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ABSTRACT

Come Out and Play: Public Space Recovery, Social Capital, and Citizen Security*

This paper examines the effects of renovating deteriorated public spaces on local socioeconomic outcomes. We analyze the impacts of a randomized experiment implemented in 28 fragile neighborhoods of Santiago, Chile. Our findings indicate that the renovation of local squares led to increased use and maintenance of the public space, enhanced neighborhood engagement, and a stronger sense of ownership among residents, along with a reduction in leisure activities outside the neighborhood. Moreover, treated neighborhoods experienced improvements in public security perceptions both within the square and in the broader neighborhood area. We also observe positive effects on trust (among acquaintances) and participation in community organizations. By exploring heterogeneous treatment effects across neighborhoods, we do not find evidence supporting theories emphasizing the joint determination of public security and social capital. Instead, our results suggest that the effects are better explained by increased neighborhood use, particularly in areas that are densely populated and have a higher proportion of social housing.

JEL Classification: K42, O18, R53

Keywords: public space recovery, crime, social capital, urban infrastructure

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1 Introduction

Local communities have been recognized as a critical feature to explain long-term development (Rajan, 2019). In many middle-income regions, including Latin America, governments have made the improvement of local public space a priority in their social agenda (CEPAL, 2007). However, the effectiveness of such urban interventions, the features that make them successful, and how they affect individual behavior in local environments remain unclear.

This paper examines the socioeconomic impacts of the revitalization of public spaces in fragile areas of Santiago, Chile. We designed and implemented a randomized intervention in collaboration with the Chilean NGO *Fundación Mi Parque*. The experiment involved renovating deteriorated public squares in disadvantaged neighborhoods, enabling us to analyze the causal effects of the intervention on various outcomes, including public space utilization, social capital, housing values, perceived quality of life, and crime. Our analysis looks at the immediate impacts of the intervention and also explores potential spillovers on adjacent areas within the same neighborhood. An essential aspect of *Mi Parque*'s intervention is its bottom-up approach, actively involving families and communities in the early stages of public space design. This participatory approach fosters a sense of ownership and incentivizes long-term maintenance by the community. Additionally, the intervention leverages the direct participation of the community in the construction process, taking advantage of the high population density in targeted neighborhoods, resulting in interventions with low costs per beneficiary (ranging from US$5 and US$20).

In principle, the recovery of public spaces can potentially impact local populations through various mechanisms. The popular situational anonymity hypothesis, for instance, suggests that local environmental conditions, both physical and social, influence individuals and affect the level of social capital and criminogenic potential of neighborhoods. The "Broken Windows" theory, intimately linked to this idea, proposes that public disorder can lead to increased crime and reduced social capital accumulation due to the perception of low social control in the neighborhood (Wilson and Kelling, 1982).[1] An alternative, sometimes presented as part of a broader "Broken Windows" effect, and sometimes presented in contrast to it, is the "Eyes on the Street" hypothesis. Put forth by Jane Jacobs in 1961, it implies that safe streets require "...eyes upon the street, eyes belonging to those we might call the natural proprietors of the street" (Jacobs, 1961). In this explanation, the key mechanism is the active use of public space and a sense of ownership, rather than anonymity and social capital per se, though these dimensions are likely to be interconnected.

Our paper therefore also tries to shed light on the potential mechanisms underlying the effects of public space recovery on socioeconomic outcomes. To accomplish this, we employ machine learning techniques and explore heterogeneous treatment effects, correlates of treatment effect size, and the correla-

[1] Philip Zimbardo's famous unpublished experiment, chronicled in a 1969 Time Magazine article (Feburary 28, 1969, Diary of a Vandalized Car"), conjectured that the different fates of cars left unattended in Palo Alto and the Bronx were driven by the ecological differences between places where anonymity ruled versus those where a sense of community dominated" (Zimbardo, 2008). In the Bronx – where anonymity supposedly ruled – the unattended car started being vandalized within minutes of the beginning of the experiment, while in Palo Alto – where a sense of community supposedly dominated – it remained untouched until the end of the experiment. The Broken Windows theory has influenced policy interventions aimed at reducing disorderly behavior and cleaning up public spaces in various cities worldwide, such as, for example, New York and Bogotá (Fay, 2005; Llorente and Rivas, 2005).

tion among treatment effects across different outcomes, and then compare the patterns that arise from these exercises to the predictions of the different theories. For example, the purest version of the situational anonymity hypothesis/"Broken Window" theory suggests that social capital plays a crucial mediating role in explaining the potential impacts of the urban environment on public security. The "Eyes on the Street" hypothesis, on the other hand, attaches relatively more importance to public presence and use of the space.

Our specific experimental design is the following. The sample consists of 56 public plots that required restoration, as identified by the NGO *Mi Parque*. The plots were stratified into pairs based on their characteristics and locations, using a classification provided by *Mi Parque*. Within each stratum, one plot was randomly assigned to the treatment group, and one to the control. Due to logistical and financial constraints, the treatment plots were not renovated simultaneously. The first implementation began in May 2012, while the last one was concluded in November 2014.

Data from local communities were collected through baseline and follow-up surveys. The baseline data for treatment and control plots in each stratum were collected approximately two weeks before the intervention began in the treatment plot. The construction of the parks typically finished within one to two months after the baseline survey. Four to five months after the intervention, we conducted a follow-up survey of the same households that were interviewed at baseline, both in the treatment and control groups. Our baseline sample includes 1,530 households, corresponding to a random sample of 25 to 30 households living around each of the 56 plots, with an average of 27.3 households interviewed per plot.

The baseline and follow-up surveys collected data on various socioeconomic and demographic characteristics, housing conditions, perceptions of security, social capital, family relations, life satisfaction, use of time, leisure, and participation in community activities. For the treatment group in the follow-up survey, we also gathered information related to the intervention. The attrition rate between the baseline and follow-up surveys was 20.1%. To assess the intervention's effectiveness and durability, we conducted site visits to both treated and control plots approximately two years after the last renovation was completed. These visits allowed us to collect qualitative data on the physical state of the plots, including their overall condition, presence of green areas, benches, playground, and trash cans, as well as whether they appeared safe and contributed to the quality of life in the neighborhood.

To estimate the effects of the renovation of public spaces, we compare households living in neighborhoods where the plots were recovered to those in the control group. We analyze seven categories of outcomes: use and maintenance of the park, trust and relations with neighbors, ownership and use of the neighborhood, participation in community associations, perception of security and crime in the park and in the neighborhood, home investments and value, quality of life, and leisure outside the neighborhood. We present p-values using both standard single hypothesis testing and a step-down procedure adjusted for multiple hypotheses testing (Romano and Wolf, 2005, 2016). We also use inverse probability weighting (IPW) and Lee bounds to account for slightly higher attrition rates in the control group (21.9% versus 18.2%). Finally, we use a machine learning procedure proposed by Chernozhukov et al. (2018) to investigate the heterogeneous effects across household, park, and neighborhood characteristics and to analyze the correlation between the size of treatment effects across different neighborhoods.

We report six main sets of results. First, we find that treatment leads to a significant improvement in the use and maintenance of the park. Specifically, the point estimates indicate an improvement of 0.46 standard deviations (σ) in our index of park use, and of 0.31σ in park maintenance. These results suggest that the recovery of public space translated into increased demand for the park, which remained in a better state of maintenance, and that this effect persisted for several months after the treatment was implemented. Furthermore, when we conducted site visits more than two years after the intervention, we found observable differences between treated and control parks. Treated parks had more green areas (0.60σ), benches (0.36σ), playgrounds (0.40σ), and trash cans (0.45σ), and appeared to contribute more to the quality of life in the neighborhood (0.48σ) and to socialization (0.36σ). These findings suggest that the treatment was "real": it was effectively implemented, resulted in increased demand, and had a significant and lasting impact on the equipment and amenities of the park.

Second, we observe a significant impact on neighborhood use and ownership, with an estimated treatment effect of 0.12σ. This indicates that the public space recovery not only led to an increase in park use, but also to a more general use of public spaces in the neighborhood and a higher sense of belonging. This suggests that the impact of public space recovery goes beyond the park itself. Our results show that this effect is driven particularly by an increase in the presence of families and children using the neighborhood. In line with increased neighborhood use, we also find a decrease in leisure activities outside the neighborhood, with an estimated effect of 0.07σ.

Third, we find significant effects on two dimensions of social capital: trust and relationship with neighbors (0.05σ), and participation in community organizations (0.13σ). Interestingly, the increase in trust is driven by the intensive margin, meaning that it increases among acquaintances rather than among people who initially did not know each other. This finding is consistent with the process data that we collected, which shows that treated individuals made on average (median) only 1.5 (0) new acquaintances through activities related to park recovery, with 82% of the sample reporting that they did not make any new acquaintance.

Fourth, our findings show that the program led to improvements in public security both within the park and in the neighborhood. The estimated treatment effects suggest that the program resulted in an increase in public security of 0.11σ within the park and 0.05σ in the neighborhood. These results indicate that, besides enhancing the physical conditions of the park, the intervention also had a positive impact on the overall safety of the area.

Fifth, our results indicate no significant effect on home investments and value or on quality of life. However, the improvements in public spaces and social capital, as well as the increase in public security, do suggest that the benefits of the program extend beyond the physical characteristics of the park.

Finally, regarding heterogeneity, our findings reveal a pattern that challenges some of the assumptions of the purer version of the "Broken Windows" theory. The results indicate a disconnect – or, at most, a weak connection – between the effects on security outcomes and those related to social capital. These findings align with our previous results, which show limited changes in social capital among people who do not know each other and increased trust primarily among acquaintances. Altogether, our results suggest that a combination of explanations incorporating elements from the "Eyes on the Street" hypothesis, the role of coordination (especially in densely populated areas), and the influence of social housing – as suggested by the "Defensible Space theory (Newman (1972)) – may provide a better understanding of the observed effects. These findings provide strong evidence that interventions aimed at renovating deteriorated public spaces operate through multiple mechanisms and have a broader impact on neighborhood life beyond the immediate use of the public space itself.

The paper contributes to several lines of research. First, the previous literature has analyzed various aspects of the relationship between public space recovery and socioeconomic outcomes, without necessarily testing a particular theory. Campos-Vázquez (2011), for example, uses propensity score matching to analyze the effect of a national public space rehabilitation intervention in urban areas of Mexico on social capital and perceptions of security. He finds significant differences in social capital outcomes across treated and control areas two years after the intervention, and also some temporary effects on perceptions of security. A series of papers using multivariate regression analysis reaches similar conclusions when looking at the relationship between access to green areas and interactions with neighbors/use of public areas (Garvin et al., 2013; Branas et al., 2018), or between access to green areas, public space appearance, and objective and subjective measures of security (Kuo and Sullivan, 2001; Braga and Bond, 2008; Donovan and Prestemon, 2010).[2] There is also some correlational evidence examining the relationship between access to green areas and quality of public spaces and individual outcomes, such as physical and mental health and house prices (Maas et al., 2006; Joh et al., 2012; Branas et al., 2011; Lutzenhiser and Netusil, 2001; Irwin, 2002; Vandegrift and Lahr, 2007; Biao et al., 2012). A few papers study the causal impacts of the recovery of vacant lots/land (typically smaller than public squares) on outcomes related to crime using experimental designs (Branas et al., 2018). The contribution of our paper, therefore, in addition to using a randomized evaluation, is to study the impact of the intervention along many different dimensions at the same time, providing a more comprehensive view of the social effects of these types of programs.

Secondly, this paper contributes to the literature that assesses theories connecting public spaces to socioeconomic outcomes. Specifically, despite the widespread attention it receives in policy circles and the media, there is surprisingly limited evidence on the effectiveness of "Broken Windows" interventions, particularly concerning their public space dimension. Existing literature on the subject has predominantly been qualitative or has relied on regression analyses without clear sources of identification, with a predominant focus on the policing component (e.g., Harcourt, 1998; Sampson and Raudenbush, 1999; Corman and Mocan, 2005; Harcourt and Ludwig, 2006; Meares, 2015; Peters and Eure, 2016).[3] In this study, we explicitly examine the mechanism associated with the "Broken Windows" theory and compare it to alternative explanations, such as the "Eyes on the Street" hypothesis and the "Defensible Space" theory. While a few studies have empirically explored the implications of these theories (e.g., Mawby, 2017; Brunson et al., 2001; Foster et al., 2011; Marzbali et al., 2012 for the defensible space theory, and Jamme et al., 2018; Welsh et al., 2022; Browning and Jackson, 2013; Amiri and Crain, 2020; Van Asten et al., 2023 for the eyes on the street hypothesis), our paper goes beyond by employing heterogeneous treatment

[2] Based on an informal matching strategy and using endline data only, IADB (2010) finds that a project of slum urbanization in Brazil increased ownership and access to public services. But this project involved a multifaceted intervention, including land titling, paving of roads, and access to public water systems, among others.

