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Don't Fear the Reefer? The Social Equity and Community Planning Implications of New York's Recreational Cannabis Law on Underserved Communities

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Abstract

In 2021, New York State passed the Marijuana Regulation and Taxation Act (MRTA). The Act legalized adult-use recreational cannabis and allowed for its production, distribution, and retail sale in licensed businesses. It also included social and economic equity provisions that provided for the expungement of cannabis-related criminal records and for access to cannabis business licenses to underserved minority applicants and communities disproportionally impacted by the war on drugs. This article asks if, under its current structure and implementation, MRTA is positioned to achieve its social and economic equity goals. The methods for the analysis are two-pronged. First, literature on recreational cannabis legalization is examined to understand the effects of this type of policy on underserved communities. This meta-analysis focuses on urban planning and land-use challenges associated with cannabis legalization. Second, demographic characteristics of communities that opt-in to MRTA are compared to those that opt-out in order to gain insights into how the geography of cannabis businesses relates to the law's core social and economic equity goals. The meta-analysis finds that after legalization, marijuana remains stigmatized and racialized. This has resulted in the clustering of cannabis businesses in disenfranchised black and brown communities, exacerbating existing health disparities. The statistical analysis of opt-in and opt-out patterns indicates that similar patterns of clustering are emerging in New York. The findings from the analysis are used to generate recommendations to strengthen social and economic equity outcomes from the implementation of recreational cannabis policy in New York.

Keywords Cannabis legalization · Social equity · Community planning · Land use and zoning

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Introduction

On March 31, 2021, the Marijuana Regulation and Taxation Act (MRTA) was signed into law in New York State. The Act legalized adult-use recreational cannabis and established an Office of Cannabis Management. The law allowed for the production, distribution, retail sale, and on-site consumption of cannabis in licensed businesses. It also included social and economic equity provisions that provided for the expungement of cannabis-related criminal records and for access to cannabis business licenses to underserved minority applicants and communities disproportionately impacted by the war on drugs. From 2023 to 2028, the legalization of recreational cannabis is projected to generate $1.25 billion in state tax revenue to be shared with other jurisdictions by formula (Hocul & Mujica, 2022). Local governments that opted-out of the law by December 31, 2021 forego any tax revenue.

New York is among 18 states that decriminalized recreational cannabis[1] between 2012 and 2021. In addition, recreational cannabis is decriminalized in the District of Columbia and the territory of Guam. Although legislative provisions vary across these jurisdictions, they have the combined effect of decriminalizing recreational cannabis for 44% of the US population. Under MRTA, New York State has adopted one of the more sweeping approaches to decriminalizing recreational cannabis. The Act creates a regulatory structure for the creation of a cannabis industry for the state's economy encompassing the cultivation, processing, distribution, and retail sales of marijuana. The structure of the state's cannabis industry mirrors its liquor industry. For instance, it provides for the licensing of businesses and places restrictions on vertical integration within the industry. Like the liquor industry, New York's cannabis industry also delegates decisions about the retail sales and the siting of cannabis businesses to local municipalities. Much of this regulatory authority falls under local land use and zoning rules, which at the time of this article's writing, are yet to be promulgated. However, we anticipate that zoning of cannabis businesses will follow similar rules applied to the liquor industry.

Under the provisions of MRTA, cannabis licenses will be issued to businesses by the state's Office of Cannabis Management (OCM). Separate licenses will be issued to twelve different types of cultivators, processors, distributors, and retailers. The number of licenses allowed for individuals engaged in different levels of the industry is limited (typically to one license per operator), and the regulations restrict operators from most types of vertical integration across businesses operated in the industry. Local governments are preempted from adopting laws, rules, ordinances, or other regulations that block the use of state-issued licenses for all cannabis businesses, with the exception of retail dispensaries and on-site consumption businesses. Towns, cities, and villages are permitted to opt-out of permitting dispensaries and on-site consumption businesses under MRTA. Municipalities that opt-out of these

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[1] At the time this article was written, the following states had passed legislation decriminalizing the recreational use of cannabis: Alaska, Arizona, California, Colorado, Connecticut, Illinois, Maine, Massachusetts, Michigan, Montana, Nevada, New Jersey, New Mexico, New York, Oregon, Vermont, Virginia, and Washington.

business activities forgo their share of tax revenue generated from the cannabis industry. The intention of this provision in the law is to provide local governments with the ability to prohibit store-front cannabis retail establishments in their jurisdictions. However, opting-out should be considered the "nuclear option" for local governments, since municipalities that allow such establishments retain wide latitude in regulating their location and placing other restrictions on their operation through the use of local land use and zoning regulations. Moreover, municipalities must be notified during the OCM licensing process, and their opinions for or against the granting of a license bears on OCM's decision to grant or deny a license.

