

THE PUBLIC PURPOSE JOURNAL
VOL. XXI | SPRING 2023

Copyright © 2023 by The Public Purpose

The Public Purpose
American University
School of Public Affairs
4400 Massachusetts Ave NW
Washington, DC 20016

Journal Layout & Design: Dakota Engel
Cover Image Design: Juan Carlos Guerrero

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, except with the written permission from The Public Purpose or the author as dictated by the copyright.

ABOUT THE JOURNAL

The Public Purpose Journal is a peer-reviewed interdisciplinary journal presenting the work of American University graduate students from the Departments of Government; Justice, Law, and Criminology; and Public Administration and Policy. Founded in 2002, The Public Purpose is supported by the SPA Graduate Student Council with the involvement and guidance of the Faculty Review Board, consisting of some of American University's most distinguished professors. In addition to an annual print journal, The Public Purpose also manages an online public affairs publication (thepublicpurpose.com). The journal is entirely student run and currently has a staff of about 25 students.

Feel free to contact us at:
publicpurposejournal@gmail.com
thepublicpurpose.com

TABLE OF CONTENTS

FROM THE EDITORS	1
OUR STAFF	2
CHILD AND EDUCATION POLICY	4
The Effect of the 2014 Child Care and Development Block Grant Act on Parental Preference of Regulated and Unregulated Child Care Providers <i>Daniel Lee</i>	5
Solutions to School Mass Shootings: An Analysis <i>Julia Rosenberg</i>	13
Book Banning in Postmodern America: Who's Actually Doing This? <i>Katherine Cassandra Sperow</i>	29
ENVIRONMENTAL AND ENERGY POLICY	44
Carbon Dioxide Removal: A Climate Change Panacea <i>Christopher Caisse</i>	45
Sustainably Funding Wildlife Conservationism <i>Alan Goodman</i>	53
The Process of and Approach to Energy Technology Innovations <i>I-Lin Lin</i>	61
GENDER POLICY	64
Reviewing the Uniform Code of Military Justice in Sex Crime Policies <i>Sarah Bartholomew</i>	65
The Effect of Perpetrator Treatment Programs on Reducing Intimate Partner Violence Recidivism <i>Melissa Kilmer</i>	69
Separating Motherhood from Womanhood in the Struggle for Citizenship <i>Ingela Rundquist</i>	77
Current Events Photos and Commentary <i>Marissa Solomon-McRoy</i>	83

HEALTH AND URBAN POLICY	86
A Cost-Benefit Analysis of Addressing DC Food Insecurity <i>Tashfia Hasan, Leena Khurana, Matipa Mutoti, Benjamin W. Schumann</i>	87
Mind the Gap: Exploring and Bridging Economic Inequity in the U.S. <i>Ashraya Kalavakunta</i>	107
Health and Urban Green Space Disparity in Communities of Color: The Impact of Historic Redlining <i>Breckyn Ryg</i>	116
Muddled Waters: Lead-Contaminated Tap Water and its Racial, Economic, and Health Implications for Chicago's Residents <i>Taylor Thomas</i>	122
NATIONAL POLITICS AND ELECTIONS	136
Running From the District: An Analysis of Electability Politics in America's Left <i>R. Jeremy Golden</i>	137

FROM THE EDITORS

Dear Readers,

It is an honor and a privilege to present to you the 21st edition of The Public Purpose Journal, an academic journal by and for graduate students at American University's School of Public Affairs (SPA). We are honored to continue 21 years of distinguished work regarding public policy and to continue advocating for students as they advance in their professional and personal lives. As a student-run organization, we are grateful to the Graduate Student Council and the SPA Dean's office for their endless support.

This year's journal theme is *The State of the Nation*. The United States is seemingly at a tipping point. Lawmakers and their partners are debating key issues like women's rights, immigration policy, and firearm regulations. Decisions made this past year and decisions yet to be made will impact Americans and the global community for years to come. Today's political climate reflects the myriad of challenges we face; however, this journal and its content present a hopeful future. The world is changing rapidly and while we left 2022 and entered 2023 with numerous reasons to choose despair, there were countless moments of celebration. Our students' research topics range from climate change to mass shootings, to food insecurity, but the most notable piece they offer are their solutions. They create and recommend opportunities for growth in our great nation. What we can only hope, now, is that their guidance push those in power to develop a bright and just society—and hope that these same students go on to become those leaders.

