NEW YORK CITY POLICE REFORM AND REINVENTION COLLABORATIVE

Ticket Punch

THE CONSEQUENCES OF FARE EVASION ENFORCEMENT IN NEW YORK CITY SUBWAYS

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In 2021, the New York City **Mayor's Office of Criminal Justice (MOCJ)** contracted with several research centers at John Jay College of Criminal Justice to support research and/or technical assistance related to 6 of the 132 reform initiatives contained within the **New York City Police Reform and Reinvention Collaborative Plan** ("the Plan"). The Plan was the result of more than 85 listening sessions, roundtable discussions, town halls and stakeholder engagement meetings conducted by NYPD and community partners. In March 2021, the NYC Council adopted the Plan via **Resolution 1584** pursuant to State Executive Order Number 203. The City's Reform Implementation Working Group was tasked with implementing and monitoring the progress of the 132 reform initiatives within the Plan. This report is aligned with reform initiative 80 of the Plan as directed by MOCJ.

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SUMMARY

Researchers at the John Jay College Research and Evaluation Center (JohnJayREC) investigated transit fare evasion in subway stations and station complexes throughout New York City between 2018 and 2023. The study was conducted as part of the New York City Police Reform and Reinvention Collaborative Plan, overseen by the New York City Mayor's Office of Criminal Justice (MOCJ). The research team analyzed associations between fare evasion and arrests reported by the New York City Police Department (NYPD) and considered the social and economic characteristics of the neighborhoods surrounding each transit station. The study found no statistically significant associations between fare evasion enforcements and total arrests for felonies and misdemeanors. Fare evasion enforcement, however, was most prevalent in stations whose neighborhoods were characterized by high socioeconomic disadvantage. The statistical interaction of crime rates, fare evasion enforcement, and socioeconomic disadvantage underscores the role of social factors in public safety.

INTRODUCTION

As part of the New York City Police Reform and Reinvention Collaborative Plan, the New York City Mayor's Office of Criminal Justice (MOCJ) commissioned the Research and Evaluation Center at John Jay College (JohnJayREC) to analyze administrative data about rider payment enforcement in the NYC transit system. Researchers analyzed incidents of fare evasion enforcement in subway stations throughout the city and tested the association of fare evasion enforcement with arrests for other crimes reported by the New York City Police Department (NYPD).

Crime in the New York City subway system receives considerable attention from media sources and political officials — especially since the 2020 onset of the COVID-19 pandemic. Recent efforts to increase the safety and security of transit passengers **range** from basic prevention to visible demonstrations of surveillance and armed enforcement. Just before 2020, officials implemented a series of more flexible responses to fare evasion in the transit system. Previous requirements to prosecute payment violations had disproportionate effects on economically disadvantaged neighborhoods and communities of color (Stolper and Jones 2017).

In 2017, the Manhattan District Attorney announced the city would **shift** fare evasion practices away from arrest and criminal prosecution. Individuals charged with "theft of service" (i.e., fare evasion) in transit stations were to be issued citations and perhaps required to perform community service unless they had been charged with evading transit fares before or were the subject of outstanding warrants. Arrests became more of a last resort. The approach seemed sensible to other New York City District Attorneys. Prosecutors in Brooklyn and the Bronx soon adopted approaches similar to those in Manhattan.

In 2022, New York City's **Metropolitan Transportation Authority (MTA)** assembled a panel of experts to review the legal consequences of fare evasion. Dubbed the Blue Ribbon Panel, the group investigated escalating instances of fare and toll evasion in New York and conducted site visits in subways, bus, rail, and tunnel facilities. Panel members scrutinized transit data and discussed their findings in meetings with various stakeholders, including transit officials, MTA customers, and groups of high school students. They also reviewed comparable policies from major transit systems in other jurisdictions.