[3] Harcourt and Ludwig (2006) interpret the Moving to Opportunity program as a natural experiment on the relocation of families from disorderly neighborhoods to less disadvantaged and disorderly communities. We interpret the Moving to Opportunity program as including various other components – to name two important ones, a wealth shock to families and increased social isolation within destination neighborhoods – so we are wary of interpreting it as a natural experiment on the Broken Windows effect.

effects to try to distinguish between their predictions.

The remainder of the paper is structured as follows. Section 2 describes the intervention. Section 3 explains the randomization design, the data collected, and our empirical analysis. Section 4 presents and discusses the results. Finally, section 5 presents some concluding remarks.

2 Research Design and Methods

2.1 The *Mi Parque* Intervention

The intervention we analyze was conceived and implemented by *Fundación Mi Parque*. *Fundación Mi Parque* is an NGO founded in 2007 by a group of Chilean architects, focused on the recovery of public squares in poor neighborhoods. These architects brought together their social concerns and experiences in a project that sought to improve the conditions of the public surroundings in poor communities (from the NGO's own stated history, available from https://www.miparque.cl/historia/, translated by the authors). The main goal of *Mi Parque* has been to shift the policy and civil action in poor communities from a focus on the household to a broader focus on the public space where individuals and families interact. By June 2023, *Mi Parque* has already implemented 400 projects of public square recovery in 16 different regions of Chile, benefiting directly communities adding up to more than one million individuals.[4]

In short, *Mi Parque* seeks to recover public spaces and green areas in vulnerable neighborhoods. The goal is to transform deteriorated public spaces using participatory strategies from the design up to the construction stages. Once a location is chosen, the basic protocol for community participation includes two main steps: (i) five meetings between residents and *Mi Parque* staff to design the physical intervention; and (ii) community participation in the construction of the park in a one-day collective activity. The renovated squares include, typically, new sidewalks, green areas planted with grass and trees, a playground for children, and benches.[5] Thus, the final outcome of the intervention is the transformation of deteriorated public spaces according to designs developed together with local communities, conceived to respond to their particular demands.

2.2 Motivating Theories

In this subsection, we present different rationales to explain the potential effects of the *Mi Parque* intervention on various outcomes (with a specific focus on security), along with the underlying mechanisms that can explain the observed results. Summing up, the main aspects of the program are a few days of activities among neighbors – five days of discussion and planning and one day of joint construction work – plus the actual recovery of a square that becomes available for public use in the neighborhood.

The primary goal of *Mi Parque* is to create renovated public spaces that foster broader and more intensive use of the square, leading to healthier habits and increased socialization among family members and neighbors. By encouraging interactions and coordination among neighbors during the planning and

[4]It has been very influential in the urban policy debate in Chile and Latin America more broadly, leading even to some expansions of the model to Argentina and Uruguay since 2017.

[5]The intervention is funded through public-private partnerships involving donations from large corporations, including, in the past, the likes of Google, Coca-Cola, Starbucks, General Electric, Levi's, Disney, and UPS, among others.

construction stages, in addition to prior meetings held by the NGO, the intervention aims to promote better maintenance of the public space and coordination of other social actions. Many expected outcomes of the intervention align with the "Broken Windows" theory of crime and antisocial behavior. According to this theory, renovating degraded public squares and promoting interactions and coordination among neighbors should improve the physical and social infrastructure in poor urban communities, thereby reducing anonymity and increasing social capital. This improvement, in turn, should lead to better social control and reduced crime.

However, the recovery of public spaces can also impact outcomes through other mechanisms, such as suggested by the "Eyes on the Street" hypothesis proposed by Jane Jacobs (Jacobs, 1961). As its name indicates, this hypothesis suggests that the actual use of public spaces and the development of a sense of ownership can directly reduce crime. This idea has two main empirical implications that differ from those of the Broken Windows theory: (i) the emphasis is not on pro-social behavior and the increase in participation and social capital, but on the presence of people using the park and streets; and (ii) the observable characteristics of the park are not relevant in and of themselves; the key feature is the use of public space. Interestingly, both of these points can be tested empirically.

There are still other rationales that may help to explain potential effects. One possibility is that interventions such as *Mi Parque* act as coordination devices for the local community, and that this coordination increases participation, the valuation of the public space, and contributions to the provision of public goods in general. In this perspective, the intervention may have provided opportunities for community members to engage in collective action, which could increase their sense of empowerment and improve their social and psychological well-being. Under this interpretation, there is no clear direct link between the increase in participation and the increase in public security in the area because the emphasis is on participation and contribution to the provision of public goods (though these may come as side effects through some of the other channels discussed before). One interesting implication of this hypothesis is that the effects of the intervention in denser areas should be stronger, especially on dimensions most directly related to the provision of public goods.

Another interpretation that may be relevant in our context, where social housing is prevalent, is the "Defensible Space" theory proposed by Oscar Newman (Newman (1972)). According to this theory, typical social housing projects are associated with incentives for crime as they create a "tragedy of the commons" scenario and the spaces are often too small. This theory can be studied through one dimension of heterogeneity: the proportion of apartments (versus single-family units), which may imply stronger treatment effects.

Finally, a more cautious interpretation of the potential effects of the *Mi Parque* intervention is related to the existence of strong complementarities between the intervention and the availability of other amenities in the area. According to this hypothesis, public space recovery may not be effective unless the area has other relevant amenities or the public space recovery is accompanied by other improvements. This theory suggests that treatment effects may vary across the park environment and its surroundings due to heterogeneity in the availability of other amenities.

Although these rationales are often complementary and difficult to disentangle, we employ machine learning techniques and two alternative approaches to investigate whether they help explain the results (see below for a detailed description of the methods). These approaches are as follows:

- We examine whether the estimated treatment effects on various outcomes are correlated with each other. As we discussed earlier, different rationales make different predictions regarding the correlations among impacts on various outcomes.
- We explore whether there are observable differences in baseline characteristics between individuals with the largest and smallest treatment effects. By doing so, we can try to map the presence of heterogeneous treatment effects on the implications of the different theories mentioned above.

2.3 Experimental Design

In order to better understand the impacts of its initiative on local communities, *Fundación Mi Parque* agreed to randomize a set of its interventions implemented between May 2012 and November 2014. The randomization process was designed and supervised by our research team.

We randomized the *Mi Parque* intervention using a pair-matched randomized controlled trial. The treatment assignment process was implemented in two stages. First, in early 2012, 29 pairs of plots were generated from a set of 58 eligible plots that fulfilled the eligibility criteria of *Mi Parque*. Plots were eligible for the intervention when they were deteriorated public spaces located in vulnerable neighborhoods of the metropolitan area of Santiago. The pairs of plots were generated based on a similarity index including characteristics of the plot (such as size and equipment) and an index measuring the socioeconomic status of the neighborhood.[6] Within each pair, we randomly assigned one plot to the treatment group and one plot to the control group. Then, as the construction process started in some parks, several of the pairs were dropped from the sample because either it was not possible to recover the treatment plot due to logistical or economic reasons, or because the municipality intervened in the control plots before the construction process in the treatment plot began. Then, *Mi Parque* provided replacement pairs of plots to be allocated between treatment and control groups. At the end, out of the 58 original plots, the final sample included 36 (i.e., 18 pairs of plots), and 20 additional extra plots (i.e., 10 pairs of plots) were added to the experimental sample. This leaves us with a sample of 28 pairs and 56 plots to be studied in the experiment.

Our ex-ante power calculations implied that we needed a sample of between 25 to 30 households per plot in order to achieve minimum detectable effects of the order of 0.2 standard deviations (with statistical power set to 0.8). We therefore randomly sampled 25 to 30 households living close to each plot. We wrote a list of households around the plot and then randomized the households to be interviewed. These households were interviewed at the baseline, around two weeks before the intervention, and at the endline, four to five months after the end of the intervention.

By randomly assigning the treatment at the plot level and randomly selecting households within each plot neighborhood, the research design guarantees that we have two groups of neighborhoods and

[6] Specifically, the similarity index considered three dimensions: (i) SES of the neighborhood of the plot (SES group accordingly to the 2002 Chilean census, the share of households owning a car according to the 2002 Chilean census, and distance to the closest police station); (ii) characteristics of the plot (including the type of homes surrounding the plots – houses versus apartment buildings –, size of the plot, location of the plot in the neighborhood – center or in the border –, and the state of the plot; and (iii) connectivity of the park (access to subway and to the main bus routes).

households – treated and control – that are, in expectation, comparable in terms of observable and unobservable characteristics. This enables the identification of the causal effect of the *Mi Parque* intervention by simply comparing households across treatment and control neighborhoods. In addition, random assignment within pairs of plots has another advantage: since the intervention does not take place at the same time across all plots but is staggered over a period of roughly two years, the design allows data to be collected simultaneously at the pair level, ensuring that external aggregate conditions remain balanced between the treatment and control groups. We discuss balance across treatment and control groups below.

2.4 Data

The data for this study were obtained from three primary sources, for both treatment and control plots. The first source is a baseline household survey conducted approximately two weeks before the construction started in the treatment plot in each stratum. The second source is a follow-up household survey conducted four to five months after the construction of the treatment plot in each stratum. Finally, the third source of data is from one visit conducted by research assistants to treatment and control parks about two years after the last construction.

The baseline and follow-up surveys consisted of eight main modules that covered various topics related to socioeconomic and demographic characteristics, housing conditions, perceptions of insecurity, crime incidence, social capital, family relations, life satisfaction, use of time, leisure, and participation in community activities, including the intervention itself. These questions were based on similar questions used in well-known household surveys in Chile, such as the National Survey of Urban Public Security, the Bicentennial Survey Adimark-UC, the National Health Survey, the Global Physical Activity Questionnaire, and a previous survey designed by *Fundación Mi Parque*. The follow-up survey also included questions specifically about the intervention for households in the treatment group.

The enumerators who conducted the interviews were carefully selected and instructed to interview the head of the household who would be responsible for answering questions about the other household members. The enumerators were mostly senior undergraduate students in social work and sociology who participated in a one-day intensive training session. They were instructed not to identify themselves as members of *Fundación Mi Parque* to the interviewees. The questionnaire was also designed to avoid any obvious connection between the interview and the renovation project implemented by *Mi Parque*. All these efforts aimed to prevent response biases from a feeling of gratitude towards the NGO.[7]

After questionnaire responses were collected, the data went through processes of scrutiny and back-check that looked for inconsistencies and missing information (sometimes involving telephone calls to households to double check certain answers, and sometimes involving re-interviewing some households, when, for example, questions were not answered by the head of the household). Once this review process was finalized, the data were converted into digital format by two independent digitizers (in case discrepancies were detected, the problem was sorted out by a third person, after consulting the original

[7] To address concerns about response biases due to gratitude and social desirability towards *Mi Parque*, we included two questions in the survey. The first question asked whether respondents found the questionnaire easy or difficult to answer, while the second asked whether they felt comfortable answering it. We found no evidence of treatment effects in the answers to these questions. For detailed results, see Appendix Table 6.

paper forms from the survey).

Since we have a large number of survey questions dealing with different aspects of the intervention, our main analysis groups the outcome variables into 10 mutually exclusive summary indices that reflect different themes (following the approach by Finkelstein et al., 2012):

- Use of Park;
- Park maintenance;
- Trust and relations with neighbors;
- Ownership over and use of neighborhood;
- Participation in community associations;
- Perception of security in the park;
- Perception of security in the neighborhood;
- Home Investments and Value;
- Quality of Life; and
- Leisure outside the Neighborhood.

The original questions that are included in each of the aggregate categories are listed in Appendix Table 3. We calculate the average for the standardized responses to questions that compose each index. We standardize the responses to each question according to:

$$Y_{st,i} = \frac{Y_i - \bar{Y}_c}{\bar{\sigma_{y_c}}}, \tag{1}$$

where Y_{st} is the standardized version of Y, $\bar{\sigma_{y_c}}$ is the standard deviation of Y for the control group, and $\bar{Y}_c$ is the mean of Y for the control group.

We change the sign of some of the variables so that an increase in each variable implies an improvement in the relevant dimension. Then, we calculate the average within each category as:

$$Y_z = \frac{\sum_{i=1}^{n} Y_{st,i}}{n}, \tag{2}$$

where z indicates an aggregate category, i indicates responses to an item that is part of the category of outcomes z, and n is the total number of items within the category of outcomes z.

Finally, to assess the effectiveness and durability of the intervention, we conducted a follow-up visit to both treated and control plots about two years after the last renovation was completed. The research assistants who conducted the visit were instructed to make observations on various dimensions, including the overall condition of the plot, the presence of green areas, benches, a playground, and trash cans, as well as the perceived safety and contribution to the quality of life in the neighborhood. We sent two research assistants to each plot to provide independent assessments. To prevent any potential bias, the research assistants were not informed whether the plots they visited belonged to the treatment or control group. [8]

2.5 Balance and Attrition

Table 1 displays the baseline descriptive statistics for both the initial sample and the subsample of individuals included in the follow-up survey. The initial sample consists of 1,530 households who have lived in the neighborhood for an average of 22 years. The majority of households are headed by women (56%), with an average household size of 3.4. Most heads of households work (83%) and own their houses (81%). The average household head has 10.3 years of schooling, and the monthly household income is about CLP$367,000 (US$708). On average, the households are located 80 meters away from the park. The statistics for the subsample of individuals included in the follow-up survey, consisting of 1,223 households, are very similar to those of the initial sample.