We want to thank our entire print team for their endless dedication to the work; we could not have done it without you. To our faculty reviewers, your support and knowledge does not go unnoticed, thank you for your dedication to the journal and students. Thank you to our dedicated Design Coordinator, Juan Carlos Guerrero, who created a unique and powerful cover design. And lastly, we thank our authors. Thank you for your dedication, passion, and most importantly your commitment to building a better future. Your pieces are unique and moving. We hope that you continue supporting the journal's efforts in the future.

May this journal serve as a reminder of today's state of the nation, not only for those of us in SPA presently, but those who will walk these halls in the future.

Sincerely,

Karen Caspa, Dakota Engel, Madelyn Amos
Editor-in-Chief | Managing Print Editor | Associate Print Editor

OUR STAFF

2022-2023

EDITOR-IN-CHIEF

Karen Caspa

THE EXECUTIVE BOARD

President	Anish Nalla
Managing Online Editor	Michelle Kumar
Managing Print Editor	Dakota Engel
Associate Print Editor	Madelyn Amos
Communications Director	Juan Carlos Guerrero
Finance Director	Rachel Timmons

RESIDENT EDITORS

Emma Craig
Aidan Jacketta
Ashraya Kalavakunta
Erin Kozar
Carsen Lennon
Subiksha Ramakrishnan
Breckyn Ryg
Olivia Triska
David Yao
Nora Zacharski

COLUMNISTS

Amma-Sika Adomako
Christen Blades
Andres Blume
Christopher Fields
Joi Lee
Cam Napier
Trevaughn Smith
Tevin Williams

THE FACULTY BOARD

Bill Davies
Nathan Favero
Daniel Fiorino

Susan Glover
Thomas Kahn
Marquise McGraw
Ernest Ogbozor
Jane Palmer

CHILD AND EDUCATION POLICY

THE EFFECT OF THE 2014 CHILD CARE AND DEVELOPMENT BLOCK GRANT ON PARENTAL PREFERENCE OF REGULATED AND UNREGULATED CHILD CARE PROVIDERS

Daniel Lee

Abstract

This evaluation analyzed the effect of the Child Care and Development Block Grant Act of 2014 on parents' preferences for using regulated or unregulated child care providers. The law reauthorized existing child care legislation and added several new provisions that included mandatory safety and health standards along with an increase of federal funds to the Child Care and Development Fund. These new standards mostly affected regulated child care (provided formally by federal and state-regulated child care facilities) rather than unregulated child care (provided informally by relatives or babysitters). Due to inconclusive results from the difference-in-differences method, a panel data fixed effects method was proposed to compare various states across the country. The fixed effects method provided mixed results and showed how the diversity of states' demographics and child care procedures led to those outcomes. The initial analysis concludes that neither policy is preferred, and further research and analysis of preferences for regulated or unregulated child care is recommended.

Introduction

The Child Care and Development Block Grant (CCDBG) is a law that authorizes the federal funding of the Child Care and Development Fund (CCDF), which is then disbursed to state governments to provide subsidized child care to low-income families. The block grant was first implemented through the Omnibus Budget Reconciliation Act of 1990 (H.R.5835, 1989). The implementation was a response to a national debate in the 1980s on the supply and quality of child care. Many questions revolved around whether the federal government should subsidize child care and set standards for child care. This was also a period when federal welfare reform was being debated, and welfare was directly tied to child care. For example, parents of children that sought employment after being on welfare were entitled to 12 months of federally subsidized child care.

The welfare program at the time was AFDC (Aid to Families with Dependent Children), but a few years later in 1996, PRWORA (The Personal Responsibility and Work Opportunity Reconciliation Act) was passed as an answer to welfare reform, and Bill Clinton's campaign promise "to end welfare as we know it" (Falk, 2021). As a result, welfare was transformed from an entitlement program to a program that awarded benefits to working families and individuals. Child care was also a part of welfare and underwent the same eligibility changes. Federal child care was appropriated through 2002 from PRWORA; funding changed in 2003 through 2010, but only had temporary extensions to the program and remained at the same funding level of \$2.19 billion until 2013 (Greenbook, 2022).

In 2014, the Child Care and Development Block Grant Act was passed, reauthorizing the block grant and implementing many provisions into the legislation. This act authorized appropriations of \$2.4 - \$2.7 billion through 2020 (CBO, 2014). The 2014 legislation created fundamental changes to the 1990 law, and some provisions included establishing health and safety requirements, improving transparency by publicly providing monitoring and inspection reports of child care facilities, and requiring states to conduct criminal background checks for all child care staff members (ACF, 2022a). Legislators at the time sought to expand parents' choices in child care while promoting the safety of children and transparency from state governments.