The Blue Ribbon Panel's recommendations were summarized in a **report** that described police practices and the discretion available to officers when selecting various enforcement actions short of criminal arrest, including warnings, **Desk Appearance Tickets (DAT)**, **TAB summons**, and forcible removal from transit stations. Officers could issue summons for individuals to appear before the non-criminal Transit Adjudication Bureau (TAB), even if riders had one or two previous TAB summons. Officers would issue a criminal summons for fare evaders with three or more prior TAB appearances in the previous two years, and criminal court Desk Appearance Tickets were used for fare evasion when riders had pending court appearances for other criminal offenses. Custodial arrests were possible for fare evasion if riders were subject to outstanding criminal warrants.

PREVIOUS STUDIES

Fare evasion on public transit systems has implications beyond lost revenue. Public and observable acts of fare evasion add to perceptions of social disorder and may contribute to overall crime rates. Researchers investigate these issues using various methods and data sources (Chaiken, Lawless, and Stevenson 1974; Smith and Clarke 2000; Clarke, Contre, and Petrossian 2010; Reddy, Kuhls, and Lu 2011; Troncoso and de Grange 2017; Sawhney 2020). One early study focused on police activity, finding that increases in transit

police correlated with decreases in misdemeanor and felony crimes (Chaiken et al. 1974). After reviewing the crime and public transportation literature, Smith and Clarke (2000) concluded that public transit systems typically do not contribute to increased crime, and transit systems are not inherently more dangerous than surrounding neighborhoods and other public spaces.

Clarke, Contre, and Petrossian (2010) estimated the effects of reduced ticket inspections on fare evasions and rider fines in Edmonton, Canada. The study did not find significant changes in fare evasion rates following reductions in ticket checks. In a descriptive study, Reddy, Kuhls, and Lu (2011) examined strategies used to address fare evasion, highlighting the potential effectiveness of arrest as a deterrent compared to summonses. Troncoso and de Grange (2017) employed a time-series approach to understand fare evasion in transport systems, identifying a positive relationship between fare increases and rates of fare evasion. The results also suggested that greater efforts to confirm payment through ticket inspections may not be a sufficient strategy to reduce evasion.

Sawhney (2020) investigated the impact of the Manhattan District Attorney's new policy to curb fare evasion arrests in the subway. The analysis found a decreasing rate of fare evasion arrests, but transit surveillance and non-criminal fare evasion enforcement continued and even increased, especially in communities of color. The proportion of Black residents among remaining arrests grew, suggesting that social and economic factors interact with transit fare enforcement.

METHODS

The complicated relationship between transit system enforcement and overall crime rates calls for a multifaceted approach to monitoring transit-related violations. To analyze fare evasion enforcement in the New York City subway system, the JohnJayREC study team examined arrests and non-criminal fare evasion summons issued in or near subway stations and below-grade "complexes" that allow passengers to move easily between two or more subway lines. Inspired by previous studies and media reports, researchers examined statistical associations between fare evasion enforcement and the frequency of felony and misdemeanor arrests for other offenses. In addition, the study explored differences between subway stations according to the social and economic characteristics of communities.

Data Sources

New York City's Transit Adjudication Bureau provides quarterly data about fare evasion violations for each subway station and station complex in the city. Researchers aggregated the data into annual figures for the years 2018 through 2023. Before combining TAB summons data with NYPD arrest data, the team reviewed police reports of arrests for more than 60 offenses classified by severity level (violations, misdemeanors, and felonies) and the NY penal law code. The research team reviewed the data for missing values, duplicate observations, and geographical discrepancies, such as observations incorrectly tagged only to boroughs or NYPD precincts rather than specific locations. Researchers relied on Chapter 40, Part 3 of the consolidated laws of New York, to establish specific crime categories (see **Appendix A**). The team checked the extent of usable records and assessed the yearly distribution of arrests to identify the most commonly occurring offenses in and around subway complexes. The threshold of acceptable error was set at 15 percent citywide. Arrests for burglary, robbery, and grand larceny exceeded the error threshold and these offenses were excluded from the analysis.

