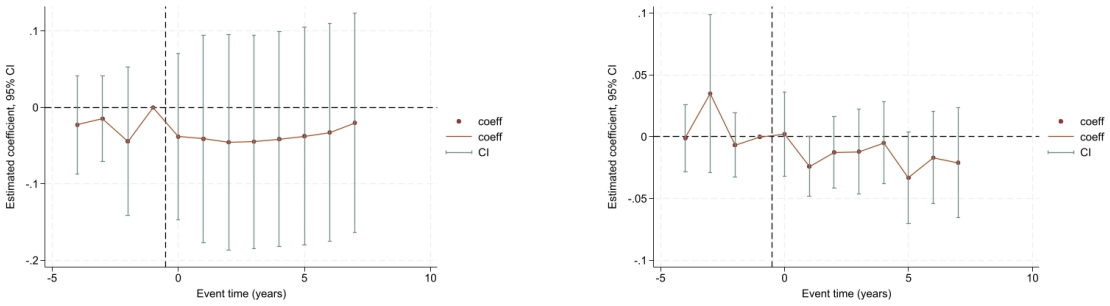


Figure 11 The effect of SRR on dropout rates by Mafia presence: Mafia equal to 0 (left) and Mafia equal to 1 (right).

Second, since the policy explicity targets vulnerable households and juveniles, I decided to investigate the heterogeneous effect of the policy on dropout rates based on the quality of schools.

Employing data about the schol-level graduation grades, I create a baseline dummy identifying schools having a below or above-median rate of students graduating with the minimum grade assigned during the final diploma's assessment. Figure 13 reports the effect of the reuse on high-performing schools on the left and the effect of reuse on low-performing schools on the right. The event studies show that the effect of the reuse is particularly decreasing the dropout rates for low-performing high schools, while it seems to be no strong effect on high-performing schools.

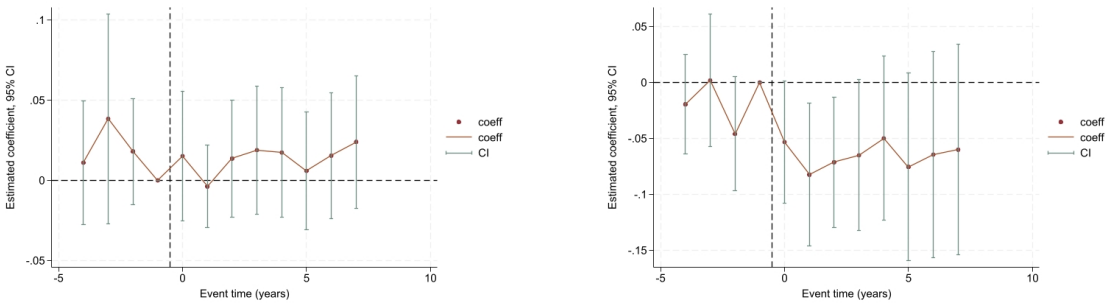


Figure 12 The effect of SRR on dropout rates by quality of schooling: below median quality (left) and above median quality (right).

6.3 Mechanisms

The estimates I discussed show that having at least one reused Mafia real estate within a specific school catchment area creates on average a positive spillover effect on the students' incentives on education and reduces dropout, especially considering the targeted Mafia-ridden neighbourhoods and low-performing schools. In this section I want to explore the mechanisms driving the findings as follows: first, I will empirically discard the possibility that the effect is driven by a general renovation in the neighbourhood; second, I attempt to understand the role played by the Mafia real estate reused for educational purposes and for community purposes in increasing educational incentives and potentially education outcomes. Last, I will investigate the indirect effects of the reuse on students' educational incentives, specifically via the perception of the Mafia and the State; in this last case, I will also recall the anecdotical evidence about the work of CSOs on education and the conversations I had with several social workers.

6.3.1 Neighbourhood effect

From a conceptual and practical point of view, whenever a confiscated Mafia real estate gets effectively allocated to a local NGO and reused for social purposes, we can expect that the general level of social and educational activities carried out in that specific neighbourhood will increase. In this context, if the effect of the policy is mediated by a local renovation of the local area, we would expect the change in rental prices moving together with the effect given by a reused Mafia property. For this purpose, I then interact the effect of the reuse of Mafia properties with the time-varying level of rental prices. Table 6 shows that the effect of reusing a Mafia property does not have any particular additional effect in areas with lower rental prices compared to the areas with higher rental prices and viceversa.