The 1990 CCDBG originally provided state governments with great flexibility in managing their child care policies. After federal funding is disbursed to the states, each state has its own unique child care assistance program with several different eligibility requirements. Basic child care financial assistance can be in the form of "vouchers, certificates, scholarships, or subsidies" (Childcare.gov, 2022). For example, the Maryland child care financial assistance program is called the "Child Care Scholarship Program", and some eligibility requirements include employment or work program attendance, retaining a certain income level based on family size, receiving Temporary Cash Assistance (TCA), a willingness to have children immunized, and proof that their child is a U.S.

citizen or qualified alien (MD DHS, 2022). In Virginia, parents must follow many of the Maryland guidelines, but they do not have to be receiving cash assistance (Child Care VA, 2022). After 2014, states still retained flexibility in eligibility standards for child care, but the new CCDBG Act mandated states to increase the portion of federal funds used for subsidized child care instead of increasing spending on non-childcare-specific programs such as work activities or tax credits.

There is a wide variety of child care facilities to select and choosing the type of child care depends on the parents' preference. Some types of child care facilities include a child's home, a family home, a group home, or a child care center. These classifications differ slightly based on convenience, but parents may choose a family home over a child care center because they prefer the informal and intimate environment. The most significant differences in child care types are based on either regulated or unregulated options. Regulated child care facilities follow the standards and regulations set by the federal government, more so due to the 2014 CCDBG Act. For example, including the 2014 federal provisions, regulated child care facilities in Maryland must get approval from the Maryland Office of Child Care, fire department, and local agencies. Additionally, they must maintain certification in CPR and first aid, offer a daily program of indoor and outdoor activities, and maintain a file with all required documentation for each enrolled child (MDSE, 2018). Regulated child care facilities and homes are established with high standards to protect children and provide parents with the best care possible.

However, parents still choose to enroll their children in unregulated child care, and these facilities are not subject to federal regulations and do not receive direct federal assistance. These unregulated child care facilities are legally allowed to operate, and parents can sometimes use their vouchers in these establishments. Unregulated child care is best defined as "any nonparental child care arrangement that occurs without government oversight, licensing, standards, and monitoring with respect to the care setting, the care/group size, and the qualifications and qualities of the caregivers" (Breitkreuz & Colen, 2018). Grandparents, relatives, friends, neighbors, or nannies/babysitters can provide this type of informal care. There are many vulnerabilities that a child and parent can face with unregulated child care, but the child care worker is also at risk of potential harm. The most significant dangers that children can face are abuse, neglect, and social deprivation. "Nanny cams", cameras that record the actions of caregivers in homes, are often bought because a "domestic helper is a stranger and therefore cannot be fully trusted" (Aziz, 2018), and one seller of such devices in the U.S. reported that "70% of purchasers fire their nannies, usually due to witnessing benign neglect" (Katz, 2006). Due to the risk of harm to their children, parents usually feel anxiety about using unregulated child care and often feel responsible for both their children and the child care worker. However, unregulated child care workers may face the most risks, including abuse allegations, lack of privacy, isolation, job stress, precarious and low-paid employment, lack of rights, unexpected responsibilities, and poor treatment from parents (Goodall et al., 2020). Even though there are many dangers to unregulated child care, parents use these facilities for legitimate reasons. The primary reason parents are motivated to use informal child care is flexibility because many of these workers can provide their services outside of regular business hours (Goodall et al., 2020).

This evaluation attempts to measure whether the 2014 legislation influenced parents' choice to enroll their children in regulated or unregulated child care facilities. It is hypothesized that due to the new health, safety, and transparency regulations implemented by the 2014 law, there may have been a significant effect on whether parents chose to enroll in a regulated child care home option rather than an unregulated one. There is no difference in federal assistance received in a regulated or unregulated child care option because the amount of financial aid is dependent on eligibility requirements of income and employment status.

