Original Research Article

The Impact of Social Norms, Wealth Inequality, and Municipal Policy on Recycling Infrastructure in Glen Rock, New Jersey

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ABSTRACT

This study examines how social norms, wealth inequality, and municipal infrastructure intersect to shape recycling behavior in Glen Rock, New Jersey. Using a mixed-methods design that combines 4 semi-structured interviews with residents, local officials, and environmental council members alongside a structured survey of 20 households, the research finds that recycling in Glen Rock is primarily driven by internalized responsibility and guilt rather than external social pressure. While residents express strong personal commitment to recycling, their motivation is undermined by persistent confusion about plastics, limited program scope, and doubts about whether collected materials are actually processed. The town's affluence ensures reliable infrastructure and consistent collection, but wealth does not eliminate distrust or frustrations, nor does it guarantee superior environmental outcomes. Instead, Glen Rock illustrates how affluence can mask subtle vulnerabilities in recycling participation, challenging the logic of the Environmental Kuznets Curve, which is a theory suggesting that more economically developed areas have less environmental degradation. The findings suggest that municipal transparency, clear communication, and complementary waste reduction policies are essential for sustaining long-term engagement, even in affluent communities.

Keywords: Recycling behavior; Social norms; Affluent communities; Municipal infrastructure; Waste management policy; Public trust and transparency

INTRODUCTION

Despite the proliferation of recycling programs in the United States beginning in the 1970s, only 21% of households recycle (1). However, an individual's recycling behavior is not just dependent on their solo will to recycle; it is also dependent on the overall social norms surrounding recycling within the communities they are a part of, their beliefs in the impact of recycling on the environment around them, and the availability and knowledge of recycling programs in the area in which they live (2). Although much research today looks into how the perception of recycling can impact recycling behavior, there are not many articles examining the impact of wealth inequality, municipal infrastructure, or social norms on recycling. More attention must focus on how these structural and community-level factors interact to shape recycling practices, particularly in affluent communities where resources and infrastructure are readily available, yet participation rates may still fall short of expectations. Understanding whether wealth translates into environmental action, or whether other barriers persist regardless of socioeconomic advantage,

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is critical for developing more effective and equitable waste management policies.

Glen Rock, New Jersey is a suburban town which is largely Caucasian and with a median household income of $210,369 (3). The town resides in Bergen County, one of the wealthiest counties in the United States. Recycling is also legally mandatory, according to an ordinance from 1993, which required that various waste must be sorted into different categories (e.g., aluminum cans, newspapers and magazines, mixed paper, etc.) to ultimately be put out onto the curbs of streets to be collected for recycling (4, 5). The town's level of wealth also risks masking subtler inequalities, such as differences in confidence, knowledge, or willingness to engage with sustainability practices. By situating the analysis within a legally enforced recycling regime that has been in place since 1993, the study is able to inquire how local norms and institutional structures interact with wealth to both sustain participation and obscure vulnerabilities, raising questions about whether similar dynamics would emerge in less affluent or more demographically diverse communities. This leads to this study's primary question: In Glen Rock, how do local social norms and wealth inequality interact to influence household recycling participation, and how is this further moderated by municipal recycling infrastructure?

METHODS AND MATERIALS

This study used a mixed-methods design, combining semi-structured interviews with a structured online survey. The use of both qualitative and quantitative data will allow for a more nuanced understanding of individual recycling behaviors, perceptions of social norms, and the role of socioeconomic factors and municipal infrastructure. By utilizing a literature review, a survey, and multiple interviews, this paper will examine how residents of Glen Rock understand, talk about, and act on recycling, and whether their behavior reflects the town's wealth, infrastructure, and environmental expectations. Together, these methods will help assess whether Glen Rock's status as a wealthy and legally recycling-mandated town results in stronger adherence to recycling practices, or whether convenience, confusion, and cultural norms override those advantages. These interviews were conducted and the survey collected data during July 2025. This study involved minimal-risk human participation (anonymous survey and voluntary interviews) and followed ethical standards for informed consent and confidentiality.