Table 6 Impact of reusing Mafia real estate on the share of students dropping out interacted with the rental prices

	(1) Dropout 4-5	(2) Dropout 4-5
SRR = 1	-0.0556	-0.0331
	(0.0342)	(0.0319)
Rental prices	-0.00722	-0.00364
	(0.00821)	(0.00742)
SRR × Rental prices	0.00371	0.00101
	(0.00397)	(0.00358)
Observations	1,487	1,485
Number of schools	293	292
clustered SE	yes	yes
time FE	yes	yes
school FE	yes	yes
students' migration		yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

6.3.2 Educational effect

Second, one might suggest that the specific educational activities running in the reused Mafia real estate affect juveniles' incentives supporting them in their educational process and increase their educational performance. To disintangle this potential mechanism, I look into the specific effect of the SRR policy on each type of reused mafia properties based on the specific activity carried out by the local NGO. Column (2) from Table 7 shows a statistically significant effect of the reuse of properties for social welfare purposes of about 1.4 percentage points; considering the other categories of reused properties, I don't find any particular significant negative effect on the dropout rates.

Table 7 Impact of reusing Mafia real estate on the share of students dropping out by the type of activity running in the reuse properties

	(1) Dropout 4-5	(2) Dropout 4-5	(3) Dropout 4-5	(4) Dropout 4-5
SRR × Education	-0.00338			
	(0.00659)			
SRR × Welfare		-0.0141*		
		(0.00833)		
SRR × Culture			-0.00455	
			(0.00587)	
SRR × Employment				-0.00536
				(0.0112)
Observations	1,485	1,485	1,485	1,485
Number of schools	292	292	292	292
clustered SE	yes	yes	yes	yes
time FE	yes	yes	yes	yes
school FE	yes	yes	yes	yes
students' migration	yes	yes	yes	yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

6.3.3 Perception effect

I will now explore the mechanism behind the potential effect of reusing Mafia real estate on students' incentives for education which develops through a change in the perception of the Mafia and the State. I will test whether simply being surrounded by a stronger anti-mafia community might replace Mafia role-models and increase juveniles' willingness in investing in their education rather than looking for a criminal career. For this purpose, I will report the analysis I conducted exploiting the answers of 25 thousands students form a subsample of my schools about their perception of the Mafia and the State. Finally, I will report some interesting qualitative information from previous case studies focusing on the effects of the SRR policy on the local community and some additional anecdotical evidence from the CSOs involved in the reuse of Mafia properties.

Table 8 reports the answers of 25200 students which attend 51 of the schools part of my sample. In those schools, the survey about the perception of Mafia has been running from 2009 to 2023, facilitated and provided by the Sicilian NGO Centro Studi Pio La Torre. In order to investigate the perception of Mafia as a possible channel through which the reuse of Mafia properties negatively affects dropout rates, I looked into the answers to the question "*Who is stronger between the Mafia and the State?*" and "*Do you think the Mafia*

can be ultimately defeated?. Regardless the limited number of observations, I estimated a TWFE finding that after the reuse occurs, 16 % less of students that the Mafia is stronger than the State, 21 % less of them think they are equally strong, and 9% more of them don't know how to answer. However, I don't find a statistically significant evidence of the fact that more students think the State is stronger than the Mafia. According to my interpretation, these results can show that the students tend to change their idea of the Mafia towards a less strong organisation, but they don't easily change their idea of the State.

Table 8 Impact of reusing Mafia real estate on the share of students thinking the Mafia is stronger than the State

	Who is stronger between the Mafia and the State?			
	(1)	(2)	(3)	(4)
	Mafia	State	Equally	Don't Know
SRR = 1	-0.160***	0.0106	-0.215***	0.0963***
	(0.0325)	(0.0402)	(0.0265)	(0.0262)
Observations	181	181	181	181
Number of schools	51	51	51	51
clustered SE	yes	yes	yes	yes
time FE	yes	yes	yes	yes
school FE	yes	yes	yes	yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Standard errors are clustered at the school level.

