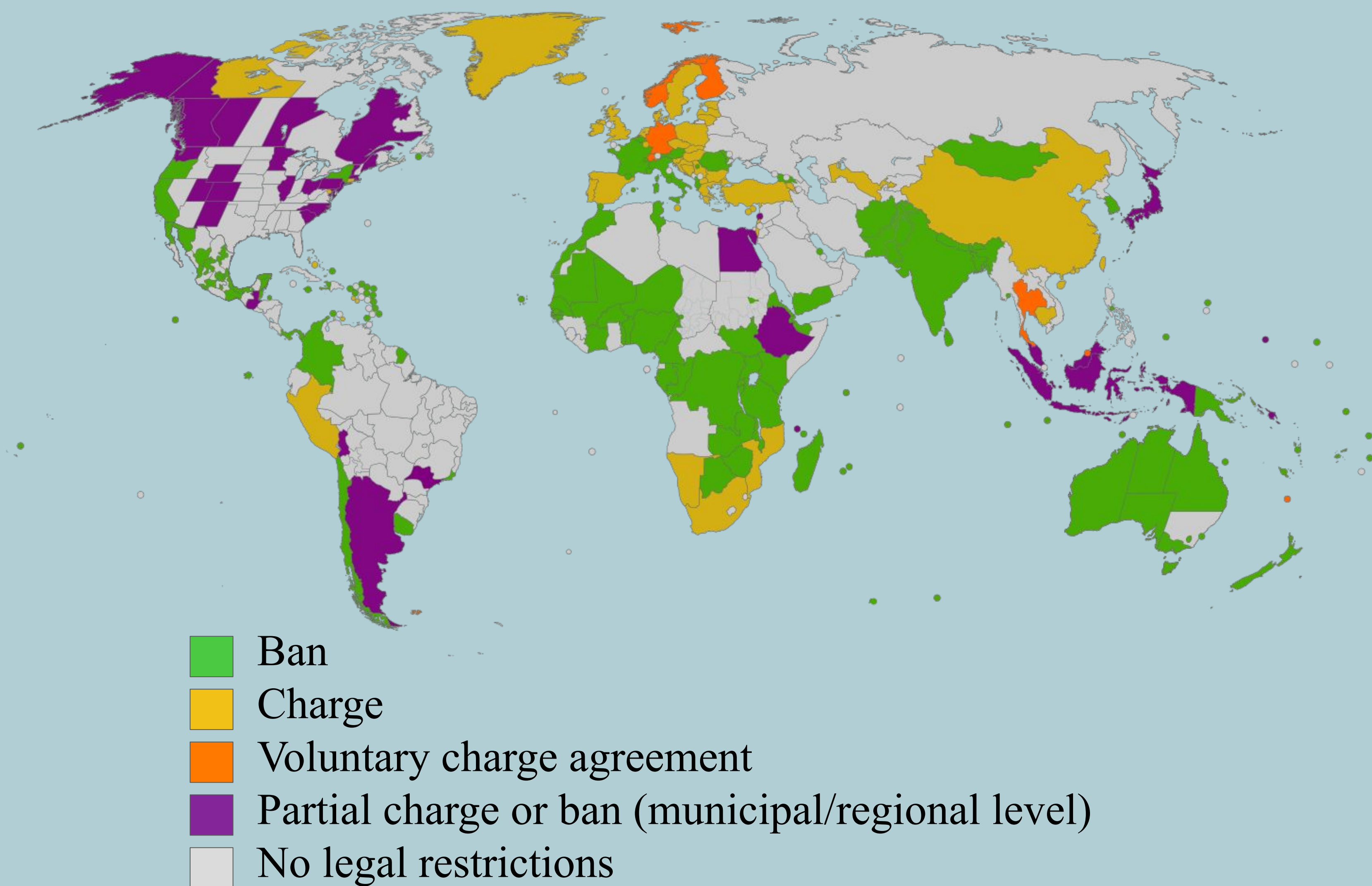


Plastic bag reduction policies: What is the most effective approach?

Abstract:

Plastic pollution has been a hot topic in the scientific community for decades, and more recently, legislation to curb the problem has been popping up across the globe. Plastic bags are a particular item that has been identified as a large offender in plastic pollution. The environmental damage and economic cost of this pollution is widely documented and can be reviewed in Derraik's 2002 study and Wagner's 2017 study. This paper will review and analyze literature on the success of plastic bag reduction policies around the world, and determine which solutions are most effective in order to make relevant policy recommendations. The three main policy strategies reviewed in this paper are **bans, fees or taxes, and education or marketing**. I initially estimated that the most effective policy would be a full ban on plastic bags. My research found that the most effective policy is a ban coupled with a high rate fee on substitute products like paper or compostable bags. However, in jurisdictions where a ban cannot be adequately enforced or passed into law, fees or taxes for plastic bags should still help to reduce usage. Marketing and educational campaigns for these policies had mixed results, more research is needed in this area.



Literature review and critique:

- Bans led to 96% decrease in bag usage in South Australia; ineffective in Delhi due to lack of enforcement capacity; effective in US cities, but resulted in higher demand for paper bags.
- Low rate fees resulted in ~40% decrease in bag usage in cities across the US; study of Montreal found that these “nudge” fees were only highly effective among populations with higher incomes and higher educational attainment levels.
- High rate fees: 94% decrease in bag usage in Ireland; very effective in Botswana; ineffective in South Africa, but the prices fluctuated throughout the study.
- Education/Marketing: Unsuccessful on their own in the US and South Australia; increased the effectiveness of fees in US and Delhi when used in tandem; Delhi study found that positive messaging is more effective than negative messaging; most of the studies failed to account for the impact of messaging in educational and marketing campaigns for these policies.

Policy recommendations:

- Bans are the most effective policy in jurisdictions that have the capacity to enforce them, these policies should be combined with high rate fees on paper bags to avoid demand shift.
- High fees or taxes are the second most effective policy, best choice for jurisdictions with low enforcement capacity, but it is important that the fees stay consistently high enough to discourage consumption.
- Education and marketing can be combined with either of the above policies to increase effectiveness, but messaging should emphasize positive reinforcement.

Scan the QR code or click the link below to view the full paper and sources:

<https://docs.google.com/document/d/1qQor3LD1KLkxbA22njfkv1Xvat9B9WaQ6S9bDuaH1wg/edit?usp=sharing>



Presented by Emily Jeffries

University of North Florida

n01177596@unf.edu

<https://www.linkedin.com/in/emily-jeffries-031b08183/>

Faculty Mentor Dr. Joshua Gellers

University of North Florida

josh.gellers@unf.edu

Image source: Elekh / CC BY-SA

[\(https://creativecommons.org/licenses/by-sa/3.0/\)](https://creativecommons.org/licenses/by-sa/3.0/)