Participants and Sampling

Semi-structured interviews were conducted with 4 individuals with different perspectives on recycling in Glen Rock. Purposeful sampling will be used to ensure that participants come from distinct groups with varied relationships to recycling. Interviews with parents and residents who frequently recycle explored personal motivations, perceptions of neighborhood norms, and informal discussions about recycling habits. Members of the Glen Rock Environmental Council provided insights on town-wide challenges, resident feedback, and the overall effectiveness of local recycling initiatives. Elected officials, including the Mayor and Council members, were interviewed to examine political and administrative challenges in promoting or enforcing recycling, as well as their perceptions of resident engagement. Additionally, a staff member from the town's recycling center was consulted to gain practical insight into the operational aspects of the municipal recycling program, including collection procedures, common contamination issues, and logistical challenges. The survey was conducted online, distributed via a Qualtrics link. The survey was shared through community networks, local groups, and word of mouth, with a target of 20-30 completed responses from Glen Rock residents.

Data Collection

The interviews were conducted virtually via video or phone call to accommodate participants' availability. Each session lasted 20–30 minutes and followed a semi-structured protocol, ensuring consistency across interviews while allowing flexibility to probe deeper into participant responses. Questions were tailored to each group (e.g., residents will be asked about personal habits and social norms, while officials were asked about policy issues and public feedback of waste management programs). Notes were taken during each interview, and where permitted, conversations were audio-recorded for accuracy.

The survey began with demographic and contextual questions to identify respondents' neighborhood, household composition, and housing status (renting versus owning). These variables provided insight into how socioeconomic differences intersect with recycling behavior. Respondents then completed a series of Likert-scale items organized into two categories: personal opinions (Items designed to measure individual motivations, social pressure, and internalized norms surrounding recycling such as "I feel guilty when I throw recyclable items in the regular trash") and

objective statements (items assessing perceptions of municipal services, equity across neighborhoods, and broader impacts of recycling, such as "My recycling is consistently collected and processed correctly"). In addition, one open-ended question asked respondents to describe what motivates them to recycle and what prevents them from recycling more frequently. These responses provided richer qualitative context to supplement the Likert-scale data.

Data Analysis

Interview data were analyzed using thematic analysis to identify recurring patterns, perspectives, and contradictions across participant groups. Audio recordings and interview notes were reviewed systematically to extract key themes related to recycling motivations, barriers, social norms, and perceptions of municipal infrastructure. Common themes were identified across all four participant groups, while unique insights specific to each stakeholder group (residents, Environmental Council members, elected officials, and recycling center staff) were also noted. Particular attention was paid to how different stakeholders described the same issues, such as contamination, participation rates, or program effectiveness, to reveal potential gaps between policy intentions, operational realities, and resident experiences.

Survey data were analyzed with the means and standard deviations were calculated for each statement using the Likert-scale to identify trends in personal opinions and objective assessments of the recycling program. The categories of Personal Opinions and Objective Statements distinguished between internalized motivations and perceptions of external factors. Responses were examined to identify which factors (e.g., guilt, social pressure, municipal reliability) showed the strongest agreement or disagreement among participants. The open-ended question asking what motivates and prevents recycling was analyzed qualitatively by identifying recurring themes and specific frustrations mentioned by multiple respondents. These qualitative responses were used to contextualize and elaborate on the quantitative findings, providing deeper insight into the barriers and enablers of recycling behavior that may not have been fully captured by the Likert-scale items alone.

Likert-scale survey responses were numerically coded on a four-point scale from 1 (Strongly Disagree) to 4 (Strongly Agree) to allow for quantitative analysis of trends. Open-ended survey responses and interview data were coded inductively, with recurring ideas grouped into thematic categories related to motivation, barriers, trust in infrastructure, and social norms.

RESULTS

The survey, with a total of 20 respondents, had an average of 3.50 on the statement "I feel it is important in my household to recycle as often as possible" (M = 3.50, SD = 0.76) and an average of 3.50 for the statement "I feel guilty when I throw recyclable items in the trash" (M = 3.50, SD = 0.50) as shown in Table 1 below, indicating that those who live in Glen Rock have a general sense of personal commitment and guilt when it comes to their own expectations to recycle. There was also an average of 3.29 for "People who recycle are more responsible citizens" (M = 3.29, SD = 1.03), further supporting the notion that most believe recycling is a fundamentally good action. However, there was less support reflected for the existence of strong external pressures; there was an average of 2.83 for "People in my neighborhood would disapprove if I did not recycle" (M = 2.83, SD = 0.69), and an average of 2.00 for "I feel social pressure from my community to recycle" (M = 1.86, SD = 0.82). This suggests that recycling in Glen Rock is primarily driven by internalized responsibility rather than neighborhood norms. The councilmember also said that "most residents recycle as they are supposed to", reinforcing the survey findings and the notion that residents see recycling as a normal and widely practiced behavior, while (2) compliance is high, but norms around recycling are not perfect, which is reflected in some of the survey responses.