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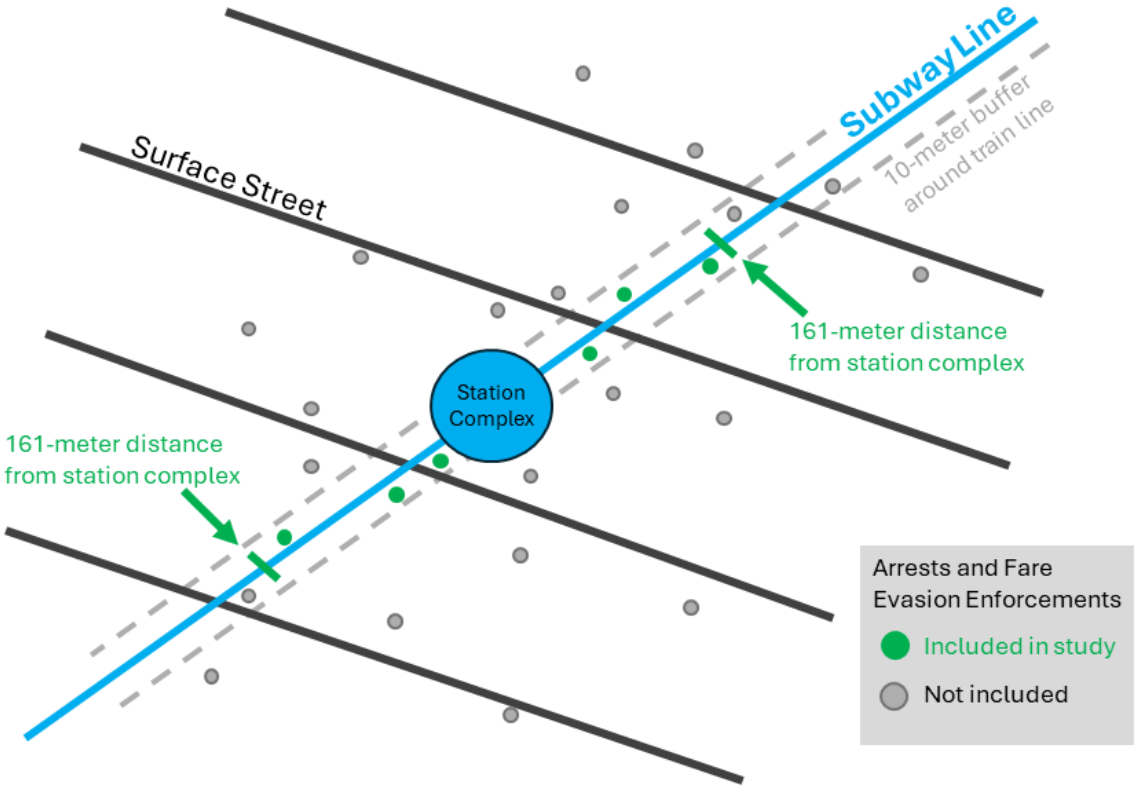
METHODS

Arrest data include jurisdiction codes, indicating the NYPD bureau responsible for each arrest— primarily patrol, transit, and housing. The patrol bureau handles most arrests citywide (88%), followed by the transit bureau (5%). Records from the MTA provide locations and boundaries for all subway stations and station complexes across New York City and Staten Island. With few exceptions, the dataset provides a unique ID for each complex. For example, Times Square/42nd Street and Bryant Park/5th Avenue station complexes are treated as single entities due to the number of transfer links.

Researchers examined MTA ridership data and the legal violations reported in or near each station and station complex from 2018 to 2023. The study team first had to decide how to attribute arrests to the transit system. The NYPD provides geographic coordinates for each arrest, but how close to a station complex would an event need to be to count as "transit related?" Ideally, NYPD data would include a reliable location indicator for every arrest in the subway or elsewhere. However, this was not always the case. Even some enforcement actions reported by the transit bureau did not appear within the boundaries of a subway line or station complex, perhaps because the underlying event was related to a bus route.

