Cannlytics

Cannabis Data Science #86
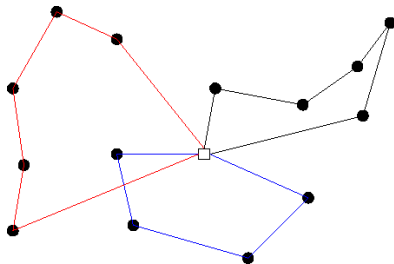
October 5th, 2022

The Vehicle Routing Problem
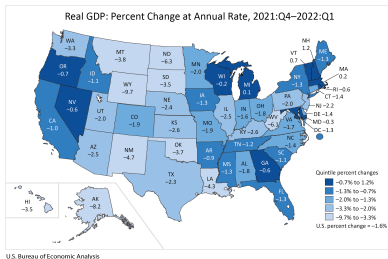
Variants of the problem:

- Pickup and delivery;

- Time windows;

- Carrying capacity;

- Multiple trips;

- No depot;

- Multiple depots;

- **Inventory demand**.

Research Question

Hypotheses

- Is there a relationship between a state permitting adult-use cannabis and its GDP?

- If a state permits adult-use, does the number of retailers per capita affect its GDP?

Real GDP: Percent Change at Annual Rate, 2021:Q4–2022:Q1

U.S. Bureau of Economic Analysis

Methodology

Assuming the following model,

$$\text{GDP}_s = \beta_0 + \beta_1 D_s + \beta_2 X_s + \mu_s,$$

where

$$D_s = \begin{cases} 0 \text{ if adult-use is not permitted,} \\ 1 \text{ if adult-use is permitted,} \end{cases}$$

X_s is number of retailers per capita in state s,

we can interpret:

- β_1 as the expected change in GDP from a state permitting adult-use cannabis,

- β_2 as the expected change in GDP from an increase in 1 retailer per capita (100,000 people).

Data

States where adult-use is permitted:

- Alaska
- Arizona
- Colorado
- Connecticut
- Illinois
- Maine
- Massachusetts
- Michigan

- Montana
- New Mexico
- Nevada
- New Jersey
- Oregon
- Rhode Island
- Vermont
- Washington

States where adult-use will soon be permitted:

- New York
- Virginia
- D.C.?

🙏 **Thank you for coming.**

Insight of the Day

- A little planning goes a long way!

What is on your mind for next week?