This perception of recycling as a widespread but individually motivated practice was echoed by a councilmember, who noted, "I believe most residents recycle as they are supposed to, although I know the Borough has to throw out some recycled materials because they are actually non-recyclable or not rinsed off." While the official acknowledged occasional mistakes, their statement reinforces the survey finding that compliance is generally high and that recycling is viewed as a common, expected behavior in the community.

In the interview with the town's environmental council member, they noted that they were "not aware of feedback about recycling programs," suggesting that recycling may be perceived as routine and uncontroversial within the community. This aligns with survey findings that residents value recycling personally but experience little social pressure (M = 1.86). They also added that

Table 1. *Summary of survey responses (N = 20) showing mean Likert-scale scores and standard deviations for personal opinions and objective statements related to recycling motivations, perceived social norms, and perceptions of municipal recycling infrastructure in Glen Rock, New Jersey. Likert-scale responses range from 1 (Strongly Disagree) to 4 (Strongly Agree).*

	Mean Likert Score (out of 4)	Standard Deviation
Category: Personal Opinions		
I feel it is important in my household to recycle as often as possible.	3.50	0.76
People in my neighborhood would disapprove if I did not recycle.	2.83	0.69
I feel social pressure from my community to recycle.	1.86	0.82
I feel guilty when I throw recyclable items in regular trash.	3.50	0.50
Most people in my town recycle regularly.	2.88	0.60
People who recycle are more responsible citizens.	3.29	1.03
Recycling has a measurable positive environmental impact.	3.25	0.97
Clearer instructions for recycling increases the rate I recycle.	3.38	0.70
Objective Statements		
People in higher-income neighborhoods recycle more than those in lower-income neighborhoods.	2.50	0.50
My recycling is consistently collected and processed correctly.	3.13	0.78
The recycling instructions provided by my municipality are clear.	2.88	0.60
Recycling in my area requires more effort than it's worth.	1.88	0.93
My local recycling program is reliable.	2.88	0.78

when it comes to the bigger picture about helping the environment, "reducing usage is more important than recycling, especially when it comes to plastics". This sentiment reflects a growing shift in norms toward consumption reduction and suggests that some residents see norms around recycling as insufficient, or even misplaced, when the larger issue is consumption.

Social Norms

Social norms have been shown to be a strong determinant of household recycling behavior (6) and can be parsed into two categories: descriptive norms (beliefs about what others do) and injunctive norms (actions others actually perform). Empirical evidence shows that both types of norms influence recycling rates, but they interact differently with structural incentives to recycle. Community-level recycling rates and external social norms (both descriptive and injunctive norms) are positively correlated with individual recycling (7). The kinds of motivations often cited for recycling were the beliefs that recycling is good for the environment and that recycling is a civic duty that everyone should do (8). A report from the Recycling Partnership found that the majority of people surveyed believed recycling was a good thing, but did not know much about their city's own recycling programs (1). Those who live in communities where recycling is pushed as a good activity are more aware of their area's recycling programs and have more infrastructure to support more methods of recycling (9). Moreover, other studies reflect that individuals who are duty-oriented seek to maintain an image of being socially responsible, and may recycle even at personal cost if they see it as their responsibility (10, 11).

However, social motivation alone does not fully explain recycling behavior. It was also found that when people were financially incentivized to recycle, they would recycle more often compared to those who were encouraged by a campaign that supported recycling (12, 13). Thus, while internalized social norms and a sense of civic duty clearly motivate individuals to recycle, research also shows that external incentives, such as financial rewards, can further increase recycling

participation. This suggests that both psychological and material factors interact to shape recycling behavior.