To assess the validity of random assignment, we conducted mean-difference tests for several baseline variables between the treatment and control groups, for both the complete sample and the subsample of individuals contacted in the follow-up survey. Table 2 displays summary statistics for each group, mean-difference tests controlling for stratification variables, and the p-value for the differences using a correction for multiple hypotheses testing.

When comparing individuals in the control and treatment groups, we observe that they are very similar in terms of most variables at the baseline. We only observe differences in years living in the neighborhood (24 years in the treatment group compared to 19 in the control group), and in our index of participation in organizations (with a difference of 0.06σ in favor of the control group). However, when correcting for multiple hypotheses testing (following Romano and Wolf, 2005, 2016), the only variable with a significant difference is time living in the neighborhood.

We observe a 20.1% attrition rate in the follow-up survey, with slightly higher attrition in the control group at 21.9% compared to 18.2% in the treatment group. This difference is statistically significant. Appendix Table 1 presents the factors associated with attrition in the follow-up survey. Most variables are not statistically significant, but we find that household size, time living in the neighborhood, and our index of home investments and value are negatively correlated with attrition. On the other hand, the perception of security in the park has a positive and statistically significant coefficient. In Columns 5 to 8 of Table 2, we present differences between the control and treatment groups in the follow-up survey. As with the baseline sample, the only statistically significant difference is related to years living in the neighborhood. These results suggest that attrition did not create significant imbalances in terms of observable characteristics between the treatment and control groups. However, to address potential biases from attrition, we also estimate treatment effects using inverse probability weighting and Lee bounds and present these results in the paper.

Overall, the results suggest that there are no significant differences between the treatment and control groups in most of the relevant baseline variables. This indicates that attrition may not have resulted in a systematic bias between the groups. However, the main cost of attrition is likely to be the reduction

[8] Due to security concerns, we were unable to collect data for three parks in our sample, resulting in data collection for 25 pairs of parks.

in sample size and lower statistical power, rather than significant changes in observable characteristics between the groups.

2.6 Empirical Strategy

The random assignment of treatment across eligible plots allows us to estimate the effect of recovering the public squares by simply comparing average outcomes across treated and control groups. Nevertheless, to increase the precision of our estimates, our preferred strategy to estimate the causal impact of *Mi Parque* follows Duflo et al. (2008) and adopts a regression specification that controls for various baseline characteristics of households. With that goal, we use the following model:

$$Y_{1,i} = \alpha + \beta T_i + Y'_{0,i}\gamma + Z'_{0,i}\omega + \delta_i + \epsilon_i, \tag{3}$$

where $Y_{1,i}$ is an outcome of interest after treatment for household i, T_i is a dummy variable indicating that the household lives in the area receiving the treatment, $Y_{0,i}$ is a vector of outcome variables at the baseline, $Z_{0,i}$ is a vector of baseline household characteristics (including gender and years of education of the household head, time living in the neighborhood, household size, a dummy for whether the head of the household is working, monthly household income, and distance from the household to the park), δ_i are strata fixed effects, and ϵ_i is a random error term. Since treatment assignment is random, β yields an unbiased estimate of the average treatment effect of the *Mi Parque* intervention on $Y_{1,i}$. To address the potential issue of correlated outcomes within the same neighborhood, we cluster standard errors at the neighborhood level. Additionally, to account for multiple hypotheses testing, we also calculate standard errors using a step-down procedure (Romano and Wolf, 2005, 2016).

We also present treatment effects using inverse probability weighting (IPW), to account for the higher attrition in the control group (21.9% versus 18.2%, although the attrition is mostly balanced across observables). Besides, we estimate bounds of the treatment effects following the procedure suggested by Lee (2009), which assumes monotonicity on the effect of attrition on the direction of the bias. This procedure implies that the group that suffers less from sample attrition should be trimmed at the quantile of the outcome variable that corresponds to the share of 'excess observations' in this group. Thus, depending on whether the trimming is from above or from below, we estimate upper or lower bounds on the treatment effects. Notice that, in contrast to IPW estimates, Lee bounds do not depend on observable variables to model the potential impact of attrition. These two alternative procedures give estimates that are robust to potential differential attrition using different assumptions and, therefore, provide two independent approaches to evaluate the robustness of estimated treatment effects.

We use the machine learning procedure suggested by Chernozhukov et al. (2018) to estimate heterogeneous treatment effects. We include all the covariates in $Y_{0,i}$ and $Z_{0,i}$, as well as variables such as the gender of the household head, distance from home to the park, years of schooling of the household head (as a proxy for socioeconomic status), the number of children under 12 living in the household, whether the park had access to a public transportation stop, whether there were businesses that could be associated with risky behaviors (such as liquor stores and night clubs) located near the park, whether there was good public lighting in the park, population density around the park, the share of people living in apartments (as a proxy for the presence of social housing projects around the park), and averages of all outcomes at the neighborhood level at baseline.

The procedure generates "proxy predictors" for the conditional average treatment effect (CATE), which is the difference in the expected potential outcomes between treatment and control groups conditional on covariates. The goal is to identify potential heterogeneity of effects considering different dimensions at the individual, park, and neighborhood level. First, the procedure estimates the Best Linear Predictor (BLP) of the CATE and the average treatment effects (ATE) and heterogeneity loading (HET) parameters that determine heterogeneous treatment effects. Next, the procedure identifies the most and least affected quintiles when assigned to the intervention and compares the average effect for the most and the least affected groups for each outcome of the experiment. This is called Group Average Treatment Effects (GATES). Then, we examine which of the covariates are correlated with the heterogeneity in treatment effects by comparing the average characteristics of the most and the least affected groups. This procedure is called Classification Analysis (CLAN) in Chernozhukov et al. (2018). Finally, the procedure produces estimates of the treatment effects for each observation in the sample, allowing us to compute the correlation between the size of the estimated treatment effects for the different outcomes. This is important to help distinguish the mechanisms proposed by the different theories discussed before.

3 Results

In this section, we present the main results of the paper. We begin by reporting estimates of the effects on dimensions primarily related to the actual implementation of the treatment, using both follow-up survey data and information gathered by our research assistants during their visits to the parks two years after the last plot was recovered. Next, we present treatment effects for the different groups of outcomes. We then provide robustness checks that account for potential attrition effects using IPW and estimating Lee bounds. Finally, we examine mechanisms by presenting estimates of heterogeneous treatment effects and correlations among the estimated treatment effects for different outcomes.

3.1 Treatment Effects on Park Infrastructure, Use, and Maintenance

Table 3 presents the impacts of the treatment on park use and park maintenance. We see these two dimensions as the ones more closely related to actual take-up of the intervention, as they represent direct impacts of the treatment on the park. Column (1) presents a statistically and economically significant treatment effect on park use of, on average, 0.46σ. Appendix Table 3A presents treatment effects for the different variables included in this summary index (with estimates robust to MHT), so that one can look in more detail at the specific dimensions that are driving this effect. In this case, results imply that there are statistically significant effects for all questions included in the summary index. The effects are somewhat larger for use of the park by small children and for the frequency of children playing and families walking in the park, with magnitudes of more that 0.50σ. The smallest effect is estimated for the frequency of adults using the park, but even this effect is sizeable, at 0.33σ.

The second row presents, in turn, a significant impact on perceptions of park maintenance, of the order of 0.31σ. Significant effects are also present in the three questions included in the summary index (Panel

B of Appendix Table 3), with the largest impact on reductions in the presence of garbage. Interestingly, there is also an increase in the perception that neighbors should be responsible for the maintenance of the park.

In summary, the available evidence indicates that the intervention had a significant positive impact on the park, whether measured by the provision of infrastructure, use by local residents, or perceptions of quality. These findings also suggest that people value the park, as evidenced by the increase in usage and maintenance.

Before examining the impact on other outcomes, we present process information in Appendix Table 2 regarding the participation of people in treated areas in the work of recovering the public space. The results show that 36% of the households participated in meetings to plan the intervention, 32% participated in preparing the terrain, and 40% participated in the construction day activities. This indicates that a significant portion of households around the park were involved in the intervention. However, the average number of new neighbors met during the construction day was only 1.5, and only 0.7 after the park recovery. Furthermore, 82% of people did not meet any new neighbors during construction day, and 88% did not meet any new neighbors in activities after the park was constructed. These findings suggest that the construction process involved a moderate level of participation but mainly mobilized people who were already acquainted with each other, without affecting the extensive margin of meeting new people. With this process information, we move on to examine the effects on other outcomes that may be impacted by the recovery of public space.

3.2 Treatment Effects on Main Outcomes

Table 5 presents the results of the treatment on other outcomes related to our motivating theories: use and ownership of the neighborhood, trust in neighbors, crime, participation in community organizations, home investments and value, quality of life, and leisure outside the neighborhood.

The estimates in the first row of Table 6 indicate that the significant effects on park use and perceptions previously documented are accompanied by an increased sense of ownership over the neighborhood and an increased use of neighborhood areas more broadly. On average, treatment is associated with a 0.12σ increase in the variable measuring neighborhood use and ownership over the neighborhood. The results in Panel C of Appendix Table 3 suggest that the effects on this summary index are driven by improvements in the absence of graffiti in the neighborhood (with smaller effects on the presence of garbage in the neighborhood, in contrast to the effect identified for the park itself, as reported in Panel B) and by an increase in the frequency of children and families using the neighborhood. However, we do not observe significant effects on more general perceptions of the neighborhood.

The second and third rows of Table 5 present estimates of the effects on trust and participation in community organizations, respectively. The second row shows impacts on trust and social capital, with a point estimate of about 0.05σ for confidence and relationships with neighbors, and 0.13σ for participation in community associations (both robust to MHT). When examining the different components of the summary index of trust and relationships with neighbors, we observe a significant effect only on trust in known people, with a point estimate of 0.19σ. The impacts on other dimensions are considerably smaller (Panel D in Appendix Table 3). This is consistent with our previous discussion, which showed that while there was a moderate level of participation in activities related to the park recovery, most people who participated in the construction did not meet new people.

The impact of the intervention on participation in community organizations is not solely driven by increased involvement in the neighborhood council, but also by increased engagement in other community groups. This suggests that the increase in participation is not mechanically driven by the intervention (which operates through neighborhood councils), but by increases in participation in other organizations as well (Panel D in Appendix Table 3).[9]

The results in the fourth row of Table 5 indicate that the intervention has a significant positive effect on perceptions of security in the park, with an estimated improvement of 0.11σ. Further analysis of the components of this index (Panel F in Appendix 3) reveals that the improvements in security are observed during weekdays and weekends, at different times of the day (with the greatest impact seen during early mornings, afternoons, and evenings), and with reductions in incidents of vandalism, shootings and fights, drug dealing, and drug and alcohol consumption in the park.

Moving on to the fifth row of Table 5, the study examines the impact of the treatment on security in the neighborhood. The findings reveal an improvement in security of 0.05σ in the treated areas compared to the control group. Although smaller than the effects observed for security in the park, it is still a significant and noteworthy improvement. Interestingly, this result refutes the possibility that the insecurity and crime may have shifted from the park to nearby regions.[10] Further analysis of the treatment effects on specific dimensions of the index (Panel G, Appendix 3) indicates that the greatest impact is on the number of non-violent thefts, muggings, the probability of suffering violent and non-violent burglaries, and the perception of crime growth in the neighborhood. These results suggest that the park recovery project has influenced the overall crime rate in the local communities by potentially diverting the supply of criminals to more distant areas. It is possible that the improvement of the park and the increased use of the neighborhood may have increased the perceived risk of committing crimes in nearby areas but we do not have evidence to test this mechanism.

The results for investments in home improvement and quality of life are presented in rows 6 and 7 of Table 5. The point estimates for these outcomes are positive, but very small and not statistically significant. This suggests that the intervention did not have a significant impact on these outcomes. Further analysis (see Panels H and I in Appendix Table 3) shows that while some of the individual questions used to construct these summary indices are statistically significant, none of them are robust to correcting inference for MHT.

The final row in Table 5 presents the results for the impact of the intervention on leisure activities outside of the neighborhood. The findings show a decrease in the index of leisure outside the neighborhood by -0.06σ compared to the control group, indicating a potential substitution effect related to the increased time spent in the park and neighborhood. Specifically, the results in Panel J of Appendix Table 3 suggest a significant reduction in the time spent at home by adults, by about -0.19σ, which is statistically signifi-

[9]Furthermore, when examining the impact on the type of organizations people participate in, we find that participation increased more in sports clubs and religious organizations, while political parties, housing committees, parents, older people, and women groups did not experience any significant impact.