Researchers linked (spatially joined) arrests to subway complexes using a near-table approach that determines the closest complex to an arrest and attributes each event to the nearest station complex while avoiding duplicate counts (Figure 1). The team estimated the number of arrests related to the subway system by creating a 10-meter buffer around each subway line and a 161-meter buffer surrounding each station or complex, roughly equivalent to the width of a city street block and the approximate distance covered by someone walking for two minutes. The resulting dataset comprised 75 percent (82,380) of fare evasion arrests organized by subway station or station complex and combined with counts of TAB summonses.

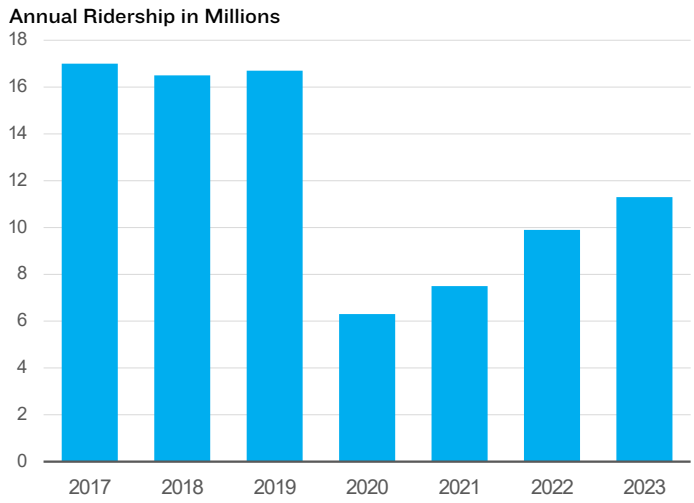
FIGURE 1
IDENTIFYING ENFORCEMENT ACTIONS RELATED TO MTA SUBWAY COMPLEXES



ANALYSIS

Like communities worldwide, the onset of the COVID-19 pandemic disrupted life in New York City. Subway ridership plummeted from more than fifteen million rides annually in 2019 to just over five million rides in 2020 (Figure 2). Use of the train system began to recover in the ensuing years, but ridership reached only 67 percent of pre-pandemic levels by 2023. Between 2017 and 2023, the city reported 123,611 arrests in and around all subway station complexes. In 2017, fare evasions represented 41 percent of all reported arrests in the transit system. After the city began to shift the focus of fare evasion enforcement from arrests to TAB notices, evasion arrests declined to 13 percent of the total by 2019.

FIGURE 2
MTA SUBWAY RIDERSHIP DROPPED WHEN THE COVID-19 PANDEMIC APPEARED IN 2020



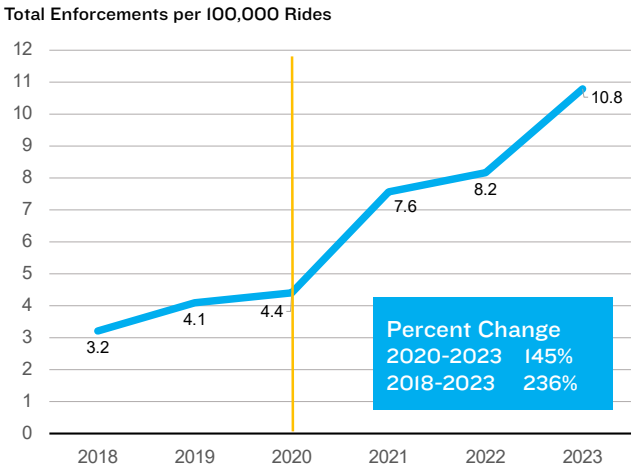
Total fare evasion enforcement actions (arrests plus TAB notices) grew sharply after 2020 (Table 1). In 2020, there were just 26,690 total enforcement actions related to fare evasion in the city subway system. The figure grew to 56,397 in 2021 and to 121,766 by 2023. Part of the increase could be attributed to rebounding ridership as New York began to recover from the economic and social disruption of the COVID-19 pandemic. To examine that possibility, researchers calculated enforcement actions per 100,000 transit rides (Figure 3). The sharp increase in enforcement actions was apparent even after controlling for the return of transit customers.