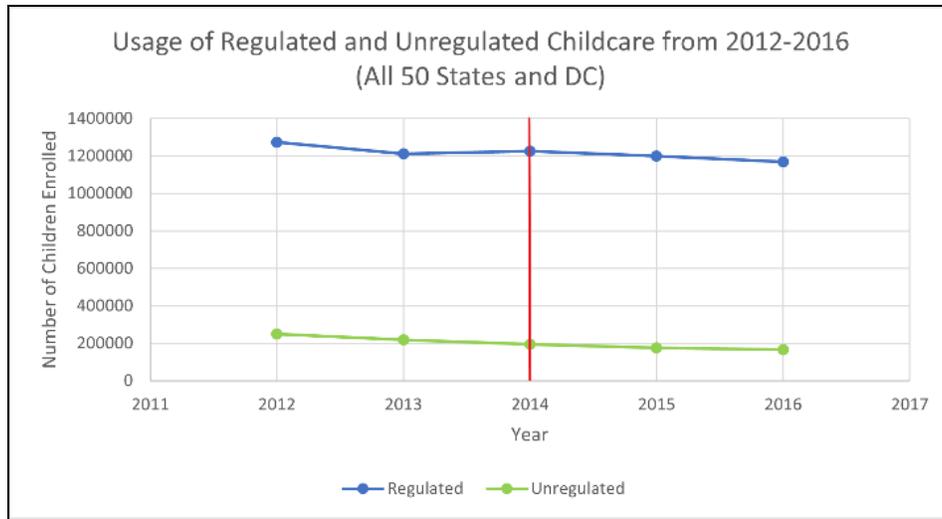
Methods

The data used is provided by the Office of Child Care (OCC) in the Office of the Administration for Children and Families (ACF). ACF collects extensive data each fiscal year, giving preliminary and final estimates of various data including the average number of families and children served, the average percentages of children served by types of care, and the number of child care providers receiving CCDF funds. The data used for this evaluation is the "average monthly percentages of children served in regulated settings vs. settings legally operating without regulation" (ACF, 2022b). Even though most unregulated child care homes do not receive federal assistance, ACF collects data on both regulated and unregulated child care facilities. Also, the "average

monthly adjusted number of children served” was used to calculate the actual number of children served in regulated vs. unregulated child care settings based on the percentages provided by ACF.

At the beginning of the evaluation, a difference-in-differences method was attempted, but the results were inconclusive. For this approach, the “total number of children served” for 2012 and 2016 in all 50 states and the District of Columbia (DC) was divided into two categories: “regulated child care” and “unregulated child care”. The CCDBG Act was implemented in early 2014, thus 2012 and 2016 were chosen for this method because those two years were equally far apart to try to estimate the effects of the CCDBG. The data points were graphed as “usage over time” in Excel (See Figure 1).