Wealth Inequality

Beyond social norms, socioeconomic context further shapes recycling behavior. Existing research on the relationship between recycling behavior and wealth reveals a complex interplay between income levels, waste generation, and collection rates. Across countries, higher income is generally associated with greater waste generation, with high-income countries producing about 34 percent of global waste despite having a smaller share of the population. Within metropolitan areas, however, the link between wealth inequality and recycling performance varies: in Barcelona, smaller income gaps between local areas still translate into differences in municipal separate collection rates (SCRs), while in London, larger income gaps do not mirror SCR disparities (14). At the global scale, waste generation per capita is projected to rise by 19 percent in high-income countries by 2050, compared to increases of 40 percent or more in low-and middle-income countries, reflecting growing consumption across all wealth levels but with differing trajectories (15).

E-waste patterns show a similar association between affluence and environmental burdens, as e-waste generation rises steadily with income, while the capacity to collect and recycle formally depends heavily on governance quality and institutional trust (16). This finding challenges the Environmental Kuznets Curve, which predicts that environmental degradation peaks and then falls at higher income levels; instead, rising consumption continues to create waste burdens even in wealthy countries (17). Within countries, collection disparities also reveal inequality in recycling infrastructure: in low-income nations, urban areas collect 48 percent of waste, while rural areas collect only 26 percent, in contrast to over 90 percent collection in Europe, Central Asia, and North America (18). Taken together, these global and metropolitan patterns suggest that even when infrastructure is equally available, recycling rates may differ by income due to distinct behavioral drivers.

Socioeconomic factors also shape the motivations and constraints underlying recycling behaviors. Higher-income groups tend to be more influenced by social desirability, environmental awareness, and status-related peer effects, whereas lower-income groups are more strongly guided by financial considerations (19). These findings imply that wealth influences both the quantity of waste generated and the likelihood of recycling, but the strength and direction of this relationship depend on local inequality patterns, governance quality, and the balance between material incentives and social pressures.

These broader findings provide a useful lens for looking at Glen Rock. Glen Rock is a relatively affluent borough (with median household income above $210,000, well above the United States' average of around $83,000) with low poverty levels (2). Because the population is relatively socioeconomically homogeneous, wealth inequality in recycling participation may not be as visible to officials or residents. The data from the survey suggests respondents are not strongly convinced of wealth-based differences, and most reject the idea that recycling effort is prohibitive. Still, the modest agreement of the statement "People in higher-income neighborhoods recycle more than those in lower-income neighborhoods" (M=2.57) hints at general awareness of inequality and might reflect perceptions of general U.S. patterns rather than lived experiences in Glen Rock itself.

Infrastructure

While socioeconomic context matters, recycling outcomes still heavily depend on the systems that support them. Research indicates that household recycling behavior is strongly influenced by the combination of social norms, infrastructure, and policy design. Only about 28% of Americans report that social norms in their communities strongly encourage recycling, while 22% perceive norms as discouraging (20), suggesting that local social expectations are often inconsistent and may limit participation. Empirical studies show that proximity to social groups (like neighbors, housemates, or district residents) can directly influence recycling intentions and self-reported behavior, highlighting the importance of local norms in shaping engagement (21). Access to convenient recycling services also plays a critical role: increasing the supply of services through door-to-door collection or drop-off centers significantly boosts household recycling, and residents are willing to sort materials at home even when it is time-consuming, provided programs are clear and accessible (10).

However, confusion about proper recycling practices remains widespread, with 63% of Americans reporting difficulty interpreting product labels and 78% recalling little to no communication from local programs, emphasizing the need for clear instructions and consistent guidance (1). Policy tools such as monetary incentives can further encourage recycling, particularly when carefully designed to avoid diminishing morally

motivated voluntary contributions, as demonstrated by the success of volume-based fees in Korea (8). Underlying motivations for recycling remain largely driven by environmental concern and civic duty, with situational cues and infrastructure quality able to activate these pro-environmental values. Together, these findings suggest that effective recycling behavior depends not only on individual attitudes but also on the availability, clarity, and reliability of municipal recycling infrastructure, reinforced by local norms and thoughtfully designed policies.

The survey responses indicate that Glen Rock's recycling infrastructure is consistent and strong, which correlates to its median wealth and the taxes that pay for its waste programming. The statement "My recycling is consistently collected and processed correctly" had an average of M = 3.13. The open-ended answers further highlight that positive motivation to recycle was derived from the consistency and reliability of the municipal services, reinforcing survey perceptions of consistent collection.