Second, I investigate whether the students think the Mafia can be ultimately defeated. After the reuse of Mafia properties, we see an increase of 28 % of students now think that the answer is "Yes", and we see a statistically significant decrease in the number of students thinking that the Mafia can't be defeated or that they don't know.

Table 9 Impact of reusing Mafia real estate on the share of students thinking that the Mafia can be eventually defeated

	Do you think the Mafia can be ultimately defeated?		
	(1)	(2)	(3)
	No	Yes	Don't Know
SRR = 1	-0.0500**	0.286***	-0.236***
	(0.0221)	(0.0282)	(0.0283)
Observations	181	181	181
Number of schools	51	51	51
clustered SE	yes	yes	yes
time FE	yes	yes	yes
school FE	yes	yes	yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Standard errors are clustered at the school level.

Recent conversations with *Libera*'s Mafia real estate managers and social workers from the CSOs managing the reused Mafia real estate, as well as the interviews conducted by Nazzaro (2021) and Falcone et al. (2016) preliminary helped me investigating the local dynamics around the activities carried out at the reused Mafia real estate. The social workers and volunteers from the CSOs describe the reused Mafia real estate as gathering centres for the local community, attracting people from all ages to take part and put efforts into transforming the previously infiltrated area; renovating social bonds and reclaiming the local area through the participatory redevelopment of the Mafia real estate seem to represent a neighbourhood effect in addressing a local change of perspective.

First, Nazzaro (2021) reports some interviews conducted with the administrators for the reused Mafia real estate as members of some CSOs. Although at the beginning many CSOs struggle to enforce their activities at the local level, especially considering Mafia-ridden neighbourhoods,

> organising recreational activities in the streets and places in the neighbourhood helps to get to know the people who make up the CSO and to change their vision of living together in the neighbourhood. - Interview from the CSO *AMANI*, Apulia, Italy

In addition,

> directly involving citizens in various activities for the redevelopment of the reallocated property was important in the perception of that space as a newly acquired common space that had previously been taken away for criminal purposes. - Interview from the CSO *AGESCI*, Apulia, Italy

Moreover, especially considering the juveniles' experiences, Nazzaro (2021) reports that

> the reused Mafia real estate represents a centre for youth gathering that welcomes young people of all ages in the hours after school and during the weekends. [...] Often the young people bring back to school the experiences they have had in the afternoons within the real estate, helping to spread the positive experiences that arise in reused Mafia real estate. - Interview from the CSO *AlterEco*, Apulia, Italy.

> "On assets and lands confiscated from Mafia [...] we find experiences featuring many young people, who were the first to decide to participate, aware of the importance of what was at stake."
> - *Carlo Borgomei, President of Fondazione Con il Sud*

On the same topic, Falcone et al. (2016) reports that

> The SRR policy has served to develop CSOs gathering juveniles who work in the sector of sustainable agriculture and develop new markets that did not exist until the day before, and has introduced and consolidated in our society a strong and open message: it is indeed possible to build a different future, where many and many different people in terms of culture, profession and age participate to make it happen. - *Lucio Cavazzoni, president of Alce Nero,* interview from Libera

To conclude, CSOs' activities in real estate and social workers represent local support for the local population and their opportunity to build a renovated community based on trust and anti-Mafia resilience. Indeed, the transformation of the Mafia real estate together with the projects proposed by the CSOs widespread trust and foster opportunities for local development (Martone, 2020).

6.4 Falsification and Robustness

In this section, I provide several falsification robustness checks addressing the main endogeneity concerns explained in Section 6.2. I will first look into the effects of the second step of the SRR policy - the reallocation - to check whether the reduction in dropout rates is driven by any previous step of the SRR policy. Second, to robust my results, I check whether the interaction between the reuse of Mafia properties and the presence of NGOs or the presence of a fully compliant municipality can affect my main results, according to Falcone et al. (2022).