[10]Moreover, the heterogeneity analyses presented below imply that there is no evidence that the distance from the park has affected the perception of security in the neighborhood.

cant even when accounting for MHT. However, there were no significant effects on people going to other areas outside of the neighborhood, except for a decrease in the frequency of the head of the household going to malls with a p-value of 0.14. These results confirm that the recovery of public space encourages people to spend more time outside of their homes and in the neighborhood and the park.

To address the potential effects of attrition on the study's estimates, two exercises were conducted. The first one, presented in Appendix Table 4, uses inverse probability weighting (IPW) to adjust for differential attrition rates. The second exercise, presented in Appendix Table 5, estimates lower- and upper-bounds of treatment effects using the approach proposed by Lee (2009). The results using IPW largely confirm the pattern of the main exercises, although some point estimates were slightly larger in magnitude (e.g., for participation in community associations). In any case, these differences were of secondary importance. Regarding the Lee bounds, the lower bounds of most of the statistically significant treatment effects in Tables 3 and 5 were different from zero, except for the upper bound of the index of leisure outside of the neighborhood and the lower bounds of the perception of crime in the neighborhood and trust in neighborhoods, which included zero. However, this approach assumes monotonicity and may be too conservative. Overall, considering both approaches, the study concludes that the potential effects of selective attrition do not significantly affect the estimates.

It should be noted that the analysis only covers a time frame of four to five months after the intervention, which means that some long-term responses may not have been captured. Certain responses related to expensive household behaviors may require time to be confirmed as permanent or may depend on coordination among neighbors, which could take time to develop. This could explain why there were relatively small or insignificant changes observed in many dimensions of social capital and investments in home improvement. Additionally, if the analysis was conducted over a longer period and if there were permanent changes in park use and crime rates, it is possible that there would have been a response in the quality of life. Therefore, caution should be exercised when interpreting some of the non-significant results from the previous tables.

The results presented so far, particularly for park use and maintenance, neighborhood ownership and use, leisure outside the neighborhood, and crime in the park and in the neighborhood, provide strong evidence in support of the various motivating theories discussed earlier. However, it is unclear whether these findings are sufficient to differentiate between the implications of the different approaches. For example, the observed results suggest that anonymity may not be the only significant mechanism, and may not even be the primary one, for explaining the effects as proposed by the "Broken Windows" theory, given that people in treated areas did not increase their trust in unknown individuals nor did they make many new friends. Alternatively, it is possible that the mere increase in the number of people circulating in the park and the neighborhood may be adequate to generate significant responses to crime, even in situations with low social interaction and unchanged anonymity (as understood by Zimbardo, 2008), in support of the "Eyes on the Street" approach. We come back to these and other issues in greater detail in the next sub-section on mechanisms.

3.3 Mechanisms

This section explores the presence of heterogeneous effects to provide insights into the underlying mechanisms behind the results. Building upon our earlier discussion of various motivating theories, we employ the machine learning procedure introduced by Chernozhukov et al. (2018) to estimate heterogeneous treatment effects.

Table 6 presents the results obtained using the elastic net method (with similar results found using the random forest method, not reported for brevity). In Panel A, estimates of the heterogeneity loading (HET) parameters are presented, indicating the degree of heterogeneity in treatment effects. A coefficient close to 1 suggests a high estimated degree of heterogeneity, while a coefficient of 0 indicates no evidence of heterogeneity in treatment effects. We reject the null hypothesis that HET is zero at the 10% level for park use, park maintenance, and neighborhood use and ownership, indicating significant heterogeneity in treatment effects for these outcomes. For the other outcomes, we cannot reject the hypothesis of homogeneity, but the estimated coefficients are not trivial in most cases. For example, leisure outside the neighborhood (0.84), participation in community organizations (0.67), and park security (0.58) show non-trivial coefficients, and we cannot reject the null hypothesis that they are equal to 1 for all of them (not reported in the table). Moving to Panel B, the results largely confirm our previous findings, as the variables that showed statistically significant differences in the GATES analysis align with results in Panel A. Additionally, the results in Panel B are economically significant, with estimates of the same order of magnitude as the average treatment effects reported in Table 5 for all variables. Taken together, the results from Panels A and B of Table 6 suggest significant degrees of heterogeneity in treatment effects, with economically relevant magnitudes in the estimated coefficients in both the HET and GATES analyses.

We now turn to the CLAN approach proposed by Chernozhukov et al. (2018). Panel C provides a summary of the sign and significance of the estimates, while Appendix Tables 7 to 14 present the actual estimates. In Panel C, a "+" sign indicates a stronger treatment effect for neighborhoods with a higher level of the characteristic mentioned in the respective row, while a "-" sign indicates a stronger effect for neighborhoods with a lower level of the characteristic.

First, we find limited evidence of heterogeneous treatment effects related to individual-level characteristics. We just find that women who are household heads tend to report higher levels of park use. Additionally, households with a greater number of children under 12 years old tend to experience smaller impacts on neighborhood ownership and use, but larger impacts on park use. However, we do not observe significant effects based on education level or distance from the park. The latter result is particularly noteworthy as it suggests that the positive effects of the park recovery extend beyond the immediate proximity of the park, reaching areas further away.

Second, regarding household level outcomes at baseline, our analysis reveals that the treatment effects are stronger for individuals who had worse perceptions of public security outcomes at baseline. This finding suggests that baseline perceptions of security play a crucial role in understanding the effects of the treatment. In contrast, baseline levels of individual trust and participation do not appear to be associated with differential treatment effects. The impact on neighborhood use falls in between these two dimensions. Interestingly, stronger treatment effects on participation are observed among individuals who already had higher levels of participation at baseline. This contrast between the effects on security and social capital dimensions is important in understanding the underlying mechanisms. It suggests that, contrary to theories such as the "broken windows" and "coordination of provision of public goods," the dimensions of security and social capital are not closely intertwined.

Third, we observe significant relationships between park-level attributes and the magnitude of the treatment effects. The presence of undesirable businesses and public transport stops near the park is associated with larger impacts on park and neighborhood security, increased use and ownership of the neighborhood, and greater effects on park maintenance (in the case of undesirable businesses). However, these two park attributes imply lower treatment effects on participation in community organizations and have no effects on trust. Public lighting appears to have a more limited effect on the outcomes. Furthermore, areas with higher population density and a higher proportion of social housing apartments experience larger effects on park and neighborhood security, as well as greater treatment effects on neighborhood use. Higher population density is also associated with increased park maintenance, while a higher share of apartments is linked to increases in trust. However, the presence of these two attributes again implies a lower impact of the treatment on participation in community organizations, possibly reflecting higher levels of transaction costs in these areas. The contrasting signs of park level attributes on participation in community organizations compared to other significant variables align with previous findings, indicating that the effects on security outcomes do not align with the impacts on outcomes related to social capital, particularly participation in community organizations.

The results regarding the share of apartments provide support for the implications of the "Defensible Space" theory proposed by Oscar Newman. Additionally, the results on population density support explanations that emphasize the relevance of coordination costs, as areas with higher population density experience larger impacts on park maintenance.

Finally, moving on to the analysis of how baseline outcomes at the park level interact with outcomes, we uncover several interesting findings. Firstly, areas with worse park conditions, as indicated by lower levels of park use and maintenance at baseline, experienced larger effects across multiple dimensions. This underscores the importance of the park recovery in explaining the observed impacts. Secondly, we observe a clear pattern where areas with lower levels of security, particularly in the park but also to a lesser extent in the neighborhood, exhibit stronger effects on various dimensions. This suggests that an environment characterized by insecurity plays a significant role in shaping the treatment effects. Thirdly, we find that initial participation in community organizations acts as a complement to the treatment, leading to a reinforcement effect. In other words, areas with higher baseline levels of community organization participation experience stronger treatment effects. However, the results regarding initial levels of trust are less conclusive. Taken together with the other findings presented in this section, we observe a pattern where the variables related to security exhibit different effects and roles compared to variables associated with social capital, specifically participation in community organizations. These contrasting patterns suggest that the mechanisms underlying the effects of security and social capital differ from each other, as suggested by some of the motivating theories presented above.

Table 7 introduces another approach to understanding mechanisms by examining whether the estimated treatment effects on various outcomes are correlated with each other. The results indicate that the size of treatment effects on park use is positively correlated with treatment effects on all other outcomes. The correlations are particularly strong with neighborhood use and crime in the park. Similarly, treatment effects on park maintenance follow a similar pattern, showing positive correlations with most outcomes except for leisure outside the neighborhood, where the correlation is insignificant. Interestingly, the correlations between treatment effects on neighborhood use and ownership and the other outcomes are also positive and economically relevant, except for a negative correlation with treatment effects on participation in community organizations. It is worth noting that the smaller correlations are observed between treatment effects on participation in community associations and treatment effects on the other variables. The only positive and statistically significant correlations are with park use and maintenance, which are directly related to the treatment. These findings confirm previous results, suggesting that the positive and significant treatment effects on participation in community organizations do not align clearly with larger treatment effects on security and other dimensions.

Wrapping up, the results from this section indicate that the observed treatment effects do not align neatly with the mechanisms proposed by the "Broken Windows" theory, as there is a disconnect between the estimates for security outcomes and those related to social capital. This is also consistent with our previous findings regarding limited changes in meeting new people and increased trust primarily in acquaintances. Instead, the results suggest that a combination of explanations incorporating elements from the "Eyes on the Street" concept, the role of coordination (especially in areas with high population density), and the influence of social housing, as suggested by the "Defensible Space" theory, may better account for the observed treatment effects.

4 Concluding Remarks

Understanding the role of public spaces and infrastructure in shaping behaviors and social outcomes has become a topic of interest for both research and public policy. This is particularly relevant in the context of urban expansion and socioeconomic segregation experienced in developing and emerging countries. In our paper, we contribute to this area by examining the local effects of a public space recovery intervention in fragile areas of an emerging country. Specifically, we conducted a randomized experiment to investigate the impact of revitalizing deteriorated public parks in Santiago, Chile. Our findings reveal that the intervention not only improves park use and maintenance but also has positive effects on various dimensions, including security, participation in community organizations, trust in neighbors, and neighborhood use and ownership. Moreover, we do observe a reduction in leisure activities outside the neighborhood.

The impacts we document are heterogeneous along various local characteristics. We find that the effects of the intervention vary depending on the initial levels of insecurity both in the park and in the neighborhood. This indicates that one of the key mechanisms underlying the observed effects is the enhancement of security. However, we do not find the same patterns for variables associated with social capital, particularly participation in community organizations. These findings do not align with theories such as the Broken Windows idea, which emphasize that improves in crime are jointly determined with improvements in social capital, reduced anonymity, and strong interpersonal interactions. Furthermore, our evidence suggests that the increase in trust mainly applies to individuals already known to each other, and there is limited evidence of forming new friendships following the intervention. These findings suggest that a reduction in anonymity may not play a significant role in explaining the observed effects.

Furthermore, our analysis reveals that the impacts on security, park conditions, and neighborhood use are more pronounced in areas characterized by higher population density and a larger proportion of public housing apartments. These findings suggest that a combination of explanations incorporating elements from the "Eyes on the Street" concept, which emphasizes the importance of active community presence and surveillance, along with the role of coordination in densely populated areas, and the influence of social housing as proposed by the "Defensible Space" theory, may provide a more comprehensive understanding of the observed treatment effects.

In conclusion, we believe that the findings in this study contribute to the understanding of how public spaces and local infrastructure impact community life. We also hope that they shed some light on the mechanisms connecting these dimensions.

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TABLE 1: Summary Statistics

	Sample (1)	No attrition (2)
Household Head Gender	0.44	0.44
	(0.50)	(0.50)
Time living in household	21.52	22.00
	(15.60)	(15.57)
Number of household members	3.42	3.51
	(1.64)	(1.65)
Household head worked last week	0.82	0.82
	(0.38)	(0.38)
Owner lives in household	0.81	0.84
	(0.39)	(0.37)
Years of education	10.34	10.30
	(2.99)	(3.00)
Income	367.15	367.53
	(222.24)	(221.91)
Distance to park	0.08	0.08
	(0.05)	(0.05)

Notes: This table presents averages for the complete sample and for the sample without attritors. Standard errors are reported in parentheses.

