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# EXAMINING THE LOCATION OF CANNABIS DISPENSARIES IN ONTARIO

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# DISCLOSURES

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- ▶ We have no affiliation (financial or otherwise) with a cannabis producer, processor, distributor or communications organization



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# OBJECTIVES

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- ▶ To examine the association between **cannabis retail availability** and **neighbourhood characteristics** in Ontario, Canada at two timepoints:
  - **Sept 2018**: One month before recreational cannabis legalized
  - **April 2019**: First month of legal cannabis retail



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# OVERVIEW

- ▶ Why is cannabis retail location important?
- ▶ Methods
- ▶ Results
  - Illicit outlets: Sept 2018
  - Legal outlets: April 2019
- ▶ Discussion & next steps



<https://depositphotos.com/201664716/stock-illustration-royalty-free-marijuana-leaves-style.html>



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# MITIGATING SUBSTANCE-RELATED HARMS

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- ▶ Tobacco and alcohol literature indicates regulating **physical availability** effective to mitigate harms
  - Retail stores concentrate in lower socioeconomic status neighborhoods
  - Increased physical availability → higher consumption and harms
- ▶ Little evidence for cannabis



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# CANNABIS RETAIL IN ONTARIO

- ▶ Status of cannabis retail in Ontario
  - Prior to Oct '18: **Illicit stores**
  - Oct '18 – March '19: Online only
  - April '19 to present: **Online and legal stores**



<https://www.cbc.ca/news/business/cannabis-licence-retail-1.4977773>



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## METHODS – ILLICIT RETAIL LOCATIONS

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- ▶ Extracted location of illicit cannabis dispensaries from [www.weedmaps.com](http://www.weedmaps.com) on Sept 16, 2018
- ▶ Validated locations by manual searches of internet listings



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# WEEDMAPS.COM

weedmaps Search for dispensaries, deliveries & brands Ottawa, ON LOG IN SIGN UP

HOME MAPS BRANDS DEALS LEARN

BUSINESS TYPES AMENITIES AGE RESTRICTIONS OPEN NOW MEDICAL WEEDS/TOBACCO

MARIJUANA LISTINGS in Ottawa, ON, Ontario

- 613 Delivery 4.5 (10 REVIEWS) 9:00 BY 20 REVIEWS OPEN NOW 11 MENU ITEMS
- Sanic Organics 5.0 (13 REVIEWS) 5:00 BY 13 REVIEWS OPEN NOW 3 MENU ITEMS
- National Access Cannabis-Ottawa 5.0 (2 REVIEWS) 5:00 BY 2 REVIEWS OPEN NOW
- Canabo 3.5 (2 REVIEWS) 3:50 BY 2 REVIEWS OPEN NOW
- Vital Medicinals 4.5 (38 REVIEWS) 3:45 BY 38 REVIEWS OPEN NOW 57 MENU ITEMS
- MJNExpress.ca 5.0 (13 REVIEWS) CANNABIS WIDE BASK ORDER, ON 5:00 BY 13 REVIEWS OPEN NOW 53 MENU ITEMS

The Hemp Company 4.0 (4 REVIEWS) 4:00 BY 4 REVIEWS OPEN NOW

SWEET TOOTH \$100/OZ

Home Ottawa, ON Listings Ottawa, ON Listings

weedmaps Search for dispensaries, deliveries & brands Ottawa, ON LOG IN SIGN UP

HOME MAPS BRANDS DEALS LEARN

The Hemp Company 4.0 (4 REVIEWS) 343-998-5623 OPEN NOW 10:00am - 9:00pm

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Hours of Operation

Mon	10:00am - 9:00pm
Tue	10:00am - 9:00pm OPEN NOW
Wed	10:00am - 9:00pm
Thurs	10:00am - 9:00pm
Fri	10:00am - 9:00pm
Sat	10:00am - 9:00pm
Sun	10:00am - 9:00pm

Social Media

Amenities

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Hide Information



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# METHODS – LEGAL RETAIL LOCATIONS

- ▶ Extracted location of legal cannabis outlets from **Alcohol and Gaming Commission of Ontario** on April 1, 2019