For municipalities, opting-out of store-front cannabis retail activities entails financial disincentives. State tax revenue from recreational cannabis businesses is distributed by formula into three separate funds: 40% to the State Lottery Fund for education purposes, 40% to the Community Grants Reinvestment Fund, and 20% to the Drug Treatment and Public Education Fund.[2] Municipalities that permit store-front cannabis businesses receive a share of tax revenue generated for the Community Grants Reinvestment Fund. Those funds are earmarked for a variety of workforce development, housing, public health, and community development activities. By opting-out, municipalities forfeit access to funds designed to promote social and economic equity.

A defining feature of MRTA is its social and economic equity focus. The Act was designed to prioritize and provide resources to members of communities disproportionally impacted by punitive drug laws. The thrust of the social and economic equity components of MTRA is two-pronged. First, it provides community members with opportunities to participate in the new industry. The OCM has a goal to award half of the licenses for cannabis businesses to social and economic equity applicants from disproportionally impacted communities.[3] In addition to set-asides for licenses, grants and training are made available to applicants from these groups to assist with business development. Second, tax revenue is earmarked to the Community Grants Reinvestment Fund for projects and programs that directly benefit disproportionally impacted communities. The policy was designed and advocated for by state legislators based on the promise that the development of New York's cannabis industry would be a conduit for advancing social and economic equity goals in black and brown communities that have been historically impacted by the war on drugs. This predicate is central to MRTA and should be considered in any efforts to evaluate its implementation's effectiveness.

Given this framework for marijuana legalization in New York State, this study asks if, under its current structure and implementation, MRTA is positioned to achieve its social and economic equity goals. The methods for the analysis are

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[2] Revenue distributed to the three funds is net of OCM operating costs. In 2023, the Governor's budget proposed to allocate $46 million to the OCM and anticipated $56 million in revenue from cannabis licenses and taxes. The net amounts distributed to the three funds are projected to be $10 million.

[3] Social equity applicants include: individuals from disproportionally impacted communities, minority and women owned-business establishments, distressed farmers, individuals with expunged criminal records for cannabis-related offenses, and service-disabled veterans.

two-pronged. First, existing literature on community impacts of recreational cannabis legalization is examined to understand the neighborhood effects of policy on underserved communities. This meta-analysis primarily focuses on urban planning and land-use challenges associated with the recreation cannabis industry. Second, demographic characteristics of communities that opt-out of the recreational cannabis law (licenses for retail dispensaries and/or on-site consumption) are compared to those that do not in order to gain insights into how the geography of cannabis businesses furthers or hampers the core social and economic equity goals of the law. The findings from the analysis are used to generate recommendations to strengthen the social and economic equity outcomes from the implementation of recreational cannabis policy in New York.

Metanalysis of Literature on the Neighborhood Effects of Cannabis Legalization

Social Stigma and the Geography of Vice in America

Marijuana has carried a social stigma in the USA for almost a century. This can be traced back to the release of the film *Reefer* Madness (1936). The framing of marijuana users with negative connotations about race, criminality, and pothead culture has been deeply engrained both historically and in contemporaneous discussions of marijuana reform (Mortensonm et al., 2019; Hudak, 2020). The omnipresence of this stigma places constraints on the public's willingness to accept cannabis businesses in a legalized and regulated context. Rather than anticipating cannabis businesses to pop up on main streets after legalization, it is expected that they will be stigmatized and regulated in a manner that mirrors other establishments associated with social dysfunction and vice. The literature suggests that after legalization, cannabis businesses are regulated to the urban fringe through local land use and zoning ordinances in a similar manner to methadone clinics, homeless shelters, strip clubs, liquor stores, and other unwanted land uses (Holmes, 2019). The adoption of restrictive land use regulations has produced an uneven geography where cannabis businesses end up clustering in economically disenfranchised black and brown communities (Amiri et al., 2019).