TABLE 2: Balance Tests

	Full Sample				No attrition			
	Control	Treatment	Impact	MHT p-value	Control	Treatment	Impact	MHT p-value
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Household Head Gender	0.44	0.43	−0.01	1.00	0.45	0.42	−0.01	1.00
	(0.50)	(0.50)	(0.03)		(0.50)	(0.49)	(0.03)	
Time living in household	24.01	18.98	−4.91***	0.02**	24.50	19.56	−4.87**	0.02**
	(16.53)	(14.15)	(1.79)		(16.44)	(14.27)	(1.88)	
Number of household members	3.35	3.49	0.14	0.99	3.49	3.54	0.07	1.00
	(1.65)	(1.64)	(0.09)		(1.66)	(1.64)	(0.11)	
Household head worked last week	0.81	0.83	0.02	1.00	0.82	0.83	0.00	1.00
	(0.39)	(0.37)	(0.02)		(0.38)	(0.38)	(0.02)	
Owner lives in household	0.80	0.82	0.03	1.00	0.83	0.85	0.02	1.00
	(0.40)	(0.38)	(0.02)		(0.38)	(0.36)	(0.02)	
Years of education	10.23	10.45	0.22	1.00	10.20	10.39	0.16	1.00
	(3.16)	(2.81)	(0.17)		(3.18)	(2.81)	(0.16)	
Income	362.78	371.81	14.18	1.00	367.29	367.77	2.42	1.00
	(220.15)	(224.51)	(13.61)		(221.14)	(222.89)	(14.77)	
Distance to park	0.08	0.08	−0.00	1.00	0.08	0.08	−0.00	1.00
	(0.05)	(0.04)	(0.00)		(0.05)	(0.04)	(0.00)	
Use of Park	−0.05	−0.08	−0.04	1.00	−0.03	−0.08	−0.04	1.00
	(0.70)	(0.70)	(0.06)		(0.71)	(0.70)	(0.06)	
Park maintenance	−0.00	−0.02	−0.02	1.00	−0.01	−0.04	−0.03	1.00
	(0.79)	(0.81)	(0.06)		(0.80)	(0.80)	(0.05)	
Trust and relations with neighbors	0.00	0.00	0.00	1.00	−0.00	0.01	0.01	1.00
	(0.51)	(0.52)	(0.03)		(0.51)	(0.53)	(0.03)	
Ownership over and use of neighborhood	0.00	−0.03	−0.03	0.96	−0.01	−0.03	−0.02	1.00
	(0.38)	(0.39)	(0.02)		(0.38)	(0.40)	(0.03)	
Participation in community associations	0.01	−0.04	−0.06	1.00	0.02	−0.02	−0.04	1.00
	(0.85)	(0.85)	(0.03)		(0.88)	(0.87)	(0.04)	
Perception of security in neighborhood	0.00	0.02	0.02	1.00	−0.01	0.02	0.02	1.00
	(0.52)	(0.48)	(0.04)		(0.52)	(0.47)	(0.05)	
Perception of security in the park	0.01	−0.01	−0.02	1.00	−0.00	−0.04	−0.04	1.00
	(0.72)	(0.67)	(0.06)		(0.72)	(0.68)	(0.07)	
Home investments	−0.00	−0.03	−0.02	1.00	0.02	−0.01	−0.04	1.00
	(0.50)	(0.52)	(0.03)		(0.50)	(0.53)	(0.03)	
Leisure outside neighborhood	0.00	−0.03	−0.03	1.00	0.00	−0.03	−0.04	0.99
	(0.41)	(0.45)	(0.02)		(0.41)	(0.45)	(0.02)	
Quality of life	−0.00	−0.03	−0.03	1.00	−0.01	−0.03	−0.03	1.00
	(0.43)	(0.42)	(0.02)		(0.43)	(0.42)	(0.02)	

Notes: This table presents averages for the treatment and control group along with the results of mean-difference tests controlling for strata strata fixed effects. Robust standard errors are reported in parentheses. P-values controlling for multiple hypotheses testing following Romano and Wolf (2005a, 2005b, 2016) are presented in columns (4) and (8).
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

TABLE 3: Impact on Park Use and Maintenance

	Mean Control	Difference	Observations
	(1)	(2)	(3)
Park Use	-0.02	0.46^{***}	1223
		(0.05)	
		[0.00^{***}]	
Park Maintenance	-0.00	0.31^{***}	1220
		(0.04)	
		[0.00^{***}]	

Notes: This table presents treatment effects for Park Use and Maintenance. All regressions include controls for strata fixed effects. Robust standard errors are reported in parentheses. Robust p-values for multiple hypothesis following Romano and Wolf (2005a, 2005b, 2016) in square brackets.

***Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE 4: Medium-Term Impact on Park Attributes

	Mean (Control)	Difference	Observations
	(1)	(2)	(3)
Park looks in good state	0.02	0.28	105
		(0.24)	
		[0.26]	
Park has vegetation	0.03	0.60**	105
		(0.25)	
		[0.07*]	
Park has seats	−0.04	0.36**	105
		(0.15)	
		[0.00***]	
Park has hard ground	−0.02	0.21	105
		(0.24)	
		[0.87]	
Park has exercise machines	−0.01	0.05	105
		(0.24)	
		[0.89]	
Park has traditional games for infants	0.06	0.40*	105
		(0.20)	
		[0.04**]	
Park has garbage disposal	−0.03	0.45**	105
		(0.20)	
		[0.01***]	
Park looks like a safe environment	0.08	0.10	105
		(0.18)	
		[0.89]	
Park invites neighbors to socialize	−0.01	0.36**	105
		(0.18)	
		[0.07*]	
Park contributes to neighborhood welfare	0.06	0.48***	105
		(0.15)	
		[0.00***]	

Notes: This table presents medium-term treatment effects for park attributes. All regressions include controls for strata fixed effects. Robust standard errors are reported in parentheses. Robust p-values for multiple hypothesis following Romano and Wolf (2005a, 2005b, 2016) in square brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

TABLE 5: Impact on Main Outcomes

	Mean Control (1)	Difference (2)	Observations (3)
Ownership over and use of neighborhood	−0.00	0.12***	1224
		(0.03)	
		[0.00***]	
Trust in neighbors	−0.00	0.05**	1224
		(0.02)	
		[0.08*]	
Participation in community associations	−0.00	0.13**	1217
		(0.06)	
		[0.07*]	
Perception of security in the park	0.00	0.11**	1216
		(0.04)	
		[0.00***]	
Perception of security in neighborhood	0.00	0.05	1223
		(0.03)	
		[0.08*]	
Home investments	−0.00	0.01	1223
		(0.03)	
		[0.50]	
Quality of life	−0.00	0.03	1223
		(0.02)	
		[0.35]	
Leisure outside neighborhood	−0.01	−0.06**	1223
		(0.03)	
		[0.07*]	

Notes: This table presents treatment effects for the main outcomes discussed in this work. All regressions include controls for strata fixed effects. Robust standard errors are reported in parentheses. Robust p-values for multiple hypothesis following Romano and Wolf (2005a, 2005b, 2016) in square brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

TABLE 6: Heterogeneity Analysis

	(1) Use of Park	(2) Park Maintenance	(3) Ownership and Use	(4) Leisure Outside	(5) Trust	(6) Participation	(7) Park Security	(8) Neighborhood Security
	PANEL A: Best linear prediction: coefficient of heterogeneous treatment effects							
	0.990	0.76	0.81	0.84	0.30	0.67	0.58	0.45
	[0.01]***	[0.02]**	[0.02]**	[0.74]	[0.92]	[0.48]	[0.22]	[0.39]
	PANEL B: Sorted group average treatment effects (GATES), difference in treatment effects between most and least affected groups							
	0.51	0.43	0.28	0.09	0.10	0.25	0.18	0.09
	[0.02]**	[0.04]**	[0.07]*	[0.95]	[0.93]	[0.67]	[0.42]	[0.42]
	PANEL C: Classification Analysis (CLAN), difference invariables between most and least affected groups							
	PANEL C1: Household level characteristics							
Women	+				+			
Years of Education								
Children	+		−					
Distance to park								
	PANEL C2: Household level outcomes at baseline							
Trust					−			
Participates						+		
Ownership	−				−		−	−
Park Security	−	−	−		−		−	−
Neighborhood Security	−	−	−		−		−	−
	PANEL C3: Park level characteristics							
Good lighting								+
Bus stop			+			−	+	+
Bad business		+	+			−		+
Population density		+	+				+	+
Share of apartments			+	+	+	−	+	+
	PANEL C4: Park level outcomes at baseline							
Use of park	−		−	−				−
Park maintenance	−	−	−		−		−	−
Trust	−	+	+		−	−		+
Ownership					−	−	−	+
Participates	+		+			+	+	
Park security	−	−	−			+	−	−
Neighborhood security	−	−	−			+	−	−
Leisure outside		+						

Notes: Panels A and B present the medians over 100 splits for each parameter, with the p-values for the null hypothesis (parameter equal to zero) shown in brackets. Panel C provides a summary of the sign and significance of the effects reported in Appendix Tables 7 to 14. In Panel C, a "+" indicates a positive and statistically significant difference according to the CLAN analysis, while a "(-)" indicates a negative and statistically significant difference.

***Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

TABLE 7: Correlation of Estimated Treatment Effects, machine learning

	Use of park	Park mainte-nance	Ownership and use	Leisure outside	Trust	Participation	Park security	Neighborhood security
Use of park	1.000							
Park maintenance	0.380***	1.000						
Ownership and use	0.502***	0.634***	1.000					
Leisure outside	0.298***	-0.052*	0.290***	1.000				
Trust	0.289***	0.262***	0.150***	0.077**	1.000			
Participation	0.107***	0.128***	-0.107***	-0.048	-0.020	1.000		
Park security	0.491***	0.437***	0.537***	0.122***	0.392***	0.008	1.000	
Neighborhood security	0.253***	0.557***	0.634***	0.127***	0.151***	-0.245***	0.409***	1.000

Notes: The coefficients represent the partial correlations between the estimated treatment effects for each outcome at the individual level obtained using the machine learning procedure to estimate heterogeneous treatment effects.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

APPENDIX TABLE 1: Attrition Analysis

	(1)	(2)	(3)
Treatment	-0.04^{**}		-0.04^{***}
	(0.01)		(0.01)
Household Head Gender		0.02	0.02
		(0.02)	(0.02)
Time living in household		-0.00^{**}	-0.00^{***}
		(0.00)	(0.00)
Number of household members		-0.02^{***}	-0.02^{***}
		(0.01)	(0.01)
Years of education		0.00	0.00
		(0.00)	(0.00)
Log of Income		0.00	0.00
		(0.02)	(0.02)
Distance to Park		0.41	0.39
		(0.28)	(0.28)
Use of Park		−0.02	−0.02
		(0.02)	(0.02)
Park Maintenance		−0.00	−0.00
		(0.01)	(0.01)
Ownership Over and Use of neighborhood		0.02	0.01
		(0.03)	(0.03)
Participation in Community Associations		−0.01	−0.01
		(0.01)	(0.01)
Perception of Security in Park		0.06^{**}	0.06^{**}
		(0.03)	(0.02)
Perception of Security in Neighborhood		−0.02	−0.02
		(0.04)	(0.04)
Home Investments and Value		-0.05^{**}	-0.05^{**}
		(0.02)	(0.02)
Leisure Outside Neighborhood		0.01	0.00
		(0.02)	(0.02)
Quality of Life		0.00	0.00
		(0.03)	(0.03)

Notes: This table presents the treatment effect on attrition. All regressions include controls for strata fixed effects. Robust standard errors are reported in parentheses.

APPENDIX TABLE 2: Process Information on the Recovery of the Public Space for the Treatment Group

	Mean (1)	Observations (2)
Participates in pre-construction meetings	0.36	569
Participates in pre-construction work	0.32	567
Participates in park construction	0.40	537
N of neighbors met during construction	1.50	551
N of neighbors met in park after construction	0.72	548
Met neighbors during construction	0.18	551
Met neighbors in the park after construction	0.12	548

Notes: This table presents data on the implementation of the treatment, based on responses to survey questions given to subjects in the treatment group during the follow-up period. Column (1) displays the mean for each variable, while column (2) indicates the sample size