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6.4.1 Falsification test

To be sure the effect of reusing Mafia real estate on educational outcomes is not driven by the previous steps of the policy, I looked into the effect of having at least one reallocated property in the school's catchment area, as well as whether there is any incremental

effect of the reuse step over the reallocation. In Table 6 I show two sets of results: first, Column (4) illustrates that having at least one reallocated Mafia property within the school catchment area has a negative effect on the dropout rate which is not statistically significant. According to my interpreation, we can then argue that while the third step of the SRR is still missing - the reuse of the properties - we observe no effect. Thus, the reuse of properties represents the crucial step in addressing the desired effect on education. Even though, as I explain in Section 4, there are on average six years between the reallocation and the reuse timing, one might be concerned that the reallocation and the reuse events are very close and the second step of the reallocation probably confounds the effect of the reuse. For this reason, in Column (2) I show that even when controlling for the presence of reallocated Mafia properties, the reuse of them still play a role in reducing dropout of about 8.4 percentage points. Indeed, both treated and control schools are already surrounded by at least one reallocated Mafia real estate, yet there is an additional marginal effect of the policy on the dropout rates. I interpret this as the fact that the reallocation alone as a part of the policy is not actively building community antimafia resilience and educational incentives at the local level since this only represents a bureaucratic step of the policy. The results are also robust without including the controls, as shown in Columns (1) and (3).

Table 10 Impact of reallocating Mafia real estate on the share of students dropping out from high school and the additional effect on the practice of reuse

	(1)	(2)	(3)	(4)
	Dropout 4-5	Dropout 4-5	Dropout 4-5	Dropout 4-5
Reuse	-0.0286**	-0.0259**		
	(0.0129)	(0.0117)		
Reallocation	0.00805	0.00398	-0.000757	-0.00399
	(0.00869)	(0.00776)	(0.00679)	(0.00693)
Observations	1,487	1,485	1,487	1,485
Number of schools	293	292	293	292
clustered SE	yes	yes	yes	yes
time FE	yes	yes	yes	yes
school FE	yes	yes	yes	yes
students' migration		yes		yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

6.4.2 Robustness checks: NGOs and municipalities

In terms of robustness, I first report the effect of the number of CSOs at the street level on the probability to have at least one reused Mafia real estate within the schools catchment areas. As Column (1) from Table 11 highlights, the marginal effect of the geolocated NGOs is close to zero and insignificant on the probability of having a Mafia property reused in this specific census block. Column (2) shows that this finding is robust to the introduction of proxy for students' migration. These results support the idea that the presence of NGOs is not causally affecting the treatment and affect its exogeneity.

Table 11 Impact of NGOs presence on the probability of a reusing practice occurring

	(1) Reuse	(2) Reuse
NGOs	0.00352	0.00529
	(0.00404)	(0.00380)
Observations	2,096	1,495
Number of schools	334	292
clustered SE	yes	yes
time FE	yes	yes
school FE	yes	yes
students' migration		yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

Second, we try to control for the presence of some *uncompliant* municipalities in sharing online information about the presence of reallocated Mafia real estate within their administrative boundaries in order to allow CSOs to reuse them (Falcone et al., 2022). Columns (1) and (2) from Table 12 illustrate the effect of reused Mafia real estate without and with the inclusion of municipality-time fixed effects respectively. The results show a statistically significant effect pretty similar and robust regarding the magnitude of the coefficients.

Table 12 Impact of reallocating Mafia real estate on the share of students dropping out from high school including municipality-specific changes over time

	(1) Dropout 4-5	(2) Dropout 4-5
SRR	-0.0259**	-0.0231*
	(0.0117)	(0.0130)
Observations	1,485	1,485
Number of schools	292	292
clustered SE	yes	yes
time FE	yes	yes
school FE	yes	yes
controls	yes	yes
municipality-time FE		yes

Notes: TWFE estimates. Treatment variable: A dummy equal to 1 whenever there is at least one reused Mafia real estate within the specific school catchement area. Controls include the dynamics of students'migration per school catchment area. Standard errors are clustered at the school level.

