AN EXPLORATION ON THE RELATIONSHIP BETWEEN SUGAR-SWEETENED BEVERAGES AND DISEASES IN THE UNITED STATES

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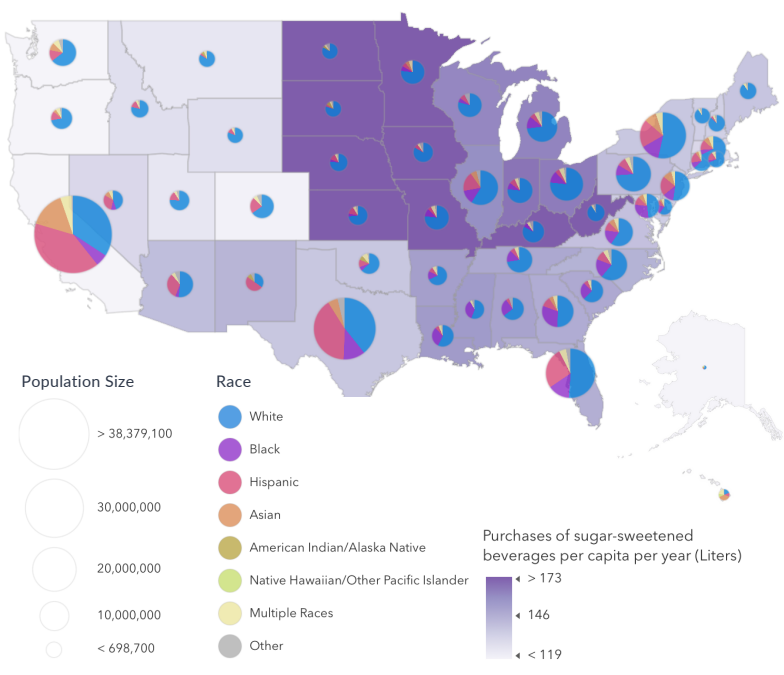
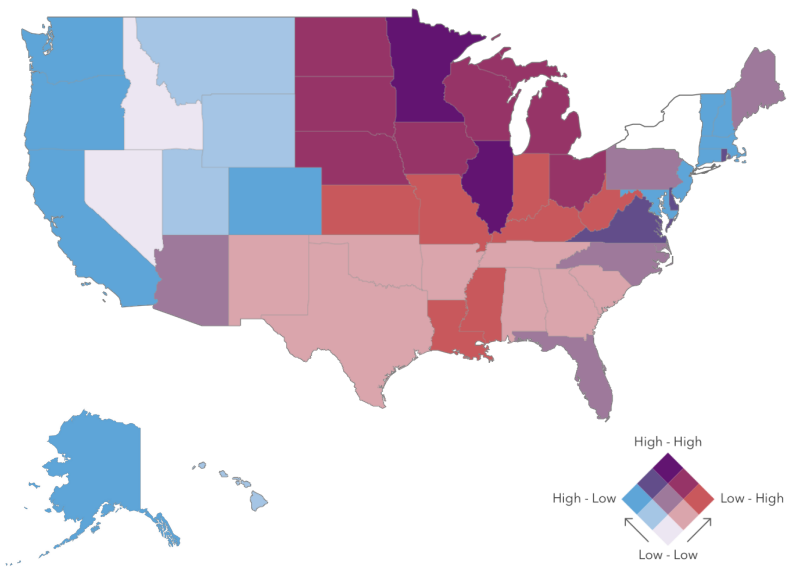
THE INFLUENCE OF DEMOGRAPHIC FACTORS ON THE PURCHASE OF SUGAR-SWEETENED BEVERAGES IN THE UNITED STATES

Population Size, Distribution of Race, and Purchases of sugar-sweetened beverages per capita per year (Liters)



- Purchases of sugar-sweetened beverages per capita per year are the highest in Midwestern states due to their poorer socioeconomic status; and the lowest in Western and Northeastern states due a better socioeconomic status and the implementation of soda taxes in Seattle, Boulder, 4 Californian Cities, the District of Columbia, and Philadelphia (Urban Institute, 2019).