A body of empirical literature has emerged documenting the spatial inequality associated with local land-use regulations and the siting of cannabis businesses. One of the first hurdles that cannabis businesses must overcome is general restrictions on siting a business in a municipality. In states that have legalized marijuana, only a fraction of municipalities opt-in and permit cannabis businesses. Colorado and Washington were two of the earliest states to decriminalize marijuana, but many counties in these states elected to opt-out of licensing cannabis businesses. Payan et al. (2021: 10) reported that 30.8% of counties in Washington and 76.6% of counties in Colorado opted-out and banned all types of recreational marijuana businesses. Dilley et al. (2017) report similar findings for Washington State. Rationales given for opting-out echoed longstanding stereotypes about marijuana. Opponents to allowing cannabis businesses voiced concerns about public health impacts,

harm that businesses would bring to children and youth, crime and public safety, and negative effects on property values, and other economic losses (Payan et al., 2021). Polson (2020) came to similar conclusions about municipal opt-out decisions in California. He argued that resistance to cannabis businesses was strongest in suburban and exurban areas. The tendency for these communities to opt-out and ban cannabis businesses reinforces existing spatial inequalities between core cities and more affluent areas. Other studies reached similar conclusions, finding that recreational cannabis businesses tended to locate in neighborhoods with higher rates of poverty, minority concentration, crime, and clusters of other unwanted land uses (Boggess et al., 2014; Hsu et al., 2018; Morrison et al., 2014; Nemeth & Ross, 2014).

Amsterdam Redux?

The stigmatization of marijuana and clustering of cannabis businesses has also been woven into economic development strategies associated with its legalization. This is most visible when examining strategies for the development of drug tourism (Pereria, 2020). The Netherlands, particularly the city of Amsterdam, represents the quintessential drug tourism model. Under this model, recreational marijuana sales are tolerated in small quantities and the public use of marijuana is confined to limited geographic areas where other vice businesses are found. For example, in Amsterdam, marijuana sales and consumption are confined to the city's "red light" district where prostitution and other sex tourism businesses cluster. Marijuana tourism has also emerged in other countries, where the nefarious side of cannabis is leveraged in marketing pitches to tourists. For example, in Jamaica, tourists who self-identify as medical marijuana patients can take ganja tours where they learn about Rastafarian culture while visiting cannabis plantations. In these and other examples of drug tourism, cannabis is marketed as a tolerated, but taboo experience that tourists can partake in.

Despite cannabis proponents' arguments for the development of drug tourism in the USA, there is no empirical evidence that the model deployed in places like Amsterdam and Jamaica has emerged in the USA (Doussard, 2019; Kang et al., 2016). At best, drug tourism is a secondary attraction in America. Rather than serving as a draw for domestic and international tourism, cannabis legalization has primarily supplied local and regional demand in the USA. To date, the location of cannabis businesses in the USA has been influenced by the stigmatization of marijuana, without accompanying cultural references and romanticism associated with cannabis tourism elsewhere.

Health Disparities and Other Community Impacts of Clustering Cannabis Businesses

Existing empirical analysis shows that the stigmatization of marijuana has contributed to the clustering of cannabis businesses in economically distressed communities where black and brown residents live. These spatial patterns are reinforced by the tendency for more affluent suburbs and exurbs to ban cannabis businesses, and

by municipalities that allow such businesses to exist but regulate them similarly to other unwanted land uses. Given the spatial clustering of cannabis businesses, it is expected that their negative impacts will exacerbate existing health disparities in black and brown communities (Williams & Mohammed, 2008; Yearby, 2018).

Researchers found that residential proximity to marijuana dispensaries was correlated with higher rates of marijuana abuse (Mair et al., 2015; Shih et al., 2019; Hust, et al., 2020; Ambrose et al., 2021). The association between residential proximity and substance abuse is consistent with similar research on alcohol and tobacco use (Bernstein et al., 2007; Burgoon et al., 2019; Leung et al., 2019; Morton et al., 2014). Since cannabis businesses are predicted to cluster in areas already saturated with liquor stores, smoke shops, and related businesses, an exacerbation of related health disparities is expected.

Analysis of New York Municipalities that Opt-In vs. Opt-Out

To understand the early implementation of MRTA, we collected data on New York municipalities that opted-in and opted-out of the state's recreational cannabis law. These data were retrieved from the Rockefeller Institute of Government's "Marijuana Opt-Out Tracker" (https://rockinst.org/issue-areas/state-local-government/municipal-opt-out-tracker/).[4] These data were merged into a database with other variables from the American Community Survey (ACS). Our analysis focused on the relationship between the decision to opt-in or opt-out of permitting store-front cannabis retail businesses with population and housing characteristics of municipalities. The analysis focused on the correlation between opting-in and opting-out with the racial composition of municipalities. This was a critical indicator, since a defining component of MRTA is its emphasis on promoting social and economic equity in communities disproportionally impacted by punitive drug laws (Appendix Tables 4, 5, and 6).

We predicted that there would be significant differences between municipalities that permitted store-front cannabis retail businesses based on their populations' racial composition. Specifically, we predicted that municipalities' decisions on permitting store-front cannabis businesses would set the stage for patterns of clustering in black and brown communities similar to those reported in the literature (Holmes, 2019). As suggested in the meta-analysis, the clustering of cannabis businesses in black and brown communities would reproduce negative externalities in communities and work against the social and economic equity goals of MRTA.