7 Conclusions

In this paper, I investigate the impact of the policy of reusing Mafia real estate for social purposes on the educational outcomes of local juveniles, focusing on the share of students dropping out of high school. The reuse of Mafia real estate is the last step of the SRR policy implemented in Italy since 1996, and it comes after the real estate has been first seized and then reallocated for social purposes, involving the ANBSC, the local municipalities and the local CSOs. Although the effect of seizures and reallocations has already been investigated by the existing literature, the localised effects of the reused Mafia real estate remain unexplored. In addition, I show that only 40% of the Mafia real estate successfully reallocated for social purposes has being effectively reused nowadays, with an average timing difference of six years between reallocations and reuse experiences. Furthermore, the development outcomes of the Mafia-ridden communities - educational, and labour market outcomes - which are the specific target of the policy itself, have not been investigated so far. My research project wants to fill this research gap and shed new light on the implications of reusing Mafia real estate to an under-researched set of educational outcomes.

For this purpose, I create a novel panel database spanning from 2015 to 2022 where I merged different sources of quantitative and qualitative geolocated information about the reused Mafia real estate, such as their features, their timing of reuse and the type of activity characterising the reuse experiences. I then match this information geographically with the geolocated schools of the ten biggest municipalities in the South of Italy and use data about the dropout rates of public high schools located in Mafia-ridden neighbourhoods.

My research design exploits the variation in the staggered reuse of Mafia real estate resulted from the implementation of the SSR policy. I created treated and control groups drawing schools catchment areas based on distance, and schools tracks, which represents the main factors affecting enrolling preferences. The school - my unit of analysis - is treated whenever it has at least one reused Mafia real estate within its catchment area. On the contrary, schools are part of my control group whenever they have no reused Mafia real estate within their catchment area. To measure the average treatment effect I exploit a triple difference-in-differences design which estimates the difference in the outcomes between Mafia-ridden and non Mafia-ridden schools comparing the treated schools against the controls based on the geolocation of reusing practices.

I can confirm that the reuse of Mafia real estate has a spillover effect on the dropout rates of the nearby schools; indeed, it reduces the share of students dropping out of about 2.6 percentage points. The effect is driven by local areas characterised by higher Mafia present and lower quality of schooling.

By conducting a mechanisms analysis, I discuss the three main mechanisms which

potentially drive the treatment effect: I show that the effect driven by the reuse of Mafia properties is unlikely to be related to trends in rental prices in the neighbourhood and to the specific educational activities running in the reused properties. Last, I discuss how the reuse boost a change in the students' perception of the strenght of the Mafia, reshaping their believes about whether the Mafia can be eventually defeated or not.

I then performe several falsification and robustness checks, confirmin that the previous steps of the SRR policy are unlikely to drive the measured effect; indeed, I find no effect of having at least one reallocated Mafia real estate within the school catchment area, suggesting that the reuse stage of the SRR policy is crucial for the measured effects on education. Finally, my results suggest that the level of civic engagement and municipalities' compliance are unlikely to bias my results.

From a policy perspective, these findings have important implications, especially considering Italy and other countries enforcing asset seizure policies against organised crime. First, my findings show that what plays a transformative role for the local infiltrated community is the effective reuse of Mafia real estate as public goods, as suggested by the well-developed literature addressing the need to shift from a repressive approach to a resilience-building approach (Cesqui, 2018). Second, additional efforts must be invested in streamlining the bureaucracy of the SRR policy. Indeed, although there is an obvious trade-off between a faster bureaucratic process and a careful investigation on a case-by-case basis, more than half of the reallocated real estate is currently not being reused for communal purposes. Reducing the time gap between reallocation and reuse could speed up the process of building a real alternative for many juveniles who decide to invest in a Mafia-related career rather than in their education. Last, given the recent drastic cut of the PNRR funds allocated to financing the reuse of Mafia real estate made by the government (Libera. Associazioni, 2023) in 2023, these findings suggest that a change of course is needed more than ever in building social resilience against the Mafia in Italy.

References

Acemoglu, Daron, Giuseppe De Feo, and Giacomo Davide De Luca (2020) "Weak States: Causes and Consequences of the Sicilian Mafia," *The Review of Economic Studies*, 87 (2), 537–581, 10.1093/restud/rdz009.