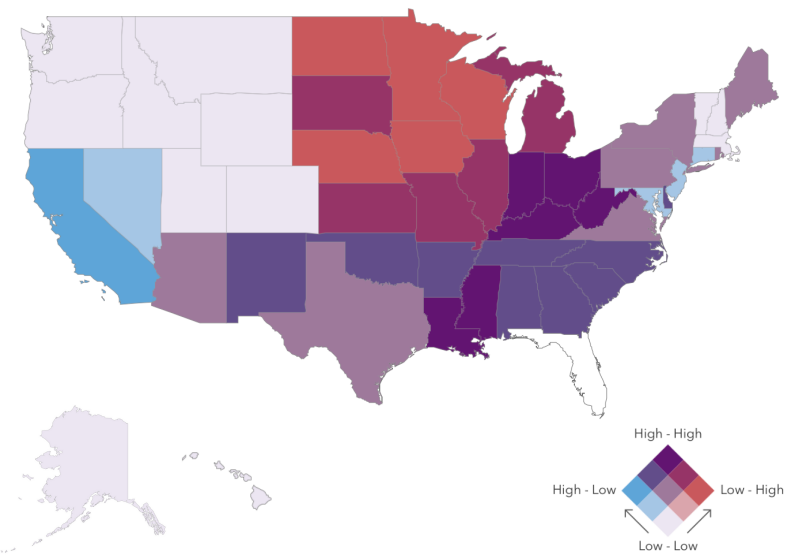
↖ *Income per capita (US$)*
versus
↗ *Purchases of sugar-sweetened beverages per capita per year (Liters)*



- According to George Washington University's School of Public Health (2022), low-income families are twice as likely to consume sugar-sweetened beverages compared to high-income families, as these beverages are highly affordable and low-income families tend to have a negative perception on tap water.
- A "Low Income - High Purchase trend" can be observed in Midwestern, Southwestern, Southeastern states (e.g., US$30,195 and 177.1 Liters in West Virginia), while a "High Income - Low Purchase trend" can be observed in Western and Northeastern states (e.g., US$44,617 and 120.5 Liters in Colorado).

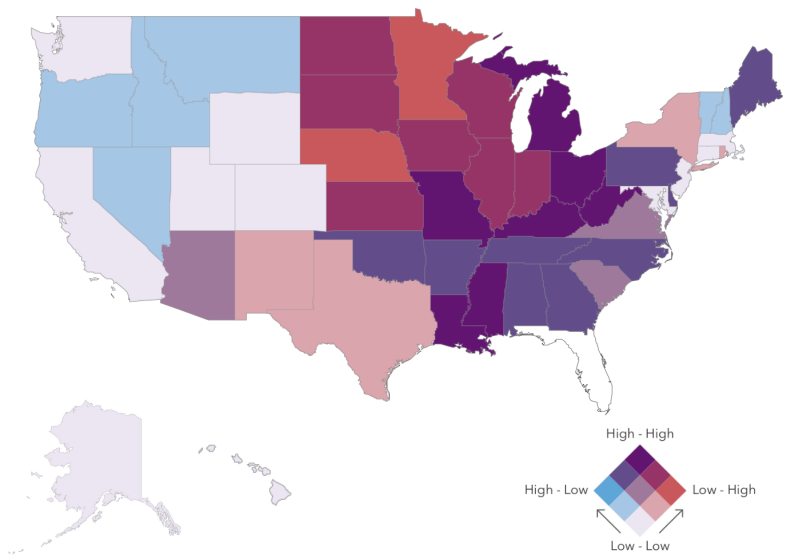
RELATIONSHIP BETWEEN THE PURCHASE OF SUGAR-SWEETENED BEVERAGES AND DISEASES IN THE UNITED STATES

↖ *Population diagnosed with **Diabetes** (%)*
versus
↗ *Purchases of sugar-sweetened beverages per capita per year (Liters)*



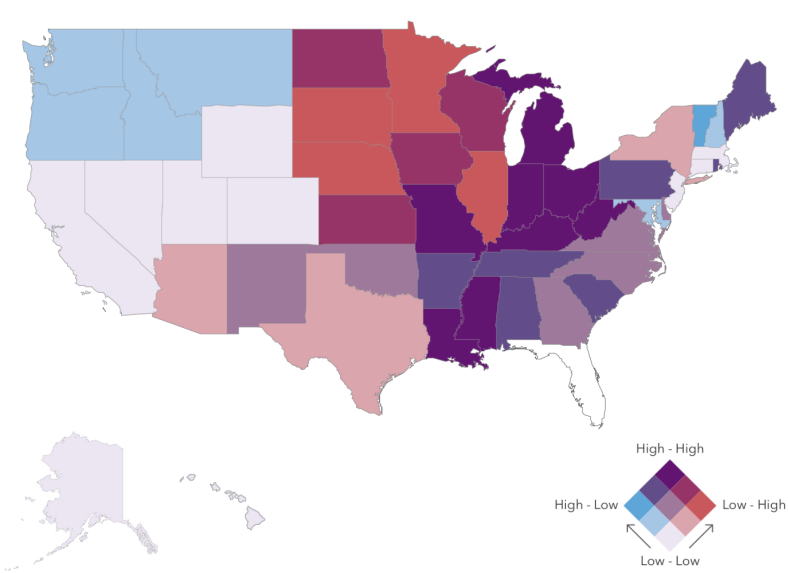
- According to The InterAct Consortium (2013), drinking one can of sugar-sweetened beverage everyday may increase the risk of developing type 2 diabetes by 22%, as blood glucose levels increase.
- A "High-High trend" in diabetes and purchase of sugar-sweetened beverages can be observed in Midwestern, Southeastern, and Southwestern states (e.g., 12.1% and 167 Liters in Indiana), while a "Low-Low trend" tended to be observed in Western states (e.g., 9.6% and 90.8 Liters in Oregon).