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[4] The Rockefeller Institute of Government's "Marijuana Opt-Out Tracker" included information from 1520 towns, cities, and villages. It reported whether the municipalities opted-in or opted-out of permitting store-front cannabis dispensaries and on-site consumption businesses. The Rockefeller Institute contacted each municipality directly to collect this data. At the time of this analysis, 98.5% of the municipalities had reported data. In contrast, the OCM reported similar data that was submitted to it voluntarily by municipalities on its website. At the time of this analysis, only 39% of the municipalities had reported their opt-in/opt-out status to OCM.

Table 1 Descriptive statistics for New York towns and cities Opt-In vs Opt-Out status on cannabis ($N=983$) dispensaries

	Total Opt-In ($N=501$)	Total Opt-Out ($N=482$)	Black and Hispanic population >33% Opt-In ($N=25$)	Black and Hispanic population >33% Opt-Out ($N=8$)	Black and Hispanic population <33% Opt-In ($N=474$)	Black and Hispanic population <33% Opt-Out ($N=476$)
Percent of all towns and cities	51.0	49.0	75.8	24.2	50.1	49.9
Average population	28495	10886	379384	158432	10066	8396
Population density per square mile	967	365	10392	3854	472	306
Percent non-Hispanic White	88.7	90.6	42.7	49.5	91.2	91.3
Percent non-Hispanic Black	3.2	2.0	23.3	11.5	2.1	1.8
Percent Hispanic	4.6	4.3	26.0	32.0	3.5	3.8
Percent Black and Hispanic	7.8	6.3	49.3	43.5	5.6	5.6
Percent of municipalities with Black and Hispanic population >33%	5.0	1.7	100.0	100.0	0.0	0.0
Median age	44.1	44.4	37.1	39.4	44.5	44.4
Average household size	2.4	2.5	2.5	2.9	2.4	2.5
Percent with less than a high school diploma	10.4	9.4	18.0	14.0	10.0	9.3
Percent with a Bachelor's degree or more	25.8	26.9	27.8	33.5	25.7	26.8
Median household income in $	61519	67282	59686	84446	61616	66992
Percent unemployed	5.0	4.8	6.8	4.4	4.9	4.8
Percent below poverty	8.5	7.2	13.8	6.0	8.2	7.2
Percent occupied housing units owner occupied	75.7	79.8	49.5	64.3	77.1	80.1
Percent housing units vacant	21.0	22.9	15.2	7.3	21.3	23.2
Median value owner occupied housing	158970	185934	304196	377613	151342	182692
Median gross rent as a percent of household income	29.2	28.5	32.8	33.7	29.0	28.4

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

Table 2 Descriptive statistics for New York towns and cities Opt-In vs Opt-Out status on cannabis on-site consumption (N=982)

	Total		Black and Hispanic population > 33%		Black and Hispanic population < 33%	
	Opt-In	Opt-Out	Opt-In	Opt-Out	Opt-In	Opt-Out
	(N = 433)	(N = 549)	(N = 23)	(N = 10)	(N = 410)	(N = 539)
Percent of all towns and cities	44.1	55.9	69.7	30.3	43.2	56.8
Average population	30,313	11,648	409,417	133,547	9046	9386
Population density per square mile	969	438	10,897	4000	412	372
Percent non-Hispanic White	89.0	90.1	42.5	48.6	91.6	90.9
Percent non-Hispanic Black	3.1	2.1	23.4	13.8	2.0	1.9
Percent Hispanic	4.5	4.4	26.1	30.5	3.3	3.9
Percent Black and Hispanic	7.6	6.5	49.5	44.3	5.3	5.8
Percent of municipalities with Black and Hispanic population > 33%	0.1	0.0	100.0	100.0	0.0	0.0
Median age	44.2	44.3	36.9	39.5	44.6	44.4
Average household Size	2.4	2.5	2.5	2.8	2.4	2.5
Percent with less than a high school diploma	10.7	9.3	18.2	14.4	10.3	9.2
Percent with a Bachelor's degree or more	24.5	27.8	27.2	33.7	24.3	27.7
Median household income in $	59,988	67,764	58,883	81,341	60,050	67,512
Percent unemployed	5.1	4.7	6.8	4.9	5.0	4.7
Percent below poverty	8.8	7.1	14.0	6.9	8.5	7.1
Percent occupied housing units owner occupied	76.4	78.8	49.5	61.3	77.9	79.1
Percent housing units vacant	22.0	28.6	15.7	7.7	22.4	22.2
Median value owner occupied housing	151,109	185,934	303,235	365,140	142,575	185,570
Median gross rent as a percent of household income	29.2	28.5	32.6	34.0	29.0	28.5

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

Tables 1 and 2 summarize housing and community characteristics for municipalities that opted-in and opted-out of store-front retail cannabis business.[5] The tables include cross-sectional analysis of municipalities with black and Hispanic populations greater than (>) and less than (<) 33%. This cutoff point for the cross-sectional analysis was selected because overall, black, and Hispanic residents comprised 33% the state of New York's population. Thus, the cross-sectional analysis compares municipalities that equal or exceed the racial compositions of black and brown residents statewide with those that do not.