APPENDIX TABLE 3: Impact on Each Component of the Index

Variable	Answer's Levels (1)	Control Mean (2)	Raw Impact (3)	Impact (4)	MHT p-value (5)
Panel A: Park Use					
Use park adult	$0-1$	0.29	0.22^{***}	0.49^{***}	0.00^{***}
Use park children under 12 (0/1)	$0-1$	0.49	0.28^{***}	0.55^{***}	0.00^{***}
Use park children over 12 (0/1)	$0-1$	0.41	0.21^{***}	0.43^{***}	0.00^{***}
Freq use park adult	$1-5$	4.07	-0.50^{***}	0.33^{***}	0.00^{***}
Freq use children under 12	$1-5$	3.55	-0.85^{***}	0.51^{***}	0.00^{***}
Freq use children over 12	$1-5$	3.87	-0.69^{***}	0.43^{***}	0.00^{***}
Freq children play in park	$1-4$	2.54	-0.59^{***}	0.53^{***}	0.00^{***}
Freq families walk in park	$1-4$	1.97	-0.52^{***}	0.52^{***}	0.00^{***}
Panel B: Park Maintenance					
Freq new graffiti - park	$1-4$	2.43	0.71^{***}	0.56^{***}	0.00^{***}
Freq new garbage - park	$1-4$	3.05	0.29^{***}	0.25^{***}	0.00^{***}
Neighbors should be co-responsible of park maintenance	$0-1$	0.27	0.06^{***}	0.14^{***}	0.07^{*}
Panel C: Ownership Over and Use of Neighborhood					
Good neighborhood	$1-5$	2.56	-0.09	0.08	0.29
Proud to my neighborhood	$1-5$	2.63	0.02	-0.01	0.93
Want to change my neighborhood	$0-1$	0.52	-0.03	0.06	0.76
Freq new graffiti - neighborhood	$1-4$	2.37	0.30^{***}	0.24^{***}	0.01^{**}
Freq new garbage - neighborhood	$1-4$	3.06	0.13^{*}	0.11^{*}	0.19
Family visits from other neighborhoods	$0-...$	3.26	0.16	0.03	0.85
Walk in neighborhood Adult	$1-5$	3.66	-0.23^{**}	0.14^{**}	0.22
Walk in neighborhood Children under 12	$1-5$	3.25	-0.31^{**}	0.18^{**}	0.29
Walk in neighborhood Children over 12	$1-5$	2.99	-0.09	0.05	0.93
Children playing in neighborhood Adut	$1-4$	1.74	-0.18^{***}	0.21^{***}	0.02^{**}
Families walking in neighborhood	$1-4$	2.28	-0.24^{***}	0.24^{***}	0.01^{**}
Walk with family in neighborhood	$0-...$	2.28	0.54^{*}	0.11^{*}	0.39
Panel D: Trust and relationship with neighbors					
General trust	$1-10$	5.61	0.19	0.07	0.67
Trust in known people	$1-4$	2.39	-0.19^{***}	0.19^{***}	0.01^{***}
Trust in people known for the first time	$1-4$	3.58	-0.00	0.01	1.00
Trust in the family	$1-4$	1.32	-0.05^{*}	0.06^{*}	0.87
Trust in neighbors	$1-4$	2.37	-0.03	0.03	0.96
My neighbors deserve trust	$1-5$	2.69	-0.02	0.02	1.00
My neighbors do not get on well	$1-5$	3.43	-0.04	0.04	1.00
My neighbors are very solidarian	$1-5$	2.27	-0.04	0.03	1.00
N neighbors know the name	$0-...$	12.29	0.45	0.03	1.00
Frequency conversating with neighbors	$1-5$	2.99	-0.10^{*}	0.08^{*}	0.87
People I can ask a favour in the neighborhood	$0-...$	1.78	0.10	0.03	1.00
N people I can ask a favour	$0-...$	2.12	0.02	0.01	1.00
People I can ask a favour in/out neighborhood	$0-1$	0.56	0.03	0.06	0.91

continued

Appendix Table 3: Impact on Each Component of the Index *(continued)*

Variable	Answer's Levels (1)	Control Mean (2)	Raw Impact (3)	Impact (4)	MHT p-value (5)
Panel E: Participation in Community Associations					
Participate in the neighborhood council	1 − 3	2.61	−0.08	0.11	0.04**
Participate in community organization	0 − 1	0.53	0.07**	0.15**	0.00***
Panel F: Security in Park					
Perception of Security, Early morning still dark, weekday	1 − 7	4.18	0.32***	0.15***	0.05*
Perception of Security, Early morning still dark, weekend	1 − 7	3.91	0.35**	0.17**	0.02**
Perception of Security, Morning, weekday	1 − 7	5.34	0.09	0.05	0.65
Perception of Security, Morning, weekend	1 − 7	5.23	0.10	0.06	0.59
Perception of Security, Afternoon, weekday	1 − 7	5.31	0.18*	0.11*	0.30
Perception of Security, Afternoon, weekend	1 − 7	5.23	0.19**	0.11**	0.27
Perception of Security, Night, weekday	1 − 7	4.09	0.20*	0.10*	0.30
Perception of Security, Night, weekend	1 − 7	3.95	0.17	0.08	0.36
Perception of Security, Night after 00:00, weekday	1 − 7	3.47	0.12	0.06	0.65
Perception of Security, Night after 00:00, weekend	1 − 7	3.33	0.06	0.03	0.81
Frequency of young people wandering	1 − 4	1.79	−0.07	0.07	0.81
Frequency of theft and muggings	1 − 4	3.20	0.08	0.08	0.30
Frequency of vandalism	1 − 4	3.20	0.16**	0.15**	0.02**
Frequency of drug dealing	1 − 4	2.57	0.19	0.15	0.30
Frequency of shootings and fights	1 − 4	3.01	0.18**	0.16**	0.05*
Frequency of alcohol and drug consumption	1 − 4	1.96	0.27***	0.25***	0.01**
Frequency of drug consumption	1 − 4	2.06	0.07	0.05	0.81
Frequency of drug dealing	1 − 4	2.48	0.25	0.19	0.16
Panel G: Security in Neighborhood					
Perception of Security in House	1 − 7	5.69	0.09	0.06	0.90
Perception of Security in Neighborhood	1 − 7	4.82	0.04	0.02	0.91
Perception of Security of my street	1 − 7	5.06	0.09	0.05	0.83
Perception of Security of Wastelands	0 − 8	3.19	−0.24	−0.11	0.90
Perception of Security neighborhood in the night	0 − 7	3.98	−0.13	−0.07	0.90
Probability of suffering a theft	1 − 5	3.30	−0.08	0.07	0.89
Probability of suffering a mugging	1 − 5	3.23	−0.10	0.08	0.83
Probability of suffering a burglary	1 − 5	3.12	−0.12*	0.10*	0.80
Probability of suffering a violent burglary	1 − 5	2.99	−0.13*	0.11*	0.62
Frequency of young people wandering	1 − 4	1.62	0.02	0.02	0.91
Frequency of thefts and muggings	1 − 4	2.85	0.05	0.05	0.90
Frequency of vandalism	1 − 4	3.23	0.03	0.03	0.90
Frequency of drug dealing	1 − 4	2.21	0.03	0.02	0.98
Frequency of shootings and fights	1 − 4	2.77	0.12	0.11	0.58
Frequency of alcohol and drug consumption	1 − 4	2.07	0.08	0.07	0.84
N of thefts without violence	0 − ...	0.77	−0.42***	0.17***	0.02**
N of muggings	0 − ...	0.65	−0.36***	0.14***	0.05*
N of house burglaries without violence	0 − ...	0.56	−0.11	0.06	0.90
N of house burglaries with violence	0 − ...	0.17	−0.04	0.05	0.90
Growth rate of crime	1 − 3	2.14	−0.08*	0.11*	0.72
New fences in the house (0/1)	0 − 1	0.16	−0.00	0.01	0.98

continued

APPENDIX TABLE 3: Impact on Each Component of the Index *(continued)*

Variable	Answer's Levels	Control Mean	Raw Impact	Impact	MHT p-value
Panel H: Home Investment and Value	(1)	(2)	(3)	(4)	(5)
Painting/repairing external walls	$0-1$	0.13	0.00	0.01	0.98
Painting of gate	$0-1$	0.09	0.03^{**}	0.12^{**}	0.36
Putting flowers outside the entrance	$0-1$	0.29	-0.02	-0.05	0.98
Repairing external floor	$0-1$	0.07	0.01	0.05	0.98
Repairing or putting grilles	$0-1$	0.06	0.00	0.02	0.98
Painting/repairing internal walls	$0-1$	0.21	-0.01	-0.02	0.98
House extension	$0-1$	0.08	0.03^{**}	0.12^{**}	0.40
Repairing roof	$0-1$	0.11	-0.01	-0.02	0.98
Repairing of Windows	$0-1$	0.06	0.00	0.02	0.98
Repairing toilets	$0-1$	0.11	0.01	0.04	0.98
Ln Price of the House	$12-...$	16.62	-0.11	-0.19	0.61
Ln House rent	$9-...$	11.55	-0.01	-0.03	0.98
Panel I: Quality of Life					
Healthy lifestyle	$1-10$	7.72	0.24^{**}	0.12^{**}	0.32
Freq practice physical activity	$1-5$	1.44	-0.03	0.04	1.00
Perception of health	$1-5$	1.45	-0.03	0.04	1.00
Sad	$1-5$	1.47	-0.01	0.02	1.00
Irritable	$1-5$	1.50	-0.01	0.01	1.00
Angry	$1-5$	1.42	-0.02	0.03	1.00
Relaxed	$1-7$	5.07	0.05	0.03	1.00
Happy	$1-4$	2.45	0.11^{**}	0.11^{**}	0.37
Worried	$1-4$	2.54	0.05	0.05	1.00
Tired	$1-4$	2.61	0.04	0.04	1.00
Satisfaction with Life	$1-4$	2.21	0.02	0.02	1.00
I am happy with life	$1-4$	1.68	0.01	0.02	1.00
I value the quality of my family	$1-4$	1.91	0.05	0.05	0.97
We have a good time in my family	$1-4$	1.74	0.02	0.02	1.00
We respect each other in my family	$1-4$	2.79	0.02	-0.02	1.00
I feel beloved by my sons	$1-5$	4.24	0.12^{*}	-0.08^{*}	0.69
Panel J: Leisure Outside Neighborhood					
Freq watch TV Homemaker	$0-7$	6.41	-0.26^{**}	-0.19^{**}	0.04^{**}
Watch TV Children Under 12	$0-7$	6.21	-0.10	-0.06	0.99
Watch TV Children Over 12	$0-7$	5.81	0.02	0.01	1.00
Use computer Homewaker	$1-5$	4.05	0.02	-0.02	1.00
Computer Children Under 12	$1-5$	3.76	0.10	-0.09	0.75
Computer Children Over 12	$1-5$	3.61	0.06	-0.05	0.94
Freq visit a mall Homemaker	$0-7$	2.87	-0.19^{**}	-0.11^{**}	0.14
Mall Children Under 12	$0-7$	3.25	-0.11	-0.06	0.89
Mall Children Over 12	$0-7$	2.80	0.09	0.05	1.00
Time at home weekend Homemaker	$0-7$	1.03	-0.01	-0.00	1.00
Home weekend Children Under 12	$0-7$	1.53	-0.05	-0.03	0.99
Home weekend Children Over 12	$0-7$	3.08	-0.13	-0.07	0.86
Visiting family to other neighborhoods	$0-...$	2.42	0.24	0.06	0.95

Notes: This table presents each component's possible values, mean control values, raw treatment effects, as well as treatment effects after standardizing each component. Standardization included inverting scales so that the aggregate indexes have a consistent direction, whenever it was needed. All regressions include controls for strata fixed effects. P-values controlling for multiple hypotheses testing following Romano and Wolf (2005a, 2005b, 2016) are presented in column (5).

***Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

APPENDIX TABLE 4: Inverse Probability Weighting Estimates

Use of park	0.45***
	(0.05)
Park maintenance	0.30***
	(0.04)
Trust in neighbors	0.05**
	(0.02)
Ownership over and use of neighborhood	0.11***
	(0.03)
Participation in community associations	0.15**
	(0.06)
Perception of security in the park	0.11**
	(0.05)
Perception of security in neighborhood	0.05
	(0.03)
Home investments	0.02
	(0.03)
Quality of life	0.03
	(0.03)
Leisure outside neighborhood	−0.05*
	(0.03)

Notes: This table presents inverse probability weighting estimates to account for the potential effects of sample attrition. Control variables include the following baselines: Household head gender, Time living in household, Number of household members, Years of education, Log of income, Distance to park. Standard errors are reported in parentheses.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 5: Lee Bounds

	Lower and Upper Bounds	Observations
Use of park	0.40 ; 0.50	1223
	[0.33 , 0.56]	
Park maintenance	0.31 ; 0.38	1220
	[0.25 , 0.45]	
Trust in neighbors	−0.01 ; 0.08	1224
	[−0.06 , 0.12]	
Ownership over and use of neighborhood	0.08 ; 0.16	1224
	[0.04 , 0.20]	
Participation in community associations	0.11 ; 0.15	1217
	[0.02 , 0.23]	
Perception of security in the park	0.07 ; 0.19	1216
	[0.01 , 0.26]	
Perception of security in neighborhood	0.02 ; 0.10	1223
	[−0.03 , 0.15]	
Home investments	−0.06 ; 0.04	1223
	[−0.11 , 0.08]	
Quality of life	−0.01 ; 0.08	1223
	[−0.05 , 0.12]	
Leisure outside neighborhood	−0.12 ; −0.02	1223
	[−0.17 , 0.02]	

Notes: This table presents robustness checks considering potential effects of attrition.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 6: Balance on Difficulty Answering Surveys

	Mean (Control)	Difference	Observations
	(1)	(2)	(3)
How difficult was it to answer this survey?	2.42	0.07	897
(from 1=very easy to 10=very difficult)		(0.08)	
How comfortable did you feel answering this survey?	1.82	0.09	899
(from 1=very comfortable to 10=very comfortable)		(0.09)	