HOME

## Status of current Cannabis Retail Store Applications

Store Name	Operator Name	Municipality	Store Address	Retail Operator Licence Status	Retail Store Authorization Status
The Niagara Herbalist	The Niagara Herbalist	St. Catharines	33 Lakeshore Rd Unit 15 St. Catharines, ON	Issued	Issued
Ameri	Seyedarash Seyedameri	Toronto	20 Cumberland St Toronto, ON	Issued	Issued
Ganjika House	CGS Foods Inc.	Brampton	186 Main St, S Brampton, ON	Issued	Issued



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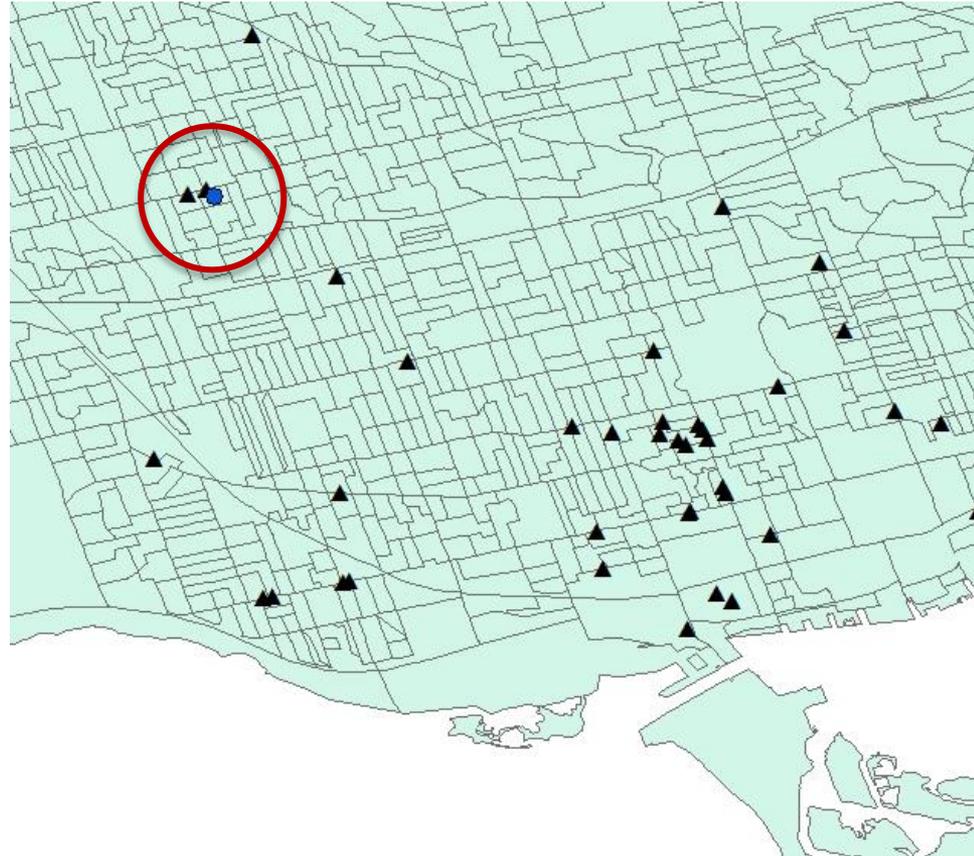
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# METHODS

- ▶ Using **Geographic Information System**:
  - Geocoded location of all stores
  - Calculated number of outlets within 1000 meters from center each of 12,184 urban neighborhoods (dissemination areas) in Ontario
  - Distance between outlets to nearest school or university



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# METHODS

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- ▶ Characterized neighbourhoods using **Ontario Marginalization Index (OMI)**
  1. Residential instability (e.g. home ownership, proportion living alone)
  2. Material Deprivation (e.g. income and educational attainment)
  3. Dependency (e.g. seniors and unemployed)
  4. Ethnic concentration (e.g. recent immigrants or visible minorities)



## METHODS – ONTARIO MARGINALIZATION INDEX

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- ▶ **Descriptive statistics** for distance to schools
- ▶ **Negative binomial regression models** to examine associations between cannabis access between most and least quintile marginalization for each dimension of OMI