Table 1 summarizes housing and community characteristics for towns and cities in the state of New York (N = 983) reporting whether they opted-in or opted-out of permitting cannabis dispensaries in their jurisdictions. The data in Table 1 highlight the contrast between municipalities with black and Hispanic populations > 33% and other municipalities in the state. These municipalities comprised larger population centers. Although there were only 33 municipalities in this group, 45% of the state's overall population resided in them. On average, these municipalities had majority-minority populations. Socioeconomically, these municipalities: were younger, exhibited more polarized patterns of educational attainment, had higher rates of unemployment and poverty, and had housing markets that were characterized by higher costs for homeowners and renters. Notably, 75.8% of municipalities with black and Hispanic populations > 33% opted-in and permitted cannabis dispensaries. This was in contrast to the opt-in rate for other municipalities in the state.

Among municipalities with black and Hispanic populations > 33%, there was a clear contract between opting-in and opting-out. Municipalities that opted-in had noticeably larger populations and larger concentrations of black residents. Socioeconomically, these municipalities had lower levels of educational attainment, lower median household incomes, and higher rates of unemployment and poverty. Their housing markets were also distinct. This was the only geography examined in Table 1 with under 50% of its housing units owner occupied. Still, almost one-third of renters, the majority of housing units, were housing cost burdened.

Table 2 summarizes housing and community characteristics for towns and cities in the state of New York (N = 983) reporting whether they opted-in or opted-out of permitting cannabis on-site consumption businesses in their jurisdictions. Overall, the data in Table 2 mirror the data in Table 1. Like Table 1, this Table highlights the contrast between municipalities with black and Hispanic populations > 33% and other municipalities in the state. These municipalities comprised larger population centers. Although there were only 33 municipalities in this group, 45% of the state's overall population resided in them. On average, these municipalities had majority-minority populations. Socioeconomically, these municipalities were

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[5] Our analysis focuses on towns and cities in the state of New York. A separate analysis of villages was conducted which yielded similar results. Villages were excluded from the analysis presented in the main body of this article, since this type of municipality is a sub-jurisdiction within a town that is established to deliver specified public services within its jurisdiction. In the American Community Survey (ACS), data for villages are included in the summary level data for towns and cities that they are a part of. There is a separate ACS summary file for villages. Results for these data are included in this article's Appendix.

Table 3 Logistic regression model for New York towns and cities Cannabis Opt-In/Op-Out status

	Dispensaries B (Exp (B))	On-site consumption B (Exp (B))
Constant	2.506 (12.252)*	.672 (1.957)
Municipalities 33% or more Black and Hispanic	1.124 (3.079)*	1.457 (4.292)**
Median age	.028 (1.028)	.022 (1.022)
Average household size	− .511 (.600)	− .098 (.906)
Median household income	.000004 (1.000004)	.000013 (0.999987)
Percent unemployed	− .009 (.991)	.004 (1.004)
Percent owner occupied	− .030 (.970)***	− .009 (.991)
Percent vacant	− .004 (.996)	− .002 (.998)
Median housing value	.000003 (0.999997)*	.000002 (.999999)
Median gross rent as a percent of household income	.011 (1.011)	.008 (1.008)
X^2	59.155***	55.611***
Nagelkerke R^2	0.079	0.075

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

* $p < .05$; ** $p < .01$; *** $p < .001$

younger, exhibited more polarized patterns of educational attainment, had higher rates of unemployment and poverty, and had housing markets that were characterized by higher costs for homeowners and renters. Notably, 69.7% of municipalities with black and Hispanic populations > 33% opted-in and permitted cannabis on-site consumption businesses. This was in contrast to the opt-in rate for other municipalities in the state.

Among municipalities with black and Hispanic populations > 33%, there was a clear contract between opting-in and opting-out of permitting on-site consumption businesses. Municipalities that opted-in had noticeably larger populations and larger concentrations of black residents. Socioeconomically, these municipalities had lower levels of educational attainment, lower median household incomes, and higher rates of unemployment and poverty. Their housing markets were also distinct. This is the only geography examined in Table 2 with under 50% of its housing units owner occupied. Still, almost one-third of renters, the majority of housing units, were housing cost burdened.