Notes:
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 7: Classification analysis (CLAN) for Use of park, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.520	0.340	0.170	0.030
	(0.420,0.620)	(0.250,0.440)	(0.040,0.310)	
Years of Education	10.190	9.990	0.160	1.000
	(9.480,10.850)	(9.290,10.650)	(-0.810,1.160)	
Children	1.030	0.720	0.310	0.080
	(0.820,1.230)	(0.510,0.920)	(0.010,0.620)	
Distance to Park	-1.710	-1.960	0.200	1.000
	(-2.490,-0.920)	(-2.750,-1.170)	(-0.870,1.280)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	-0.030	0.060	-0.080	0.570
	(-0.130,0.080)	(-0.040,0.160)	(-0.220,0.070)	
Participation in Community	0.150	-0.080	0.240	0.170
	(-0.030,0.330)	(-0.260,0.110)	(-0.030,0.490)	
Ownership and Use	-0.100	0.040	-0.140	0.020
	(-0.170,-0.020)	(-0.040,0.110)	(-0.240,-0.040)	
Security in Park	-0.160	0.150	-0.310	0.010
	(-0.300,-0.020)	(0.020,0.280)	(-0.510,-0.110)	
Security in Neighborhood	-0.060	0.110	-0.180	0.030
	(-0.160,0.040)	(0.020,0.210)	(-0.310,-0.040)	
PANEL C: Park level characteristics				
Good Lightning	3.660	3.490	0.180	0.390
	(3.470,3.850)	(3.290,3.680)	(-0.090,0.460)	
Bus Stop	3.450	3.310	0.130	1.000
	(3.190,3.720)	(3.050,3.590)	(-0.240,0.540)	
Bad Business	1.620	1.500	0.110	0.880
	(1.410,1.860)	(1.260,1.740)	(-0.180,0.440)	
Population Density	213.200	195.800	16.480	0.490
	(194.200,231.700)	(176.600,215.100)	(-11.230,44.050)	
Share on Apartments	0.140	0.100	0.040	0.360
	(0.090,0.190)	(0.050,0.150)	(-0.020,0.110)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.200	0.170	-0.360	0.000
	(-0.250,-0.150)	(0.120,0.220)	(-0.440,-0.290)	
Park Maintenance	-0.120	0.110	-0.220	0.000
	(-0.170,-0.080)	(0.060,0.160)	(-0.290,-0.160)	
Trust	-0.020	0.030	-0.050	0.070
	(-0.050,0.010)	(0.000,0.060)	(-0.100,0.000)	
Ownership and Use	-0.030	-0.030	0.000	1.000
	(-0.060,-0.010)	(-0.060,0.000)	(-0.040,0.040)	
Participation	0.070	-0.080	0.150	0.000
	(0.030,0.110)	(-0.120,-0.040)	(0.090,0.200)	
Security in Park	-0.050	0.090	-0.130	0.000
	(-0.120,0.010)	(0.040,0.150)	(-0.220,-0.050)	
Security in Neighborhood	-0.010	0.060	-0.070	0.030
	(-0.050,0.030)	(0.020,0.110)	(-0.120,-0.010)	
Leisure Out of Neighborhood	-0.030	-0.020	-0.010	1.000
	(-0.050,-0.010)	(-0.050,0.000)	(-0.040,0.030)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 8: Classification analysis (CLAN) for Park maintenance, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.490	0.450	0.060	0.780
	(0.390,0.590)	(0.350,0.550)	(-0.080,0.200)	
Years of Education	9.800	10.250	-0.440	0.790
	(9.100,10.510)	(9.540,10.960)	(-1.460,0.590)	
Children	0.850	0.810	0.020	1.000
	(0.640,1.050)	(0.610,1.020)	(-0.260,0.300)	
Distance to Park	-1.580	-2.270	0.600	0.580
	(-2.400,-0.800)	(-3.090,-1.460)	(-0.520,1.740)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	0.050	-0.090	0.140	0.120
	(-0.050,0.160)	(-0.190,0.020)	(-0.010,0.290)	
Participation in Community	0.140	-0.110	0.220	0.160
	(-0.030,0.320)	(-0.270,0.080)	(-0.030,0.480)	
Ownership and Use	0.010	-0.060	0.060	0.460
	(-0.060,0.090)	(-0.130,0.020)	(-0.040,0.170)	
Security in Park	-0.360	0.400	-0.750	0.000
	(-0.490,-0.230)	(0.280,0.530)	(-0.940,-0.570)	
Security in Neighborhood	-0.250	0.270	-0.530	0.000
	(-0.340,-0.160)	(0.180,0.360)	(-0.660,-0.400)	
PANEL C: Park level characteristics				
Good Lightning	3.590	3.600	-0.010	1.000
	(3.390,3.790)	(3.400,3.800)	(-0.290,0.260)	
Bus Stop	3.490	3.190	0.310	0.220
	(3.220,3.760)	(2.930,3.460)	(-0.070,0.680)	
Bad Business	1.800	1.390	0.390	0.030
	(1.580,2.010)	(1.180,1.610)	(0.080,0.700)	
Population Density	249.700	161.400	82.760	0.000
	(231.600,267.400)	(145.200,179.200)	(57.790,108.200)	
Share on Apartments	0.210	0.160	0.050	0.460
	(0.150,0.270)	(0.100,0.220)	(-0.030,0.130)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.110	-0.040	-0.070	0.220
	(-0.170,-0.050)	(-0.100,0.030)	(-0.160,0.020)	
Park Maintenance	-0.260	0.210	-0.460	0.000
	(-0.300,-0.210)	(0.160,0.260)	(-0.530,-0.390)	
Trust	0.040	-0.060	0.100	0.000
	(0.010,0.080)	(-0.090,-0.020)	(0.050,0.150)	
Ownership and Use	0.000	-0.040	0.040	0.140
	(-0.020,0.030)	(-0.070,-0.010)	(0.000,0.080)	
Participation	0.020	0.000	0.020	0.800
	(-0.020,0.070)	(-0.040,0.040)	(-0.030,0.090)	
Security in Park	-0.170	0.260	-0.440	0.000
	(-0.240,-0.110)	(0.200,0.320)	(-0.540,-0.340)	
Security in Neighborhood	-0.110	0.160	-0.270	0.000
	(-0.150,-0.070)	(0.120,0.200)	(-0.330,-0.210)	
Leisure Out of Neighborhood	0.000	-0.060	0.050	0.010
	(-0.030,0.020)	(-0.080,-0.030)	(0.020,0.090)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 9: Classification analysis (CLAN) for Ownership and use, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.430	0.410	0.020	1.000
	(0.330,0.530)	(0.310,0.510)	(-0.120,0.160)	
Years of Education	9.790	10.130	-0.320	1.000
	(9.110,10.480)	(9.450,10.840)	(-1.270,0.640)	
Children	0.700	1.030	-0.350	0.050
	(0.490,0.910)	(0.820,1.250)	(-0.650,-0.050)	
Distance to Park	-1.930	-1.860	-0.150	1.000
	(-2.680,-1.130)	(-2.630,-1.090)	(-1.210,0.920)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	0.060	-0.020	0.080	0.630
	(-0.040,0.160)	(-0.130,0.080)	(-0.070,0.230)	
Participation in Community	0.040	0.030	-0.010	1.000
	(-0.130,0.220)	(-0.140,0.200)	(-0.260,0.250)	
Ownership and Use	0.020	-0.050	0.060	0.620
	(-0.060,0.090)	(-0.120,0.030)	(-0.050,0.160)	
Security in Park	-0.210	0.180	-0.410	0.000
	(-0.340,-0.070)	(0.050,0.320)	(-0.600,-0.210)	
Security in Neighborhood	-0.170	0.170	-0.340	0.000
	(-0.260,-0.060)	(0.080,0.270)	(-0.470,-0.200)	
PANEL C: Park level characteristics				
Good Lightning	3.590	3.630	-0.030	1.000
	(3.390,3.780)	(3.420,3.820)	(-0.310,0.240)	
Bus Stop	3.920	2.730	1.200	0.000
	(3.660,4.180)	(2.470,2.990)	(0.830,1.570)	
Bad Business	1.830	1.460	0.380	0.030
	(1.590,2.060)	(1.230,1.690)	(0.070,0.710)	
Population Density	232.300	182.400	50.110	0.000
	(213.300,251.400)	(163.400,201.800)	(22.060,77.670)	
Share on Apartments	0.280	0.050	0.230	0.000
	(0.230,0.330)	(0.000,0.100)	(0.160,0.300)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.110	0.050	-0.160	0.000
	(-0.170,-0.050)	(-0.010,0.110)	(-0.250,-0.080)	
Park Maintenance	-0.150	0.130	-0.290	0.000
	(-0.200,-0.100)	(0.080,0.190)	(-0.360,-0.220)	
Trust	0.040	-0.020	0.060	0.040
	(0.010,0.070)	(-0.060,0.010)	(0.010,0.100)	
Ownership and Use	0.000	-0.030	0.030	0.380
	(-0.030,0.030)	(-0.060,0.000)	(-0.010,0.070)	
Participation	0.040	-0.030	0.070	0.020
	(0.000,0.080)	(-0.070,0.010)	(0.020,0.130)	
Security in Park	-0.160	0.150	-0.310	0.000
	(-0.220,-0.100)	(0.090,0.210)	(-0.390,-0.220)	
Security in Neighborhood	-0.080	0.100	-0.180	0.000
	(-0.120,-0.030)	(0.070,0.140)	(-0.240,-0.130)	
Leisure Out of Neighborhood	-0.020	-0.030	0.010	1.000
	(-0.040,0.010)	(-0.060,-0.010)	(-0.020,0.050)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 10: Classification analysis (CLAN) for Leisure outside, machine learning estimates

	Least Affected	Most Affected	Difference	p-value
	(1)	(2)	(3)	(4)
PANEL A: Household level characteristics				
Women	0.410	0.450	-0.050	0.950
	(0.310,0.510)	(0.350,0.540)	(-0.190,0.110)	
Years of Education	10.000	10.180	-0.140	1.000
	(9.350,10.660)	(9.520,10.870)	(-1.100,0.780)	
Children	0.830	0.790	0.050	1.000
	(0.630,1.060)	(0.580,1.000)	(-0.240,0.350)	
Distance to Park	-1.890	-1.450	-0.540	0.820
	(-2.690,-1.130)	(-2.230,-0.670)	(-1.630,0.610)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	-0.040	0.030	-0.060	0.900
	(-0.140,0.070)	(-0.090,0.130)	(-0.210,0.090)	
Participation in Community	-0.010	0.020	-0.020	1.000
	(-0.190,0.160)	(-0.160,0.210)	(-0.270,0.220)	
Ownership and Use	-0.030	-0.060	0.020	1.000
	(-0.110,0.050)	(-0.130,0.020)	(-0.090,0.130)	
Security in Park	0.010	0.010	0.020	1.000
	(-0.130,0.160)	(-0.130,0.160)	(-0.190,0.220)	
Security in Neighborhood	0.030	0.040	0.010	1.000
	(-0.070,0.140)	(-0.070,0.140)	(-0.140,0.150)	
PANEL C: Park level characteristics				
Good Lightning	3.550	3.620	-0.100	1.000
	(3.350,3.730)	(3.410,3.840)	(-0.370,0.190)	
Bus Stop	3.390	3.330	0.050	1.000
	(3.140,3.690)	(3.060,3.610)	(-0.360,0.420)	
Bad Business	1.610	1.600	0.030	1.000
	(1.360,1.860)	(1.370,1.850)	(-0.310,0.360)	
Population Density	193.900	210.200	-16.200	0.540
	(174.400,214.100)	(191.200,231.700)	(-43.840,12.510)	
Share on Apartments	0.240	0.090	0.160	0.000
	(0.180,0.290)	(0.040,0.140)	(0.070,0.240)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.130	0.020	-0.160	0.000
	(-0.190,-0.080)	(-0.030,0.100)	(-0.250,-0.080)	
Park Maintenance	0.000	-0.040	0.040	0.620
	(-0.060,0.050)	(-0.100,0.010)	(-0.040,0.120)	
Trust	-0.010	0.020	-0.030	0.390
	(-0.040,0.020)	(-0.020,0.050)	(-0.070,0.010)	
Ownership and Use	-0.030	-0.060	0.030	0.290
	(-0.050,0.000)	(-0.090,-0.030)	(-0.010,0.080)	
Participation	0.020	-0.030	0.040	0.430
	(-0.020,0.060)	(-0.070,0.010)	(-0.020,0.100)	
Security in Park	0.030	0.020	0.020	1.000
	(-0.040,0.090)	(-0.050,0.090)	(-0.070,0.120)	
Security in Neighborhood	0.040	0.040	0.000	1.000
	(-0.010,0.080)	(0.000,0.080)	(-0.060,0.060)	
Leisure Out of Neighborhood	-0.050	-0.020	-0.030	0.240
	(-0.080,-0.020)	(-0.050,0.010)	(-0.070,0.010)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 11: Classification analysis (CLAN) for Trust, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.520	0.370	0.150	0.080
	(0.420,0.610)	(0.270,0.460)	(0.010,0.290)	
Years of Education	10.510	9.530	0.940	
	(9.840,11.210)	(8.860,10.170)	(-0.010,1.890)	0.110
Children	0.840	0.870	-0.050	1.000
	(0.630,1.040)	(0.670,1.080)	(-0.330,0.250)	
Distance to Park	-1.580	-1.660	0.100	1.000
	(-2.330,-0.830)	(-2.420,-0.900)	(-0.960,1.130)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	-0.270	0.240	-0.500	0.000
	(-0.370,-0.170)	(0.150,0.340)	(-0.640,-0.360)	
Participation in Community	-0.060	0.120	-0.150	0.430
	(-0.220,0.120)	(-0.060,0.290)	(-0.390,0.090)	
Ownership and Use	-0.160	0.140	-0.300	0.000
	(-0.240,-0.080)	(0.060,0.210)	(-0.400,-0.190)	
Security in Park	-0.200	0.120	-0.330	0.000
	(-0.340,-0.070)	(-0.020,0.250)	(-0.520,-0.140)	
Security in Neighborhood	-0.050	0.090	-0.140	0.080
	(-0.140,0.050)	(-0.010,0.190)	(-0.270,-0.010)	
PANEL C: Park level characteristics				
Good Lightning	3.570	3.640	-0.070	1.000
	(3.370,3.770)	(3.450,3.840)	(-0.360,0.200)	
Bus Stop	3.260	3.480	-0.190	0.670
	(2.990,3.530)	(3.210,3.750)	(-0.580,0.210)	
Bad Business	1.530	1.610	-0.050	1.000
	(1.320,1.770)	(1.380,1.840)	(-0.370,0.270)	
Population Density	213.300	205.300	8.180	1.000
	(193.800,232.500)	(186.400,224.200)	(-20.270,36.060)	
Share on Apartments	0.220	0.110	0.110	0.010
	(0.160,0.270)	(0.060,0.170)	(0.030,0.180)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.090	-0.030	-0.070	0.230
	(-0.150,-0.030)	(-0.090,0.030)	(-0.160,0.020)	
Park Maintenance	-0.070	0.080	-0.150	0.000
	(-0.120,-0.020)	(0.020,0.130)	(-0.230,-0.070)	
Trust	-0.050	0.050	-0.100	0.000
	(-0.080,-0.020)	(0.010,0.080)	(-0.140,-0.050)	
Ownership and Use	-0.050	0.010	-0.070	0.000
	(-0.080,-0.030)	(-0.020,0.040)	(-0.110,-0.030)	
Participation	-0.010	0.030	-0.030	0.740
	(-0.050,0.030)	(-0.020,0.070)	(-0.090,0.030)	
Security in Park	0.020	0.010	0.010	1.000
	(-0.050,0.080)	(-0.060,0.070)	(-0.070,0.110)	
Security in Neighborhood	0.040	0.020	0.010	1.000
	(0.000,0.080)	(-0.010,0.060)	(-0.040,0.070)	
Leisure Out of Neighborhood	-0.020	-0.030	0.010	1.000
	(-0.050,0.000)	(-0.060,-0.010)	(-0.030,0.040)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 12: Classification analysis (CLAN) for Participation, machine learning estimates