Alesina, Alberto, Salvatore Piccolo, and Paolo Pinotti (2019) "Organized Crime, Violence, and Politics," *The Review of Economic Studies*, 86 (2), 457–499, 10.1093/restud/rdy036.

Alonso, José M., Rhys Andrews, and Vanesa Jorda (2019) "Do neighbourhood renewal programs reduce crime rates? Evidence from England," *Journal of Urban Economics*, 110, 51–69, 10.1016/j.jue.2019.01.004.

ANBSC (2019) "Linee guida per l'amministrazione finalizzata alla destinazione degli immobili sequestrati e confiscati," https://www.benisequestraticonfiscati.it/linee-guida-per-lamministrazione-finalizzata-alla-destinazione-degli-immobili-seque

Arlacchi, Pino and Nando Dalla Chiesa (1987) *La palude e la città: si può sconfiggere la mafia*: Mondadori, Google-Books-ID: NR8vAAAACAAJ.

Baldascino, Mauro and Michele Mosca (2012) "La gestione dei beni confiscati: un'occasione perduta per le imprese sociali?" *Venturi P., Zandonai F.(a cura di), L'impresa sociale in Italia. Pluralità dei modelli e contributo alla ripresa, Altreconomia*, 213–236.

Balestrini, Nanni (2004) *Sandokan: storia di camorra*, 580: Einaudi.

Becker, Gary S. (1968) "Crime and Punishment: An Economic Approach," *Journal of Political Economy*, 76 (2), 169–217, 10.1086/259394, Publisher: The University of Chicago Press.

Boeri, Filippo, Marco Di Cataldo, and Elisabetta Pietrostefani (2023) "Localized effects of confiscated and re-allocated real estate mafia assets," *Journal of economic geography*, 10.1093/jeg/lbad035.

Caglayan, Mustafa, Alessandro Flamini, and Babak Jahanshahi (2017) "Organized Crime and Human Capital," October, Working paper.

——— (2021) "Hindering human capital accumulation: A hidden cost of the silent mafia?" *Journal of Economic Behavior & Organization*, 188, 828–845, 10.1016/j.jebo.2021.05.029.

Calamunci, Francesca and Francesco Drago (2020) "The Economic Impact of Organized Crime Infiltration in the Legal Economy: Evidence from the Judicial Administration of Organized Crime Firms," January, https://papers.ssrn.com/abstract=3526051.

Calamunci, Francesca M., Livio Ferrante, and Rossana Scebba (2022) "Closed for mafia: Evidence from the removal of mafia firms on commercial property values," *Journal of Regional Science*, 62 (5), 1487–1511, 10.1111/jors.12612, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/jors.12612.

Callaway, Brantly and Pedro H. C. Sant'Anna (2021) "Difference-in-Differences with multiple time periods," *Journal of Econometrics*, 225 (2), 200–230, 10.1016/j.jeconom.2020.12.001.

Catozzella, Giuseppe (2011) *Alveare. Il dominio invisibile e spietato della 'ndrangheta del Nord*, Milan: Rizzoli.

Cesqui, Elisabetta (2018) "L'Italia di fronte alla mafia," *Rivista di Studi e Ricerche sulla criminalità organizzata*, V. 3, 5–13 Paginazione, 10.13130/CROSS-9742, Artwork Size: 5-13 Paginazione Publisher: Rivista di Studi e Ricerche sulla criminalità organizzata.

Children, Save The (2022) "Alla ricerca del tempo perduto,"Technical report, Save the Children Italia Onlus.

Chiodo, Emanuela (2021) "Community work practices against children poverty in Southern Italy. Exploring experiences and perspectives in local welfare," *International Journal of Sociology and Social Policy*, 42 (9/10), 877–889, 10.1108/IJSSP-04-2021-0077, Publisher: Emerald Publishing Limited.

Coniglio, Nicola, Giuseppe Celi, and Cosimo Scagliusi (2010) "Organized Crime, Migration and Human Capital Formation: Evidence from the South of Italy," January.

Daniele, Gianmarco and Benny Geys (2015) "Organised Crime, Institutions and Political Quality: Empirical Evidence from Italian Municipalities," *The Economic Journal*, 125 (586), F233–F255, 10.1111/ecoj.12237, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/ecoj.12237.