Logistic regression models were run to determine if statistically significant relationships existed between population and housing characteristics in towns and villages that opted-in and opted-out of store-front cannabis businesses in New York state. These models are summarized in Table 3. Two models were run; both had significant χ^2 values and their coefficients are reported in the Table. The first model in the Table examined municipalities' decisions to opt-in or opt-out of permitting cannabis dispensaries. The second model in the Table examined municipalities' decisions to opt-in or opt-out of permitting on-site cannabis consumption businesses.

The first model in Table 3 summarizes municipalities' decisions to opt-in or opt-out of permitting cannabis dispensaries. The model explained 7.9% of the variance

in a municipality's decision to opt-in and opt-out of permitting this type of business (Nagelkerke $R^2 = .079$). Three of the nine variables in the model were significantly correlated with opting-in and opting-out. When a municipality had a black and Hispanic population that was > 33%, the odds of opting-in and permitting cannabis dispensaries increased by 3.079 times. For every percent increase in a municipality's owner-occupied housing units, the odds of opting-in and permitting cannabis dispensaries decreased by .030 times. For every dollar increase in a municipality's median owner-occupied housing value, the odds of opting-in and permitting cannabis dispensaries increased by .000003 times. These data show that after controlling for other population and housing characteristics, having a black and Hispanic population > 33% was by far the most influential determinant of opting-in and permitting cannabis dispensaries. To a lesser extent, larger percentages of owner-occupied housing reduced the chances of opting-in, while being located in an area with higher cost housing increased the chances of opting-in.

The second model in Table 3 summarizes municipalities' decisions to opt-in or opt-out of permitting cannabis on-site consumption businesses. The model explained 7.5% of the variance in a municipality's decision to opt-in and opt-out of permitting this type of business (Nagelkerke $R^2 = .075$). After controlling for other population and housing characteristics, only one of the nine variables in the model were significantly correlated opting-in and opting-out. When a municipality had a black and Hispanic population that was > 33%, the odds of opting-in and permitting cannabis dispensaries increased by 4.292 times. Permitting cannabis on-site consumption businesses was solely explained by the presence of large cluster of black and brown residents in New York State. Municipalities that lacked this characteristic exercised the nuclear option and banned cannabis on-site consumption businesses in their jurisdictions.

Conclusions and Recommendations

The results from the analysis of early implementation of MRTA show that municipalities that opted-in and opted-out of the state's recreational cannabis law were distinct from one another, primarily based on the clustering of black and brown residents. This means that despite the social and economic equity goals of MRTA, black and brown communities in New York will be disproportionately impacted by the presence of cannabis businesses. Past research on health disparities and the built environment suggests that the presence of those businesses will aggravate health disparities already present.

It is noteworthy that opt-in and opt-out decisions at the municipal level represent a blunt instrument that results in disparities in residential exposure to health risks associated with marijuana. This is because municipalities that opt-out of allowing store-front cannabis businesses are enacting blanket bans. It is important to reiterate that MRTA required municipalities to proactively opt-out. The propensity for municipalities with significantly larger non-minority populations to opt-out suggests that the negative stigma associated with marijuana was more resonant in these places. Given the stigmatization of marijuana's racialized context, this correlation

suggests that opting-out was not an altruistic gesture intended to promote the social and economic equity goals of MRTA.

Earlier in this paper we refer to opting-out as the nuclear option for regulating cannabis business. A more nuanced approach to regulating cannabis businesses is emergent in municipalities that have opted-in to allowing store-front cannabis businesses. This approach involves the application of land-use regulations and zoning ordinances. It is anticipated that land-use regulations and zoning ordinances will be modeled after existing laws that apply to other unwanted land uses and vice businesses. We predict that the combined effects of blanket bans and restrictive zoning will result in the clustering of cannabis businesses in the most economically disadvantaged black and brown neighborhoods in the state. Consequently, black and brown communities will have the greatest exposure to negative externalities of the cannabis economy.

These findings are ironic, since a core goal of MRTA is to develop the cannabis industry in New York State in a manner that reverses historic patterns of racial discrimination and promotes social and economic equity. However, the equity goals of MRTA appear in conflict with the emerging spatial distribution of cannabis businesses. Instead of a uniform distribution of store-front cannabis businesses across the state, the data suggests that these businesses will cluster in distressed black and brown communities. Again, this distribution is not driven by social and economic equity goals. Instead, it is driven by an entrenched negative stigma associated with marijuana in non-minority communities. Cannabis businesses are being pushed out of more affluent communities across the state. While in historically disenfranchised black and brown neighborhoods, they are poised to cluster with existing unwanted land uses that are associated with social dysfunction and vice.