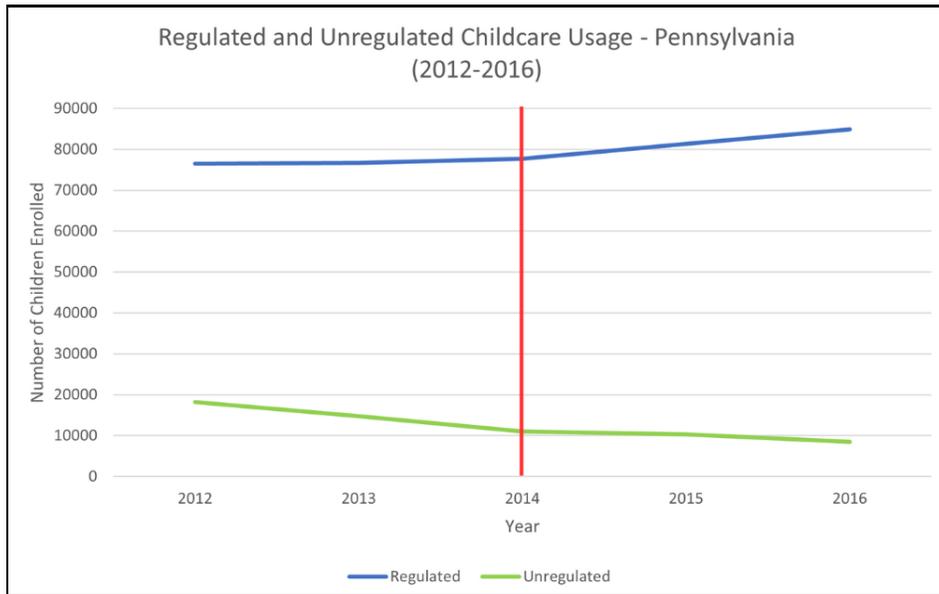
Figure 1



The usage over time graph took the total number of children served from 2012 to 2016 and divided the total into regulated and unregulated child care for each year. Several observations can be inferred from the difference-in-differences and the total usage over time graphs. First, the difference-in-differences graph showed that both regulated and unregulated child care have equally decreasing parallel trends from 2012 to 2016. The usage over time graph also displayed a decreasing trend for regulated and unregulated child care for all 50 states and DC. Regulated child care saw a sharp decrease in 2012-2013, then an increase in 2014, but a noticeable decrease in the following years. The small increase in 2014 could have been in response to the implementation of the CCDBG Act; however, that does not explain the decrease in the years after. The usage over time graph for unregulated child care showed a gradually decreasing trend over time with no sharp hills or valleys to demonstrate an effect of the 2014 CCDBG Act on the prevalence of parents using unregulated child care. The data used for the method did satisfy the parallel trends assumption, where the time trend was the same for all units; however, the results were inconclusive, therefore a panel data fixed effects method was used.

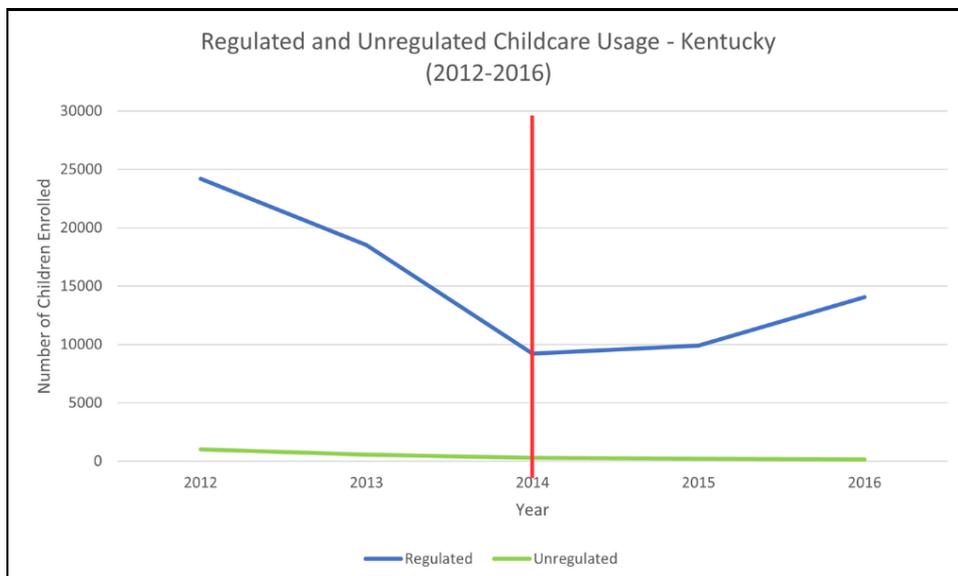
Case studies for several different states were used to demonstrate the panel data fixed effects method. The 2014 CCDBG Act was implemented nationwide and the observations of the effect of the law were observed more than once in each state. The following case studies showed a wide variety of responses by states to the new CCDBG. Similar to the usage over time graph, each year the number of children served was divided into regulated and unregulated child care and plotted from 2012-2016. All 50 states and DC were plotted into graphs, and each state was then categorized by its trendline. One state that demonstrated an increase in regulated child care after the 2014 CCDBG implementation was Pennsylvania (See Figure 2).

Figure 2



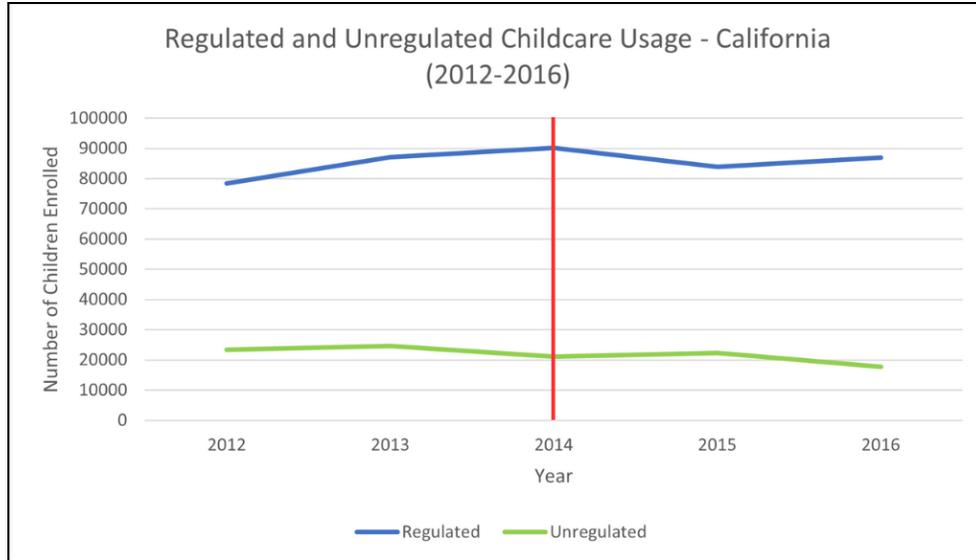
Furthermore, there was a decrease in unregulated child care after 2014 in Pennsylvania, although the data points showed a decreasing trend before that year. New Hampshire and Iowa also displayed increases in regulated child care after 2014 and gradually decreasing trends in unregulated child care. There were also states where the prevalence of regulated child care was sharply decreasing before 2014, but increased after the law was implemented, as seen in Kentucky (See Figure 3). Examples like Kentucky and Pennsylvania showed that there may have been an effect of the new CCDBG on more parents preferring to enroll their children in regulated child care facilities and more parents no longer using unregulated child care options.