TABLE 1
FARE EVASION ENFORCEMENT SURGED AS THE COVID PANDEMIC SUBSIDED AND RIDERSHIP RECOVERED

Year	Fare Evasion Arrests	TAB Summons	Total Enforcement Actions (Arrests + Summons)
2017	12,973	---	---
2018	4,015	48,986	53,001
2019	2,210	65,988	68,198
2020	342	26,348	26,690
2021	741	55,656	56,397
2022	952	80,175	81,127
2023	3,187	118,579	121,766

Note: Data represent 413 of the city's 423 subway complexes — i.e., those located in areas with enough data to calculate the index of concentrated disadvantage.

FIGURE 3
FARE EVASION ENFORCEMENT GREW AFTER 2020 EVEN WHEN CONTROLLING FOR THE INCREASE IN RIDERSHIP



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ANALYSIS

Researchers next examined the neighborhood contexts associated with fare evasion enforcements and crimes reported in subway stations between 2018 and 2023 (data for TAB summons were not available for 2017). Data from the U.S. Census Bureau's American Community Survey were used to calculate an index of "social disadvantage" for each neighborhood-sized geographic unit in the city (Neighborhood Tabulation Areas, or NTA) encompassing a subway station or station complex. The disadvantage index included seven metrics: 1) percentage of families with incomes below poverty level, 2) unemployment, 3) proportion of minors in the population, 4) proportion of residents identifying as Black or Hispanic, 5) proportion lacking a high school diploma, 6) proportion of female-headed households, and 7) proportion of households with total annual incomes less than $15,000.

Subway stations were then placed into four groups based on the index of concentrated disadvantage to which the surrounding neighborhood belonged — either the 25 percent (quartile) of stations in areas with the highest socioeconomic disadvantage (i.e., poorest), the medium-high quartile, the medium-low quartile, or the 25 percent located in neighborhoods with the least disadvantaged households (i.e., the wealthiest areas).[1]