Unlike cannabis legalization models designed to promote economic development-based drug tourism, the model adopted in New York state focuses on augmenting the supply of marijuana to local residents. This model normalizes marijuana use in communities where it is sold and potentially encourages the proliferation of marijuana use among local residents. In essence, it is a policy that perpetuates and manages substance abuse in black and brown communities.

It is too early to tell if MRTA's goal of promoting small businesses among those directly impacted by the war on drugs will be achieved at a meaningful scale. However, the findings from this analysis suggest that those businesses will be in the same neighborhoods and on the same streets where the war on drugs was fought. Most of those businesses will not be boutiques or trendy cafes. Rather, they will be akin to the inner-city liquor stores and dive bars that already contribute to the destabilization of neighborhoods.

It is also too early to tell if the earmarking of some of the tax revenue from cannabis sales toward substance abuse programs will be sufficient to address increased levels of marijuana use anticipated in black and brown communities. Irrespective, tax revenue for drug treatment programs will be a double-edged sword for black and brown communities. On one side, these programs will be needed to curb increased levels of marijuana abuse that will accompany the legalization of cannabis. On the other side, these programs will add new drug treatment centers, another unwanted land use, to the urban landscape of black and brown communities.

Although MRTA is new, the results from this analysis suggest that its social and economic equity goals can be strengthened with the development of more explicit state guidelines related to the licensing of cannabis businesses and local land regulations. The Act charges the OCM with the responsibility to develop such guideline. We recommend that the OCM develop guidelines to discourage the clustering of cannabis businesses and force municipalities to open more commercial areas where they can be sited. Along these lines, Holmes (2019) suggests that such guidelines should prohibit the placement of multiple cannabis store-front businesses on the same city block. Similar guidelines should be developed by the OCM in relation to the proximity of cannabis businesses to other unwanted land uses.

Another area where more explicit state guidelines are needed relates to the local policing of cannabis. Kilmer (2019) points out that although the legalization of cannabis drastically reduces the role of the criminal justice system in the enforcement of marijuana laws, it does not entirely eliminate the state's police function. There will still be law enforcement interactions for offenses like driving under the influence of cannabis, underaged consumption, public intoxication, and illicit sales. The OCM should develop guidelines and model municipal codes to ensure that inequities in the criminal justice system are not reproduced in relation to marijuana offenses. This is particularly important in relation to civil fines for minor marijuana offenses. Holmes (2019) recommends that in the interest of social equity, such fines be set based on a sliding scale responsive to income and other factors. She argues that if local police catch "a billionaire in a non-smoking public space smoking a joint, that person would be responsible for a one thousand dollar fine. On the other hand, a welfare recipient cited in the same space for the same infraction should not receive a fine in the hundreds of dollars" (Holmes, 2019: 964). In addition to the development of guidelines for municipal codes, the OCM should recommend models for local governance and public participation in decision-making related to local marijuana policy. For instance, we recommend that the OCM develop guidelines for the establishment of local citizen advisory boards to have input in policymaking and monitor ongoing law enforcement activities related to marijuana offenses.

Moving forward, there are several key areas of research that should be pursued related to the social and economic equity in MRTA implementation. First, the promulgation of rules and guidelines by the OCM needs to be analyzed in order to understand how considerations for health inequities in the built environment are reflected in the implementation of cannabis laws. Second, the translation of OCM guidelines and model codes at the local level should be studied. This would include analysis of emergent land use regulations and zoning ordinances that affect cannabis businesses, as well as the evolving role of the criminal justice system in relation to marijuana infractions. Understanding the emerging landscape of social and economic justice as it relates to cannabis policies is imperative. Ostensibly, this is the case since cannabis businesses are anticipated to cluster in black and brown communities.

Appendix

Table 4 Descriptive statistics for New York villages Opt-In vs Opt-Out status on cannabis dispensaries