However, several limitations discouraged participation, including the inability to recycle all types of plastic and frustration over restrictions on items such as produce boxes and hummus tubs. Respondents also expressed distrust or uncertainty about processing, with statements like, "I have no idea what happens to the recycling after it's collected…" and "Discouraged to recycle when I see the recycling and waste bin lead to the same trash bag." These responses suggest that, while the infrastructure is generally reliable, gaps in clarity, scope, and transparency of recycling procedures limit resident confidence and may reduce participation. This highlights that residents' recycling behavior is influenced not only by the physical reliability of the program but also by the perceived effectiveness and comprehensiveness of municipal recycling services.

The town council member further identified confusion about plastics as "probably the biggest challenge to increasing recycling rates," dovetailing with survey responses (M = 3.38 agreement that clearer instructions would increase recycling) and with open-ended frustrations about not being able to recycle all kinds of plastics. They also mentioned a new Skip the Stuff ordinance, which requires restaurants to not offer plastic cutlery with takeout orders unless the customer explicitly asks, which situates recycling within a broader municipal effort to manage waste, highlighting how policy tools focus increasingly on reduction rather than just recycling services.

DISCUSSION

Recycling as a Private Virtue

The survey findings reinforce existing research that internalized social norms strongly influence recycling behaviors, but they also complicate the distinction between descriptive and injunctive norms (22). Glen Rock residents reported high personal responsibility and guilt when they did not recycle, echoing the idea of recycling as a civic duty (8, 10). Yet, they simultaneously expressed low levels of peer disapproval or community pressure, indicating that recycling is not experienced as a socially enforced expectation.

Recycling in Glen Rock functions more as a "private virtue" than a "publicly enforced norm." Even though recycling is mandated by ordinance, compliance seems to stem less from fear of sanction or social monitoring and more from internalized responsibility.

This dynamic has implications for how resilient recycling practices are in the face of structural challenges. While personal motivation can compensate for weak social enforcement, it may not withstand the obstacles of unclear rules or low institutional trust. For example, survey respondents highlighted frustration with confusing plastic classifications and uncertainty about whether materials were truly being recycled once collected. In such cases, even strong internal norms could be undermined, leading to inconsistent behaviors. This underscores that social norms cannot be analyzed in isolation but must be understood in interaction with infrastructure and trust in municipal systems.

Environmentalism Within American Affluence

Residents reported strong personal responsibility and guilt when not recycling, framing recycling as an individual choice rather than a socially policed action. In the context of Glen Rock, local recycling behaviors may be less about wealth and more about cultural and infrastructural clarity; thus, waste management infrastructure must not only function consistently but also communicate effectively to sustain high participation.

The findings on wealth in Glen Rock provide an important counterpoint to both global and metropolitan studies. Research has shown that higher incomes correlate with greater waste production and, in some contexts, with disparities in recycling performance (14, 15). Yet in Glen Rock, where the population is both affluent and relatively homogeneous, visible inequality in recycling participation was minimal.

Residents largely dismissed the idea that recycling was prohibitive or stratified by income, which contrasts with patterns observed in more socioeconomically diverse settings.

This does not mean that wealth guarantees recycling success, however. Respondents acknowledged that some plastics cannot be recycled and voiced doubts about how recycling is processed after collection.

Such frustrations highlight that wealth alone cannot ensure seamless recycling systems; municipal services must also be transparent and comprehensive to maintain resident confidence. This finding further resonates with critiques of the Environmental Kuznets Curve (23, 24); Glen Rock illustrates how affluent communities may still struggle with waste management challenges, revealing that rising wealth does not necessarily lead to better environmental outcomes. Instead, affluence may reduce visible inequalities while masking underlying vulnerabilities related to infrastructure, trust, and communication.

Trust, Clarity, and Policy Shifts

Infrastructure emerges as the key moderator between internalized motivation and actual recycling behavior. Survey respondents generally agreed that collection was reliable and that instructions were clear enough to follow, but interviews and open-ended responses revealed persistent doubts. Confusion about plastics, frustration with restrictions, and distrust in whether materials are processed correctly all point to an infrastructure that is adequate but not excellent. This demonstrates how motivated residents are willing to recycle, but their commitment is contingent on the system being both easy to understand and credible. When clarity or transparency falters, even strong internalized responsibility may not translate into consistent recycling action.