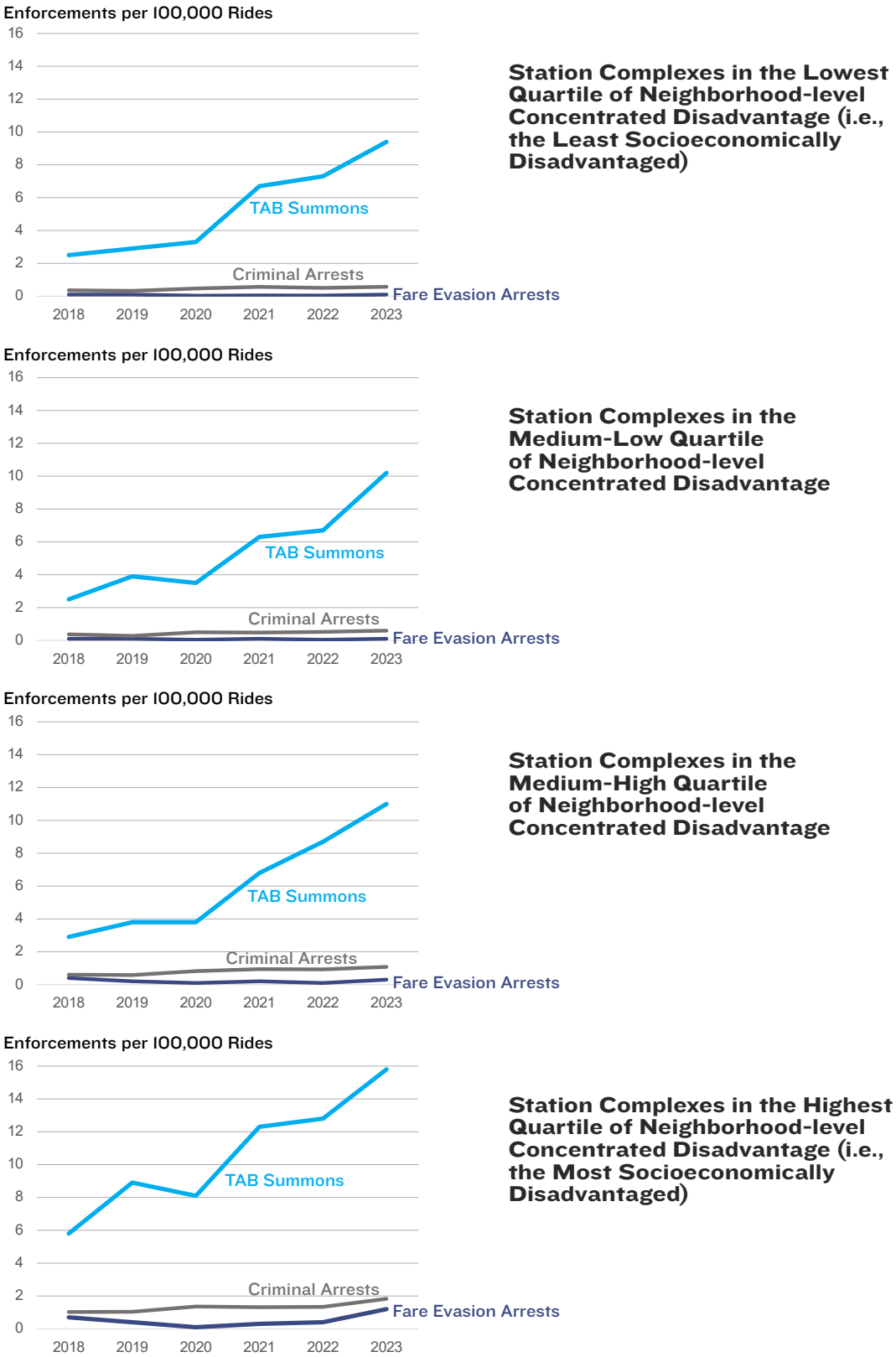
In 2018, complexes in the most disadvantaged neighborhoods experienced 0.7 fare evasion arrests for every 100,000 subway rides. By 2023, the figure nearly doubled to 1.2 arrests for every 100,000 rides. Fare evasion arrests in the least disadvantaged neighborhoods declined by 70 percent with the onset of COVID-19 in 2020 (0.10 to 0.03 per 100,000 rides) before returning to a level of 0.1 per 100,000 in 2023. Similarly, the TAB summons rate was far higher in transit complexes in the most disadvantaged neighborhoods in 2018 (5.8 per 100,000 rides) and remained higher in 2023 (15.8 per 100,000 rides). Summons rates grew between 2020 and 2023 in neighborhoods across all areas of New York City, from the lowest social disadvantage group to the highest (Table 2 & Figure 4).

TABLE 2
FARE EVASION ENFORCEMENTS INCREASED AFTER 2020 IN ALL FOUR NEIGHBORHOOD GROUPS

	2018	2019	2020	2021	2022	2023
Fare Evasion Arrests per 100,000 Rides						
Lowest Disadvantaged Areas	0.1	0.1	0.03	0.05	0.04	0.1
Medium Low Disadvantage	0.1	0.1	0.04	0.1	0.04	0.1
Medium High Disadvantage	0.4	0.2	0.1	0.2	0.1	0.3
Highest Disadvantaged Areas	0.7	0.4	0.1	0.3	0.4	1.2
TAB Summons per 100,000 Rides						
Lowest Disadvantaged Areas	2.5	2.9	3.3	6.7	7.3	9.4
Medium Low Disadvantage	2.5	3.9	3.5	6.3	6.7	10.2
Medium High Disadvantage	2.9	3.8	3.8	6.8	8.7	11.0
Highest Disadvantaged Areas	5.8	8.9	8.1	12.3	12.8	15.8

1. The analysis involved 413 of the city's 423 subway complexes, as 10 complexes were located in NTAs with insufficient census data, thus preventing the calculation of concentrated disadvantage.