Di Vita, Fabio and Giuseppe DiVita (2019) "Human Capital Accumulation in Sicily and the Mafia. A Historical Analysis After the Unification of the Italian Kingdom," *SSRN Electronic Journal*, 10.2139/ssrn.3335378, Working Paper.

van Dijk, Meintje, Edward Kleemans, and Veroni Eichelsheim (2019) "Children of Organized Crime Offenders: Like Father, Like Child? An Explorative and Qualitative Study Into Mechanisms of Intergenerational (Dis)Continuity in Organized Crime

Families," *European Journal on Criminal Policy and Research*, 25 (4), 345–363, 10.1007/s10610-018-9381-6.

Douglas, Mary and Baron Isherwood (2002) *The World of Goods*, London: Routledge, 10.4324/9780203434857.

Falcone, Riccardo Christian, Tatiana Giannone, and Francesco Iandolo (2016) "BeneItalia. Economia, welfare, cultura, etica: la generazone di valori nell'uso sociale dei beni confiscati alle mafie," research Report, Libera. Associazioni, Nomi e Numeri contro le Mafie, Torino, https://www.libera.it/documenti/schede/beneitalia.pdf.

Falcone, Riccardo Christian, Gerardo Illustrazione, Tatiana Giannone, Luca Mennella, Leonardo Ferrante, and Vittorio Martone (2021) "RimanDATI, i comuni sulla trasparenza dei beni confiscati alle mafie,"Technical report, Libera. Associazioni, Nomi e Numeri contro le Mafie, https://www.libera.it/schede-1571-rimandati.

——— (2022) "RimanDATI, i comuni sulla trasparenza dei beni confiscati alle mafie II edizione,"Technical report, Libera. Associazioni, Nomi e Numeri contro le Mafie, https://www.libera.it/schede-2086-rimandati_ii_edizione.

Farrington, David P and Brandon C Welsh (2003) "Family-based Prevention of Offending: A Meta-analysis," *Australian & New Zealand Journal of Criminology*, 36 (2), 127–151, 10.1375/acri.36.2.127, Publisher: SAGE Publications Ltd.

Ferrante, Livio, Stefania Fontana, and Francesco Reito (2021a) "Mafia and bricks: unfair competition in local markets and policy interventions," *Small Business Economics*, 56 (4), 1461–1484, 10.1007/s11187-019-00250-w.

Ferrante, Livio, Francesco Reito, Salvatore Spagano, and Gianpiero Torrisi (2021b) "Shall we follow the money? Anti-mafia policies and electoral competition," *Journal of Policy Modeling*, 43 (5), 1110–1130, 10.1016/j.jpolmod.2021.03.010.

Gambetta, Diego (1996) *The Sicilian Mafia: The Business of Private Protection*: Harvard University Press, Google-Books-ID: y3bv3tqWftYC.

García, Jorge Luis, James J. Heckman, and Anna L. Ziff (2019) "Early childhood education and crime," *Infant Mental Health Journal*, 40 (1), 141–151, 10.1002/imhj.21759, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1002/imhj.21759.

Goodman-Bacon, Andrew (2021) "Difference-in-differences with variation in treatment timing," *Journal of Econometrics*, 225 (2), 254–277, 10.1016/j.jeconom.2021.03.014.

Heller, Sara B., Anuj K. Shah, Jonathan Guryan, Jens Ludwig, Sendhil Mullainathan, and Harold A. Pollack (2017) "Thinking, Fast and Slow? Some Field Experiments to

Reduce Crime and Dropout in Chicago*," *The Quarterly Journal of Economics*, 132 (1), 1–54, 10.1093/qje/qjw033.

Hirsch, Fred (1976) *Social Limits to Growth:*, Cambridge, MA: Harvard University Press.

Kenney, Dennis Jay and Roy Godson (2002) "Countering crime and corruption: A school-based program on the US—Mexico border," *Criminal justice*, 2 (4), 439–470, Publisher: Sage Publications Sage UK: London, England.

Kleemans, Edward R. and Christianne J. de Poot (2008) "Criminal Careers in Organized Crime and Social Opportunity Structure," *European Journal of Criminology*, 5 (1), 69–98, 10.1177/1477370807084225.