	Least Affected	Most Affected	Difference	p-value
	(1)	(2)	(3)	(4)
PANEL A: Household level characteristics				
Women	0.430	0.440	-0.010	1.000
	(0.330,0.520)	(0.340,0.550)	(-0.150,0.130)	
Years of Education	9.810	9.790	0.030	1.000
	(9.110,10.560)	(9.080,10.510)	(-0.980,1.040)	
Children	0.890	0.790	0.060	1.000
	(0.670,1.100)	(0.580,1.000)	(-0.230,0.370)	
Distance to Park	-1.820	-1.540	-0.410	0.930
	(-2.560,-1.040)	(-2.350,-0.750)	(-1.460,0.670)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	-0.030	0.030	-0.060	0.870
	(-0.130,0.080)	(-0.070,0.140)	(-0.210,0.090)	
Participation in Community	0.800	-0.370	1.120	0.000
	(0.580,1.030)	(-0.560,-0.170)	(0.850,1.430)	
Ownership and Use	-0.080	0.020	-0.100	0.120
	(-0.160,0.000)	(-0.060,0.100)	(-0.210,0.000)	
Security in Park	0.120	-0.060	0.200	0.130
	(-0.020,0.260)	(-0.210,0.090)	(-0.010,0.410)	
Security in Neighborhood	0.060	0.000	0.070	0.660
	(-0.040,0.160)	(-0.110,0.100)	(-0.070,0.210)	
PANEL C: Park level characteristics				
Good Lightning	3.490	3.590	-0.120	0.790
	(3.290,3.700)	(3.390,3.810)	(-0.400,0.160)	
Bus Stop	2.900	3.680	-0.710	0.000
	(2.650,3.170)	(3.430,3.950)	(-1.090,-0.340)	
Bad Business	1.350	1.880	-0.630	0.000
	(1.110,1.570)	(1.670,2.110)	(-0.930,-0.280)	
Population Density	198.400	198.500	-4.560	1.000
	(179.300,217.400)	(180.000,217.700)	(-31.930,22.610)	
Share on Apartments	0.120	0.200	-0.090	0.050
	(0.060,0.170)	(0.150,0.250)	(-0.160,-0.010)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.030	-0.070	0.030	1.000
	(-0.090,0.030)	(-0.130,-0.010)	(-0.050,0.110)	
Park Maintenance	0.010	-0.010	0.020	1.000
	(-0.050,0.070)	(-0.070,0.050)	(-0.070,0.120)	
Trust	-0.040	0.040	-0.080	0.000
	(-0.070,-0.010)	(0.010,0.070)	(-0.120,-0.040)	
Ownership and Use	-0.070	0.020	-0.090	0.000
	(-0.090,-0.040)	(-0.010,0.050)	(-0.130,-0.050)	
Participation	0.070	-0.040	0.120	0.000
	(0.030,0.120)	(-0.080,0.000)	(0.060,0.180)	
Security in Park	0.120	-0.050	0.180	0.000
	(0.050,0.190)	(-0.120,0.020)	(0.090,0.280)	
Security in Neighborhood	0.070	-0.010	0.080	
	(0.030,0.120)	(-0.050,0.040)	(0.020,0.140)	0.020
Leisure Out of Neighborhood	-0.020	-0.040	0.010	0.930
	(-0.050,0.000)	(-0.060,-0.010)	(-0.020,0.050)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 13: Classification analysis (CLAN) for Park security, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.490	0.420	0.090	0.390
	(0.400,0.590)	(0.330,0.520)	(-0.050,0.230)	
Years of Education	9.930	9.600	0.330	1.000
	(9.230,10.640)	(8.900,10.320)	(-0.670,1.340)	
Children	0.850	0.930	-0.080	1.000
	(0.620,1.070)	(0.710,1.150)	(-0.400,0.230)	
Distance to Park	-1.670	-1.540	0.000	1.000
	(-2.430,-0.870)	(-2.280,-0.780)	(-1.060,1.070)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	-0.050	0.070	-0.120	1.000
	(-0.150,0.060)	(-0.030,0.180)	(-0.270,0.030)	
Participation in Community	0.050	0.020	0.020	1.000
	(-0.150,0.220)	(-0.160,0.190)	(-0.240,0.260)	
Ownership and Use	-0.100	0.080	-0.190	0.000
	(-0.170,-0.030)	(0.010,0.160)	(-0.300,-0.080)	
Security in Park	-0.210	0.160	-0.370	0.000
	(-0.350,-0.070)	(0.020,0.300)	(-0.560,-0.170)	
Security in Neighborhood	-0.070	0.070	-0.150	0.060
	(-0.170,0.020)	(-0.020,0.170)	(-0.280,-0.010)	
PANEL C: Park level characteristics				
Good Lightning	3.660	3.490	0.130	0.710
	(3.450,3.860)	(3.310,3.680)	(-0.160,0.400)	
Bus Stop	3.620	2.850	0.710	0.000
	(3.340,3.900)	(2.580,3.120)	(0.300,1.100)	
Bad Business	1.410	1.730	-0.310	0.100
	(1.190,1.640)	(1.490,1.960)	(-0.630,0.000)	
Population Density	224.800	167.300	57.630	0.000
	(206.600,242.800)	(150.200,185.000)	(33.620,81.850)	
Share on Apartments	0.230	0.110	0.100	0.020
	(0.170,0.290)	(0.060,0.170)	(0.030,0.180)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.050	-0.020	-0.020	1.000
	(-0.110,0.010)	(-0.080,0.030)	(-0.110,0.060)	
Park Maintenance	-0.120	0.150	-0.280	0.000
	(-0.180,-0.070)	(0.100,0.200)	(-0.350,-0.200)	
Trust	0.010	0.010	0.010	1.000
	(-0.030,0.040)	(-0.020,0.040)	(-0.040,0.060)	
Ownership and Use	-0.060	0.040	-0.090	0.000
	(-0.080,-0.030)	(0.010,0.070)	(-0.130,-0.050)	
Participation	0.040	-0.040	0.090	0.000
	(0.010,0.080)	(-0.080,0.000)	(0.040,0.140)	
Security in Park	-0.060	0.060	-0.120	0.040
	(-0.130,0.010)	(-0.010,0.130)	(-0.220,-0.020)	
Security in Neighborhood	-0.030	0.040	-0.070	0.040
	(-0.070,0.010)	(0.000,0.080)	(-0.130,-0.010)	
Leisure Out of Neighborhood	-0.010	-0.030	0.020	0.370
	(-0.030,0.010)	(-0.060,-0.010)	(-0.010,0.060)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

APPENDIX TABLE 14: Classification analysis (CLAN) for Neighborhood security, machine learning estimates

	Least Affected (1)	Most Affected (2)	Difference (3)	p-value (4)
PANEL A: Household level characteristics				
Women	0.400	0.440	-0.030	1.000
	(0.300,0.500)	(0.340,0.540)	(-0.160,0.110)	
Years of Education	9.770	10.020	-0.220	1.000
	(9.060,10.450)	(9.330,10.690)	(-1.190,0.770)	
Children	0.770	0.950	-0.210	0.320
	(0.570,0.970)	(0.750,1.160)	(-0.490,0.080)	
Distance to Park	-1.700	-1.800	0.160	1.000
	(-2.500,-0.930)	(-2.580,-1.040)	(-0.910,1.270)	
PANEL B: Household level outcomes at baseline				
Trust in Neighbors	0.070	-0.040	0.090	0.450
	(-0.030,0.180)	(-0.140,0.070)	(-0.060,0.250)	
Participation in Community	-0.010	0.120	-0.090	0.900
	(-0.190,0.170)	(-0.070,0.300)	(-0.370,0.160)	
Ownership and Use	0.030	-0.030	0.060	0.590
	(-0.050,0.110)	(-0.110,0.040)	(-0.050,0.170)	
Security in Park	-0.370	0.290	-0.640	0.000
	(-0.500,-0.230)	(0.160,0.420)	(-0.830,-0.450)	
Security in Neighborhood	-0.250	0.230	-0.470	0.000
	(-0.330,-0.150)	(0.130,0.320)	(-0.600,-0.340)	
PANEL C: Park level characteristics				
Good Lightning	3.730	3.390	0.310	0.070
	(3.520,3.930)	(3.180,3.590)	(0.020,0.600)	
Bus Stop	3.900	2.940	0.990	0.000
	(3.630,4.170)	(2.670,3.200)	(0.610,1.380)	
Bad Business	2.440	1.120	1.370	0.000
	(2.220,2.670)	(0.890,1.350)	(1.050,1.670)	
Population Density	225.500	185.700	43.790	0.000
	(206.500,245.200)	(166.500,204.700)	(16.130,70.270)	
Share on Apartments	0.290	0.090	0.200	0.000
	(0.240,0.350)	(0.040,0.150)	(0.120,0.280)	
PANEL D: Park level outcomes at baseline				
Use of Park	-0.110	-0.020	-0.090	0.090
	(-0.170,-0.050)	(-0.080,0.050)	(-0.180,0.000)	
Park Maintenance	-0.140	0.100	-0.260	0.000
	(-0.200,-0.090)	(0.050,0.150)	(-0.330,-0.180)	
Trust	0.100	-0.060	0.170	0.000
	(0.070,0.130)	(-0.090,-0.030)	(0.130,0.210)	
Ownership and Use	0.040	-0.070	0.110	0.000
	(0.010,0.070)	(-0.090,-0.040)	(0.070,0.140)	
Participation	0.010	0.040	-0.040	0.450
	(-0.040,0.050)	(0.000,0.090)	(-0.100,0.030)	
Security in Park	-0.240	0.220	-0.450	0.000
	(-0.300,-0.170)	(0.160,0.270)	(-0.530,-0.360)	
Security in Neighborhood	-0.130	0.140	-0.270	0.000
	(-0.160,-0.090)	(0.100,0.180)	(-0.320,-0.220)	
Leisure Out of Neighborhood	-0.010	-0.040	0.020	0.370
	(-0.040,0.010)	(-0.060,-0.010)	(-0.010,0.060)	

Notes: The medians over 100 splits are reported. The 90% confidence intervals are shown in parentheses. P-values for the null hypothesis (parameter equal to zero) are indicated in brackets.
***Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.