FIGURE 4
TRANSIT EVASION ENFORCEMENTS VIA TAB SUMMONS INCREASED FAR MORE THAN ARRESTS AFTER 2020 IN ALL AREAS OF THE CITY



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ANALYSIS

There were substantial disparities between subway complexes in the city's most and least disadvantaged areas. Complexes in the highest quartile of socioeconomic disadvantage experienced significantly higher enforcement rates compared to those in the lowest quartile of disadvantage. This highlights the influential role of socioeconomic factors in shaping both the incidence of crime and the detection and reaction to crime by law enforcement.

Correlates of Increased Enforcement

Researchers conducted over 100 statistical models to test the relationship between felony and misdemeanor arrests and fare evasion enforcements. Goodness of fit statistics (e.g., AIC, BIC, and log-likelihood values) were assessed to select the most appropriate statistical model (Table 3). Key challenges in these analyses were excessive zeroes and overdispersion (i.e., when data values are spread out due to the variance in values consistently exceeding means). Although imperfect, the most appropriate model was a negative binomial fixed effects model.

To improve the accuracy of the findings, the team specified models that account for the level of socioeconomic disadvantage in the surrounding neighborhood and the rate at which people used the subway (annual ridership). Clustered standard errors helped deal with differences between subway complexes. Each subway complex can be seen as a cluster, or a data group where observations are expected to be more similar to one another than to observations in other groups. In other words, all arrests recorded at one subway complex might share characteristics or influences that differ from those at other complexes due to some combination of location-specific factors like community housing, business activity, population density, law enforcement practices, or general socioeconomic conditions.

TABLE 3
MULTIVARIATE MODELS: CHANGE RATE IN YEARLY COUNTS OF FARE EVASION ENFORCEMENT

	General Outcomes					
	Total Arrests		Felony Arrests		Misdemeanor Arrests	
Predictors	IRR	SE	IRR	SE	IRR	SE
Fare evasion enforcement	0.9998	(0.00014)	0.9998	(0.00015)	0.99986	(0.00016)
Socioeconomic Disadvantage Group (Relative to Lowest Disadvantage)						
Medium Low	0.826	(0.247)	1.199	(0.351)	0.708	(0.248)
Medium High	1.545	(0.568)	** 2.647	(1.088)	1.201	(0.470)
Highest	** 1.916	(0.553)	*** 3.406	(0.965)	1.4691	(0.505)

IRR (Incidence Rate Ratios) SE (Standard Errors) *p <0.10 **p <0.05 ***p <0.01

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Estimates from the models (coefficients) were exponentiated and interpreted as incidence rate ratios (IRR) used to compare how the occurrence of something changes when a predictor in the model changes. To interpret IRR, simply subtract 1.0 from the coefficient. For instance, the IRR for the outcome of arrests in general is 0.9998, meaning that each instance of fare evasion enforcement is associated with a decrease of –0.0002 (or 0.02 percent) in arrests. Each model tested also included the socioeconomic disadvantage group to tighten the results for established predictors of reported crime. Again using general arrests as an example, stations surrounded by the most disadvantaged neighborhoods were associated with 91.6 percent more arrests than those in the lowest disadvantaged neighborhoods.