This insight also helps explain Glen Rock's policy shift toward reduction, exemplified by the recently implemented "Skip the Stuff" ordinance, which discourages unnecessary plastic cutlery in takeout orders. The ordinance suggests recognition by municipal leaders that recycling infrastructure alone may not be sufficient, especially when trust and clarity gaps persist. Instead, reducing waste at the source becomes a way to bypass uncertainties in the recycling stream. This evolution highlights how infrastructure not only supports recycling practices but also shapes the broader trajectory of local waste governance. In Glen Rock, as in many U.S. towns, future waste policy may depend on strengthening both transparency in recycling systems and complementary measures that reduce consumption altogether.

These findings suggest that increasing recycling rates requires policies that strengthen not only access to recycling infrastructure but also its clarity and credibility. Therefore, municipal policy should emphasize simplified and standardized recycling guidelines, consistent communication across platforms, and greater transparency about where materials go and how they are handled. At the same time, the results support waste-reduction strategies as a necessary complement to recycling, like Glen Rock's "Skip the Stuff" ordinance. Together, these implications indicate that effective local waste policy should combine clearer, more trustworthy recycling systems with upstream measures that limit consumption and reliance on recycling alone.

CONCLUSION

Glen Rock demonstrates that recycling behavior is shaped by the interaction of personal motivation, socioeconomic context, and municipal infrastructure. Residents exhibit strong internalized responsibility and guilt when they fail to recycle, which sustains high levels of compliance even in the absence of strong social enforcement. Yet this normative strength is not immune to practical obstacles: confusion about plastics, doubts about municipal processing, and frustrations with program limitations reveal how quickly motivation can falter when infrastructure lacks clarity or transparency.

Wealth and affluence enable Glen Rock to maintain consistent and well-funded recycling services, but they do not guarantee perfect outcomes. The borough illustrates how even affluent and homogeneous communities remain vulnerable to infrastructural and trust gaps. Glen Rock challenges the logic of the Environmental Kuznets Curve, showing that higher income does not automatically resolve environmental pressures. Rather, wealth reduces visible inequalities while masking subtler vulnerabilities in participation and confidence.

The survey responses highlight the importance of reliable and transparent municipal infrastructure as the linchpin between internalized pro-environmental values and effective recycling practices. Policies such as the Skip the Stuff ordinance suggest that the future of waste governance may lie not only in sustaining recycling systems but also in reducing consumption at the source. Cultivating personal responsibility is important, but without institutional clarity and trust, even the strongest internal norms will struggle to translate into long-term collective environmental impact.

This study has several limitations that should be acknowledged. First, the research was conducted in a single, affluent, and relatively homogeneous suburban community, which limits the generalizability of findings to other socioeconomic contexts. The dynamics observed in Glen Rock, where wealth enables consistent infrastructure but does not eliminate all barriers, may not operate similarly in less resource-rich settings or in communities with greater demographic diversity. Second, the sample size for both the survey (20-30 respondents) and interviews (4 participants) was relatively small, which constrains the statistical power of quantitative findings and the breadth of qualitative perspectives captured. Third, the study relied on self-reported data, where residents may have overstated their recycling behaviors or underreported their doubts about the system. Finally, while the study identifies gaps in trust and transparency surrounding municipal recycling processing, it does not include direct observational data from the recycling center or waste processing facilities, which would provide a more complete picture of the disconnect between resident perceptions and operational realities.

Future research employing comparative case studies across suburbs of varying affluence, larger sample sizes, longitudinal designs, and mixed observational methods could address these limitations and provide deeper insight into how wealth, infrastructure, and trust interact to shape environmental behavior.

Additionally, future research would benefit from considering how hidden social and municipal vulnerabilities manifest across different socioeconomic contexts, how perceptions of institutional transparency shape confidence in sustainability efforts, and how community-level engagement strategies might bridge the gap between material capacity and equitable participation. Comparative studies across suburbs of varying affluence could reveal whether the masking effect of wealth operates similarly in less resource-rich settings or whether it is uniquely tied to upper-middle-class environments. Greater attention to the role of municipal communication and perceived accountability could further clarify why even materially capable residents express uncertainty or doubt about the effectiveness of local programs.

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CONFLICT OF INTEREST

The author declares that there are no conflicts of interest related to this work.

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