↖ *Population diagnosed with **Cardiovascular Diseases** (%)*
versus
↗ *Purchases of sugar-sweetened beverages per capita per year (Liters)*



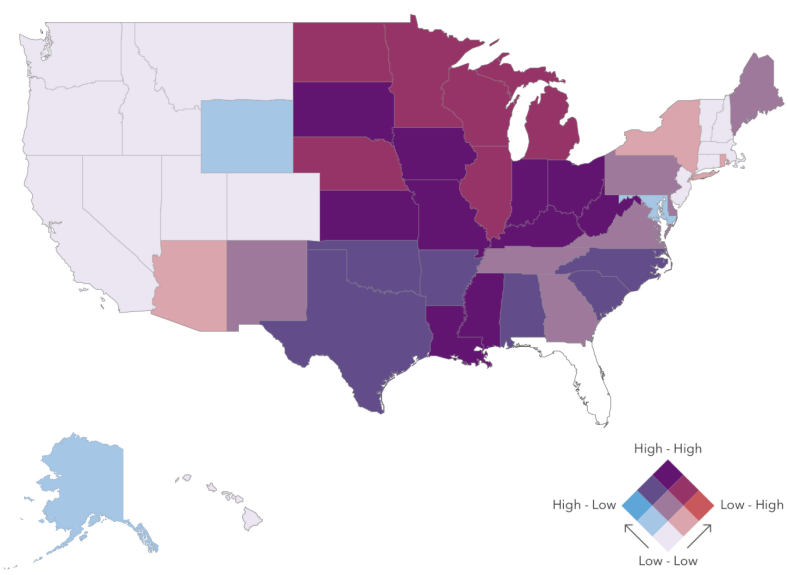
- According to Pacheco et al. (2020), consuming fruit drinks and soda drinks on a daily basis increase the likelihood of experiencing cardiovascular diseases by 42% and 23% respectively, as these beverages lead to high blood pressure, high cholesterol and triglyceride levels, and chronic inflammation, all of which worsens heart conditions.
- A "High-High trend" in cardiovascular diseases and purchase of sugar-sweetened beverages can be observed in Midwestern, Southeastern, and certain Northeastern states (e.g., 12.4% and 155.6 Liters in Mississippi), while a "Low-Low trend" can be observed in Western states (e.g., 6.4% and 92.4 Liters in California).

↖ *Population diagnosed with **Arthritis** (%)*
versus
↗ *Purchases of sugar-sweetened beverages per capita per year (Liters)*



- A study on 186,900 women found that those who drank at least one soda drink per day were found to be 60% more likely to get rheumatoid arthritis compared to those who drank less than one per month. This is because sugar-sweentened beverages release pro-inflammatory proteins named cytokines, leading to pain, swelling, and stiffness in the joints (Hu et al., 2014).
- A "High-High trend" in arthritis and purchase of sugar-sweetened beverages can be observed in Midwestern, Southeastern, and certain Northeastern states (e.g., 29.5% and 155.1 Liters in Louisiana), while a "Low-Low trend" can be observed in Western states (e.g., 20.9% and 125.1 Liters in Utah).

↖ *Population with a body mass index of 30 or over (**Obesity**) (%)*
versus
↗ *Purchases of sugar-sweetened beverages per capita per year (Liters)*



- A 20-year study on 120,000 adults found that those who increased their consumption of sugar-sweetened beverages by one 12-ounce serving per day gained an extra pound every 4 years on average, compared to people who did not change their intake. This is because sugar-sweetened beverages contributes to added sugar content, low satiety, and incomplete compensation for total energy, which increase people's appetite (Mozaffarian et al., 2011).
- A "High-High trend" in obesity and purchase of sugar-sweetened beverages can be observed in Midwestern, Southeastern, and certain Southwestern states (e.g., 36.4% and 194.9 Liters in Iowa), while a "Low-Low trend" can be observed in Western states (e.g., 28.8% and 89.7 Liters in Washington).

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