

# Understanding the Dynamics between Vaping and Cannabis Legalization Using Twitter Opinions

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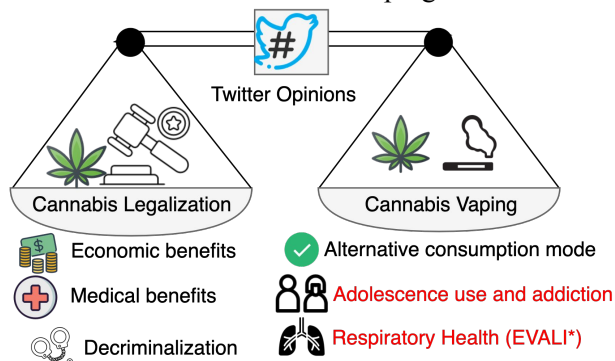


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## Motivation

Cannabis legalization welcomed by US states but its role in escalation to cannabis vaping is unclear.



## Research Goal

To **understand the impact** of recreational cannabis legalization on the development of **pro-cannabis attitude** for the population with a **positive attitude** toward e-cigarettes by analyzing **public opinions** on Twitter.

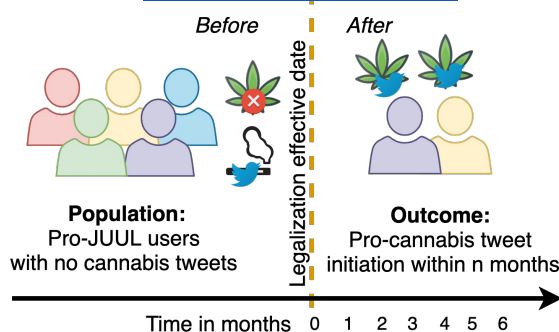
Recreational cannabis legalization

Pro-e-cigarette attitude

Pro-cannabis attitude

\*E-cigarette or Vaping product use-Associated Lung Injury

## Causal Estimation

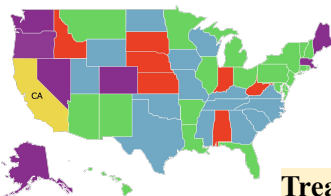


## Treatment/Control Assignment

- **Treatment (T)**: Users from state with newly legalized recreational cannabis (E.g., California on Jan 01, 2018)

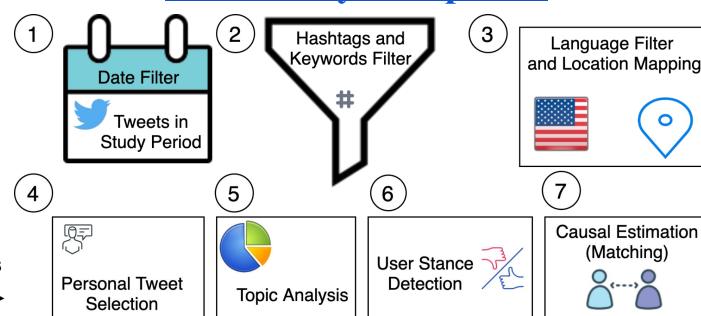
- **Four control groups** of users from all other US states separated based on their cannabis legalization policy on the treatment state's legalization effective date:

- C1: Illegal to use
- C2: Legal for medical use with limited THC
- C3: Legal for medical use
- C4: Legal for recreational use



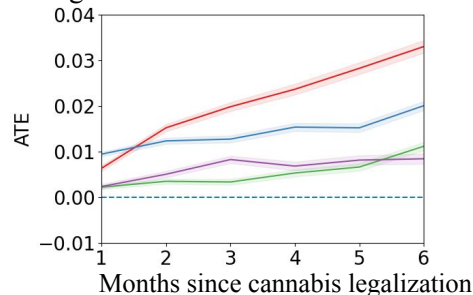
**Matching**: Inverse probability of treatment weighting (IPTW)

## Data Analysis Pipeline



## Experimental Results

Average Treatment Effect for California



**Treatment** users are more likely to initiate pro-cannabis tweets than control users, especially from states where cannabis is illegal (**C1**).