Figure 3



However, most states did not follow this trend. For instance, California saw a sharp decrease in regulated child care usage after 2014. (See Figure 4). The use of regulated child care plummeted by almost 6,500 children and during the same period, unregulated child care usage rose slightly by almost 1,200 children. In 2016, regulated child care usage rose back to 2013 levels. Illinois and Florida demonstrated similar trends to California. These cases showed that the 2014 CCDBG had a negative effect on regulated child care because more parents decided to remove their children from regulated child care facilities and unregulated child care usage slightly increased.

Figure 4



There were also states where little to no effect was shown such as Washington and Texas. Washington had a gradually increasing trend in regulated child care usage and continued increasing with a similar magnitude after 2014. Washington’s unregulated child care usage remained stable from 2013-2015 but increased in 2016. Texas exhibited the opposite trend to Washington. Texas-regulated child care usage decreased by a large amount from 2012-2013, stagnated from 2013-2015, and continued decreasing in 2016. These states displayed no effect of the new CCDBG because the graphs showed little to no difference in regulated and unregulated child care usage (See Figures 5 and 6).

(This space left intentionally blank.)

Figure 5

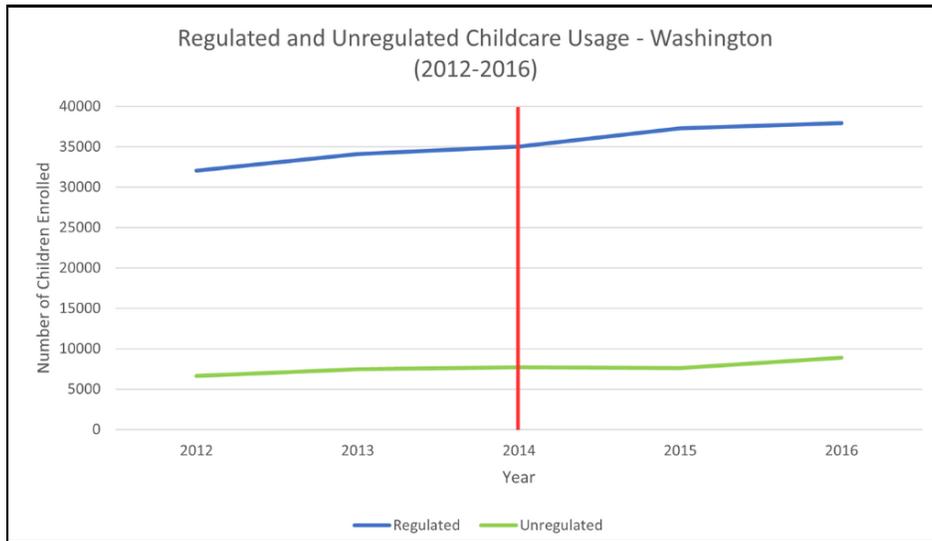
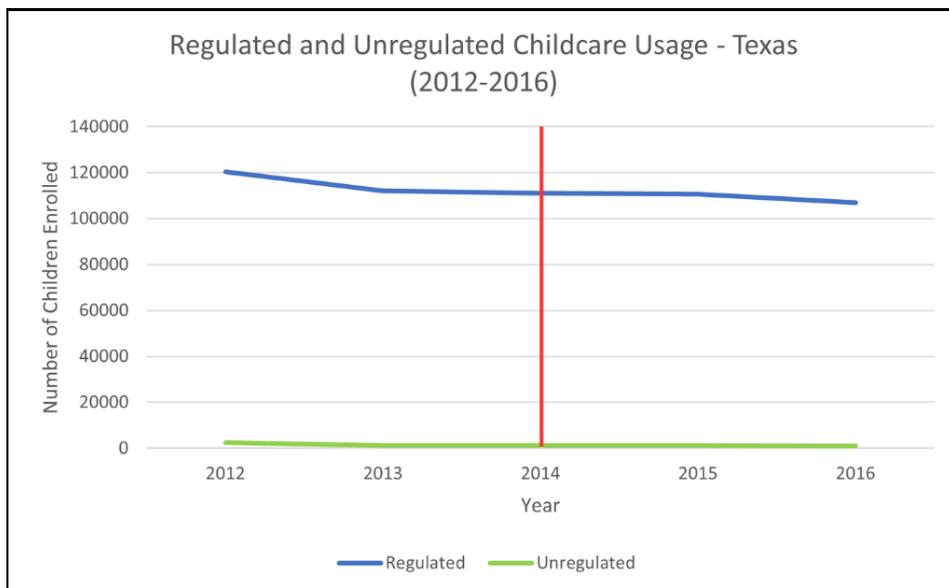