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## RESULTS -- ILLICIT CANNABIS RETAIL

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- ▶ N=188 illicit dispensaries operating Sept 2018
- ▶ **Proximity to schools**
  - Median 350 meters (IQR 305), mean 612 (SD 963)
  - 132 (70%) within 500 meters of a school (elementary and secondary), college or university



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# RESULTS – LEGAL CANNABIS RETAIL

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- ▶ N=23 legal dispensaries April 2019
- ▶ **Proximity to schools**
  - Median 466 meters (IQR 263), mean 513 (SD 317)
  - 14 (61%) within 500 meters of a school (elementary and secondary), college or university
  - No difference in mean distance ( $p = 0.63$ ) or median distance ( $p = 0.12$ ) between illicit and legal



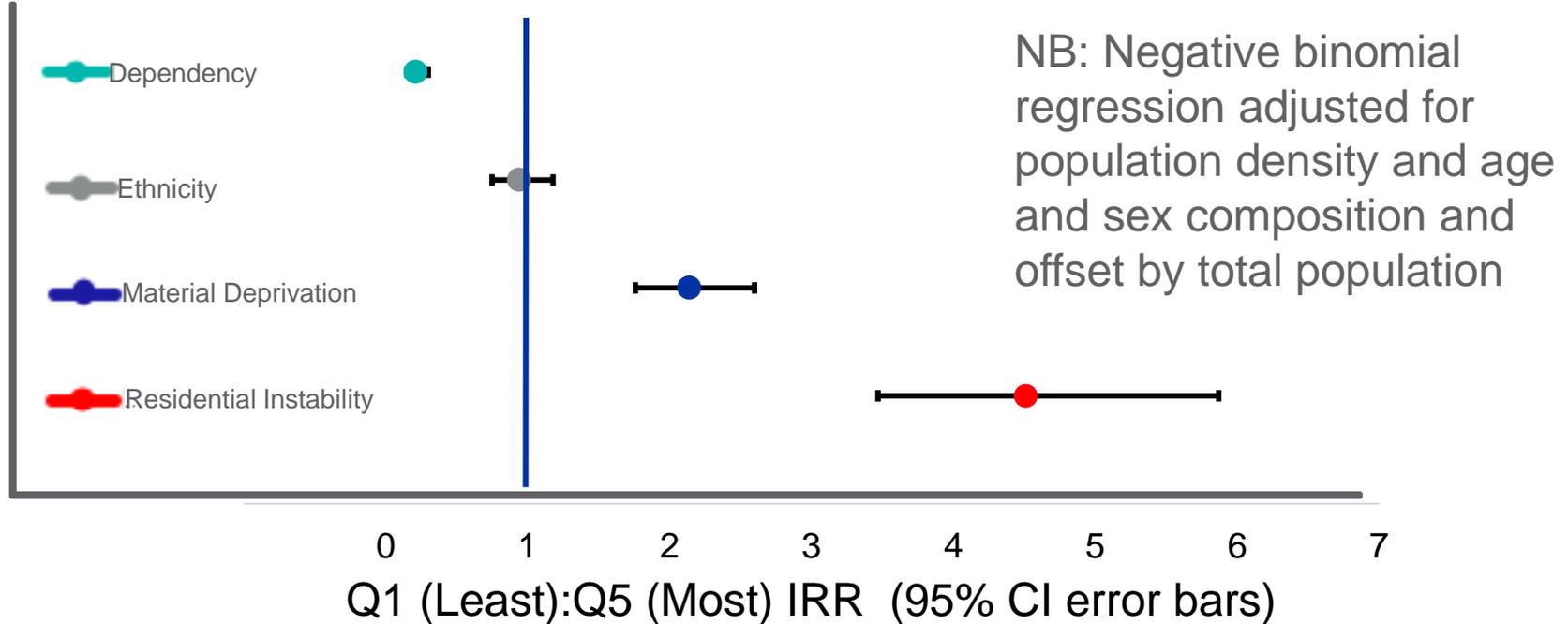
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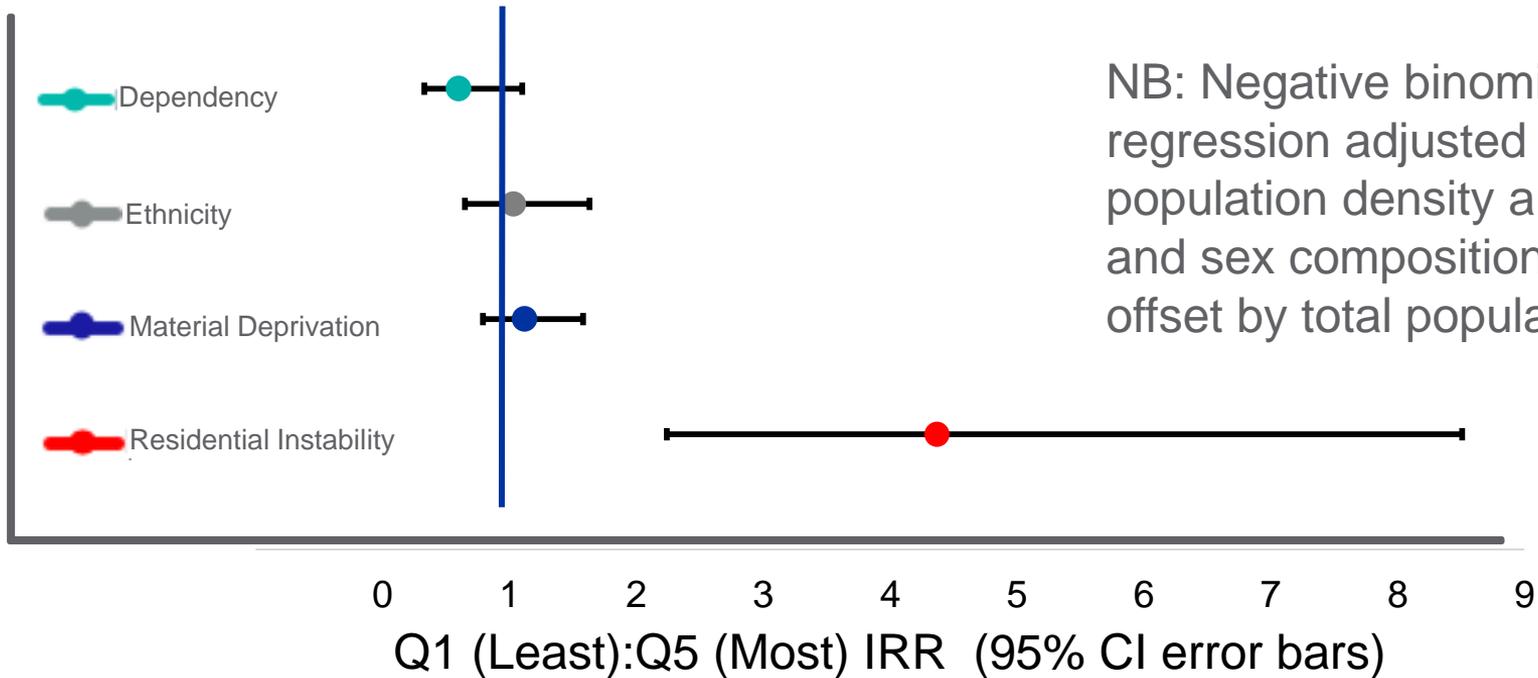
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# ILLICIT CANNABIS DISPENSARIES & OMI DIMENSIONS



# LEGAL CANNABIS DISPENSARIES & OMI DIMENSIONS



## DISCUSSION – CANNABIS RETAIL IN ONTARIO

- ▶ Most legal and illegal cannabis dispensaries located within 500 meters of a school
  - Is this far enough?
- ▶ Illicit market was concentrated in low SES neighborhoods; we are not observing similar patterns in legal market
  - Why is this the case?



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# CONCLUSIONS

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- ▶ Location of illicit market potentially contributed to disparities
- ▶ Need to expand analysis nationally
- ▶ Future research should examine association between cannabis availability and cannabis-related harms



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# QUESTIONS?

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