	Total		Black and Hispanic population >33%		Black and Hispanic population <33%	
	Opt-In	Opt-Out	Opt-In	Opt-Out	Opt-In	Opt-Out
	(N = 209)	(N = 299)	(N = 36)	(N = 25)	(N = 198)	(N = 281)
Percent of all villages	41.1	58.9	59.0	41.0	41.3	58.7
Average population	3191	3877	2,589,974	60,671	2804	3238
Population density per square mile	1774	2731	71,489	6116	1588	2471
Percent non-Hispanic White	86.8	84.2	63.7	40.6	89.4	87.1
Percent non-Hispanic Black	3.1	2.9	62.7	15.5	2.3	2.0
Percent Hispanic	5.8	7.3	68.7	36.0	4.1	5.4
Percent Black and Hispanic	8.9	10.1	85.3	51.5	6.4	7.4
Percent of municipalities with Black and Hispanic population > 33%	0.1	0.1	1.0	1.0	0.0	0.0
Median age	41.0	42.6	49.3	38.7	41.2	42.8
Average household size	2.4	2.6	3.4	2.9	2.4	2.5
Percent with less than a high school diploma	9.0	7.5	38.7	15.6	8.4	7.0
Percent with a Bachelor's degree or more	30.2	38.6	61.3	31.1	30.6	39.2
Median household income in $	62,541	88,271	94,046	82,939	62,989	88,639
Percent unemployed	5.2	4.3	12.3	4.8	5.1	4.3
Percent below poverty	9.2	7.2	28.5	6.7	8.8	7.2
Percent occupied housing units owner occupied	63.5	70.7	84.3	61.5	64.6	71.4
Percent housing units vacant	14.9	14.3	45.1	8.1	15.0	14.3
Median value owner occupied housing	218,449	413,821.0	987,700	367,112	215,257	416,957
Median gross rent as a percent of household income	30.2	29.8	44.8	33.1	29.8	29.6

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

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Table 5 Descriptive statistics for New York villages Opt-In vs Opt-Out status on cannabis on-site consumption

	Total		Black and Hispanic population > 33%		Black and Hispanic population <33%	
	Opt-In	Opt-Out	Opt-In	Opt-Out	Opt-In	Opt-Out
	(N = 171)	(N = 338)	(N = 31)	(N = 30)	(N = 163)	(N = 317)
Percent of all villages	33.6	66.4	50.8	49.2	34.0	66.0
Average population	2725	4027	306,146	54,090	2405	3388
Population density per square mile	1604	2703	9184	6145	1474	2427
Percent non-Hispanic White	88.1	83.9	41.0	41.6	90.6	86.8
Percent non-Hispanic Black	2.8	3.1	22.3	15.9	2.0	2.2
Percent Hispanic	5.4	7.3	29.0	34.7	3.9	5.4
Percent Black and Hispanic	8.2	10.3	51.3	50.6	5.8	7.6
Percent of municipalities with Black and Hispanic population > 33%	0.0	0.1	1.0	1.0	0.0	0.0
Median age	41.2	42.3	36.7	39.2	41.5	42.5
Average household size	2.4	2.6	2.6	2.9	2.4	2.5
Percent with less than a high school diploma	8.9	7.8	19.2	15.7	8.2	7.2
Percent with a Bachelor's degree or more	29.0	38.2	25.3	31.7	29.4	38.7
Median household income in $	61,574	85,707	57,011	79,933	62,065	86,118
Percent unemployed	5.4	4.3	7.0	5.0	5.3	4.2
Percent below poverty	9.2	7.4	14.7	7.3	8.9	7.4
Percent occupied housing units owner occupied	63.8	69.8	48.4	58.5	64.7	70.6
Percent housing units vacant	15.4	14.1	15.1	8.4	15.5	14.2
Median value owner occupied housing	214,611	392,690	288,561	362,410	213,052	394,693
Median gross rent as a percent of household income	30.4	29.7	33.9	33.4	30.0	29.5

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

Table 6 Logistic regression model for New York villages cannabis Opt-In/Op-Out status

	Dispensaries B (Exp (B))	On-site consumption B (Exp (B))
Constant	4.642 (103.721)**	2.179 (8.838)
Municipalities 33% or more Black and Hispanic	.139 (1.149)	−.089 (0.915)
Median age	−.044 (0.957)*	−.023 (0.978)
Average household size	−1.306 (0.271)**	−1.005 (0.336)*
Median household income	.000009 (1.000009)	.000010 (1.000010)
Percent unemployed	.047 (1.048)	.076 (1.079)*
Percent owner occupied	−.014 (0.986)	−.013 (0.987)
Percent vacant	.014 (1.014)	.017 (1.017)
Median housing value	.000002 (0.999998)*	.000003 (0.999997)*
Median gross rent as a percent of household income	.014 (1.014)	.025 (1.025)
X^2	**62.518***	**57.166***
Nagelkerke R^2	**0.163**	**0.154**

Sources: American Community Survey 2019 5-year estimates; Rockefeller Institute of Government, Marijuana Opt-Out Tracker, retrieved March 2022

$* p < 0.05$; $** p < 0.01$; $*** p < 0.001$

Declarations

Conflict of Interest The authors declare no competing interests.

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