Figure 6



There are two main assumptions for the panel data fixed effects model. The first is “rank condition”, where there must be some variation in treatment over time, so it is not collinear with the fixed effect. This evaluation met this assumption because the treatment was the implementation of the 2014 CCDBG and its provisions. In addition, the results focused on the years between 2012 and 2016, 2012-2013 were the years before the treatment was applied, and 2015-2016 were the years after treatment. The second assumption for panel data fixed effects was that the treatment indicators over time are “exogenous conditional on the fixed effect”, meaning there were no time-varying unobserved variables. In this case, the treatment indicator of the number of children

enrolled in a regulated or unregulated child care facility was not affected by other variables conditional on the fixed effects.

The second assumption may not have been met due to the limitations of panel data with fixed effects. All 50 states and DC showed a wide variety of different trends in regulated and unregulated child care usage due to multiple unobserved variables and confounders. Primarily, the number of children enrolled likely changed throughout the five-year period of this evaluation because of time-varying unobserved factors. Such factors include variable birth rates, parents deciding to move in or out of the state, and reporting errors. This would have played a small role in increasing or decreasing regulated and unregulated child care usage unless there were a significant exodus or influx of people to a particular state. Another factor that could have played a part in the results might be state demographics because various races and cultures might have had different opinions on what type of child care they prefer. Certain cultures may overwhelmingly depend on their extended family to care for their children, and others trust regulated child care facilities. Thus, states with a diverse racial makeup could have presented different trends than states that are more racially homogenous. Finally, the state government's preferences were an unobserved factor that could have played a role in the evaluation. As aforementioned, states have a great extent of flexibility in conducting their child care policies. State eligibility requirements and usage of federal funds vary across the nation, which could have explained some trends. For example, Texas requires parents to work a minimum average of 25 hours per week to receive subsidized child care, while Pennsylvania only requires 20 hours per week (WSNCT, 2022; DHSPA, 2022).

Expected Results and Conclusion

The expected results from this analysis would have illustrated a marked difference in enrollment with regulated and unregulated child care facilities after the implementation of the 2014 CCDBG Act. It was predicted that the imposed regulations and standards would incline parents to use regulated child care facilities because of the potential for reduced instances of abuse and increased accountability. It was also expected that there would be a difference, but the flexibility that unregulated child care homes provide may have reduced the difference between regulated and unregulated child care use.

However, the actual results were mixed, and the 2014 CCDBG Act did not universally change parental preferences. Some states exhibited a change in regulated and unregulated child care usage, but many states either felt a negative effect or no effect at all. It is important to consider the unobserved factors as every state is different. This evaluation sought to bolster the legitimacy of the reauthorization of the CCDBG Act and validate the increased federal appropriations to strengthen training, safety, and standards of regulated child care facilities. Despite the results, preferences for regulated and unregulated child care usage should continue to be evaluated to justify increased federal spending.