La Spina, Antonio (2014) "The Fight Against the Italian Mafia," in Paoli, Letizia ed. *The Oxford Handbook of Organized Crime*, 0: Oxford University Press, 10.1093/oxfordhb/9780199730445.013.022.

Libera. Associazioni, Nomi e Numeri contro le Mafie (2023) "PNRR, cancellati fondi per Beni confiscati," https://www.libera.it/schede-2360-pnrr_cancellati_fondi_per_beni_confiscati.

Ludwig, Jens, Greg J Duncan, Lisa A Gennetian, Lawrence F Katz, Ronald C Kessler, Jeffrey R Kling, and Lisa Sanbonmatsu (2013) "Long-term neighborhood effects on low-income families: Evidence from Moving to Opportunity," *American economic review*, 103 (3), 226–231, Publisher: American Economic Association.

Mandic, Sandra, Susan Sandretto, Enrique García Bengoechea, Debbie Hopkins, Antoni Moore, Judith Rodda, and Gordon Wilson (2017) "Enrolling in the Closest School or Not? Implications of school choice decisions for active transport to school," *Journal of Transport & Health*, 6, 347–357, 10.1016/j.jth.2017.05.006.

Martone, Vittorio (2020) *Politiche integrate di sicurezza: tutela delle vittime e gestione dei beni confiscati in Campania*: Carocci editore, Google-Books-ID: XKR9zQEACAAJ.

Menditto, Francesco (2013) "Quale futuro per i beni immobili sequestrati e confiscati? Proposte essenziali per ridurre le criticità esistenti.," *Rivista Diritto penale contemporaneo*, Diritto Penale Contemporaneo, https://www.penalecontemporaneo.it/d/2510-quale-futuro-per-i-beni-immobili-sequestrati-e-confiscati-proposte-essenziali-

Mosca, Michele (2017) "The Social Regeneration of Mafia Assets in the Land of Gomorrah: The Role of Social Cooperatives," in *Social Regeneration and Local Development*: Routledge, Num Pages: 18.

Nazzaro, Sara (2021) "Il valore educativo dei beni confiscati alla mafia," *Rivista Diritto Penale della globalizzazione - Pacini Giuridica*, https://www.dirittopenaleglobalizzazione.it/collana-quaderni-crst-centro-ricerca-sicurezza-terrorismo/, Pacini Editore.

Nieuwenhuis, Jaap and Pieter Hooimeijer (2016) "The association between neighbourhoods and educational achievement, a systematic review and meta-analysis," *Journal of Housing and the Built Environment*, 31 (2), 321–347, 10.1007/s10901-015-9460-7.

Operti, Elisa (2018) "Tough on criminal wealth? Exploring the link between organized crime's asset confiscation and regional entrepreneurship," *Small Business Economics*, 51 (2), 321–335, http://www.jstor.org/stable/45107020, Publisher: Springer.

Pinotti, Paolo (2015) "The Causes and Consequences of Organised Crime: Preliminary Evidence Across Countries," *The Economic Journal*, 125 (586), F158–F174, 10.1111/ecoj.12238, _eprint: https://onlinelibrary.wiley.com/doi/pdf/10.1111/ecoj.12238.

Sciarrone, Rocco (1998) "Il capitale sociale della mafia. Relazioni esterne e controllo del territorio," *Quaderni di Sociologia* (18), 51–72, 10.4000/qds.1476, Number: 18 Publisher: Lexis Sas.

Sun, Liyang and Sarah Abraham (2021) "Estimating dynamic treatment effects in event studies with heterogeneous treatment effects," *Journal of Econometrics*, 225 (2), 175–199, 10.1016/j.jeconom.2020.09.006.

Sviatschi, Maria Micaela (2022a) "Making a narco: Childhood exposure to illegal labor markets and criminal life paths," *Econometrica*, 90 (4), 1835–1878, Publisher: Wiley Online Library.

——— (2022b) "Spreading Gangs: Exporting US Criminal Capital to El Salvador," *American Economic Review*, 112 (6), 1985–2024, 10.1257/aer.20201540.