The study results revealed no statistically significant associations between fare evasion enforcements and criminal arrests for felonies and misdemeanors. Thus, fare evasion policies do not appear to reflect environments of generally high crime. When focusing the results on specific types of reported crime, however, fare evasion enforcement was statistically associated with arrests for cannabis possession (-), petty larceny (-), and drug possession (+) (Table 4).

While fare evasion enforcements are not an indicator of overall crime, the findings imply that fare evasion checks could incidentally lead to arrests for less serious offenses and may be associated with the rate at which individuals are charged with less serious offenses. After accounting for fare evasion enforcement, study results suggest a robust positive and statistically significant association between socioeconomic disadvantage and increased arrest rates for specific offenses, including assault, cannabis possession, drug possession, and weapon possession. Petit larceny arrests, however, were negatively associated with fare evasion in the medium-low group compared with the least disadvantaged group.

TABLE 4
MULTIVARIATE MODELS: CHANGE RATE IN YEARLY COUNTS OF FARE EVASION ENFORCEMENT

	Specific Outcomes									
	Assault		Cannabis Possession		Drug Possession		Weapon Possession		Petit Larceny	
Predictors	IRR	SE	IRR	SE	IRR	SE	IRR	SE	IRR	SE
Fare evasion enforcement	0.9998	0.00013	0.9992 ***	0.00021	1.0008 **	0.00040	1.0002	0.00015	0.9996 **	0.00018
Socioeconomic Disadvantage Group (Relative to Lowest Disadvantage)										
Medium Low	1.262	0.335.	2.099 ***	0.5941	3.072 ***	1.049	1.799 ***	0.332	0.400 *	0.201
Medium High	2.468 ***	0.978.	3.311 ***	0.8741	4.367 ***	1.122	4.129 ***	0.817	0.648	0.364
Highest	2.882 ***	0.833.	8.409 ***	2.432	6.630 ***	1.754	7.586 ***	1.266	0.626	0.328

IRR (Incidence Rate Ratios) SE (Standard Errors) *p <0.10 **p <0.05 ***p <0.01

CONCLUSION

Between 2018 and 2023, New York City experienced a 236 percent surge in fare evasion enforcements in the subway system (16% in fare evasion arrests and 254% in TAB summons) as well as a 65 percent rise in felony and misdemeanor arrests in and around subway stations. The growth of fare evasion enforcement reflects a shift in police practices and policies as well as the influence of socioeconomic factors. Subway stations in the most disadvantaged neighborhoods experienced 17.1 fare evasion enforcements for every 100,000 passenger rides in 2023, nearly double the rate in the least disadvantaged neighborhoods (9.5 per 100,000 rides).

A key question is whether growing fare evasion enforcement in the New York City subway system is a reflection of neighborhood crime rates. According to the results, the answer is likely no. Neighborhood-specific fare evasion enforcement is not a strong predictor of overall crime rates. Increases in fare evasion enforcement were not associated with significant changes in arrests for assault or weapons possession, although the study did find modest and mostly negative associations with less serious offenses — i.e., cannabis possession (-0.06%), drug possession (0.08%), and petit larceny (-0.04%).

Fare evasion enforcement rates vary in alignment with the social and economic characteristics of neighborhoods. Subway complexes in neighborhoods characterized by high levels of socioeconomic disadvantage experience a higher overall incidence of fare evasion arrests and TAB summons. Subway complexes in the most disadvantaged neighborhoods experienced significantly greater incidences of arrests for weapons (659%) and cannabis possession (741%) compared with complexes in the lowest disadvantaged subgroup.

These findings underscore the forces connecting social and economic conditions, reported crime, and law enforcement practices. The study suggests the need for public safety interventions that target the broad array of social disparities that affect crime. Policies to improve economic conditions, educational opportunities, and community services in highly disadvantaged areas could help reduce transit fare evasion and other violations. Adopting a holistic approach to crime prevention that integrates law enforcement efforts with socioeconomic interventions would acknowledge the multifaceted nature of crime causation and perhaps mitigate the underlying factors that often contribute to criminal behavior.

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