References

- ACF. (2022a) *Child Care and Development Block Grant Act (CCDBG) of 2014: Plain Language Summary of Statutory Changes*. The Administration for Children and Families. <https://www.acf.hhs.gov/occ/law-regulation/child-care-and-development-block-grant-act-ccdbg-2014-plain-language-summary>
- ACF. (2022b) *Child Care and Development Fund (CCDF) Statistics*. The Administration for Children and Families. <https://www.acf.hhs.gov/occ/data/child-care-and-development-fund-statistics>
- Aziz, N. N. A. (2018) Perception of Employers' Children Towards Domestic Helpers. *International Journal of Academic Research in Business and Social Sciences*, 8(5), 728-740.
- Breitkruez, R. & Colen K. (2018) Who Cares? Motivations for Unregulated Child Care Use. *Journal of Family Issues*, 39(17), 4066 – 4088.
- Childcare.gov. (2022) *Child Care Financial Assistance Options*. Childcare.gov. <https://childcare.gov/consumer-education/get-help-paying-for-child-care>
- Childcare VA. (2022) *Paying for Child Care*. Virginia Department of Education. <https://doe.virginia.gov/cc/parents/index.html?pageID=4>
- DHSPA. (2022) *Child Care Works Subsidized Child Care Program*. Department of Human Services Pennsylvania. <https://www.dhs.pa.gov/Services/Children/Pages/Child-Care-Works-Program.aspx>

- Falk, G. (2021) *The Temporary Assistance for Needy Families (TANF) Block Grant: A Legislative History*. (Report R44668). Congressional Research Service.
- Greenbook. (2022) *Child Care Legislative History*. The Committee on Ways and Means of the United States House of Representatives. <https://greenbook-waysandmeans.house.gov/book/export/html/291>
- Goodall, Z., Cook, K., & Breitzkreuz, R. (2020) Child, Parent and Worker Vulnerabilities in Unregulated Childcare. *Social Policy & Society*, 20(2), 247-263
- H.R.3734 - 104th Congress. (1995-1996): Personal Responsibility and Work Opportunity Reconciliation Act of 1996. (1996, August 22). <https://www.congress.gov/bill/104th-congress/house-bill/3734>
- H.R.5835 - 101st Congress. (1989-1990): Omnibus Budget Reconciliation Act of 1990. (1990, November 5). <https://www.congress.gov/bill/101st-congress/house-bill/5835>
- Katz, C. (2006) *The State Goes Home: Local Hypervigilance of Children and The Global Retreat from Social Reproduction*, in T. Monahan. *Surveillance and Security: Technological Politics and Power in Everyday Life*. Florence: CRC Press.
- MD DHS. (2022) *Child Care Scholarship*. Maryland Department of Human Services. <https://dhs.maryland.gov/child-care-scholarship-ccs/>
- MDSE. (2018) *Guide to Regulated Child Care*. Maryland State Department of Education. https://earlychildhood.marylandpublicschools.org/system/files/filedepot/2/guide_to_regulated_child_care.pdf
- S.1086 - 113th Congress. (2013-2014): Child Care and Development Block Grant Act of 2014. (2014, November 19). <https://www.congress.gov/bill/113th-congress/senate-bill/1086>
- S.3209 - 101st Congress. (1989-1990): Omnibus Budget Reconciliation Act of 1990. (1990, November 8). <https://www.congress.gov/bill/101st-congress/senate-bill/3209>
- WSNCT. (2022). *Guidelines to Apply for Child Care Services*. Workforce Solutions North Central Texas. <https://www.dfwjobs.com/child-care/parents/guidelines-apply-child-care-services>

SOLUTIONS TO SCHOOL MASS SHOOTINGS: AN ANALYSIS

Julia Rosenberg

Abstract

The United States experiences more school shootings than any other industrial nation. School shootings harm the victims, their families, and the surrounding community physically, financially, and mentally. Mass shooters become radicalized through the gun industry's propaganda, and government failures stall the passage of legislation that addresses the root causes of school mass shootings in schools. This paper evaluates proposed policy solutions based on specific criteria that maximize the number of lives saved in school shootings.

Introduction

America's high gun violence rates stem from market and government failures. In 2022, for the first time in 26 years, Congress enacted a comprehensive federal gun safety law, the Bipartisan Safer Communities Act (Everytown, 2022). Although polls indicate the majority of Americans desire stronger gun laws, the National Rifle Association (NRA) essentially buys Republican candidates' votes against gun safety bills through hundreds of millions of dollars in donations to their campaigns (Brady). The NRA has established the narrative that gun rights prevent lawlessness and that proposed gun safety bills are authoritarian and a violation of American citizens' civil liberties (Bhatia, 2019). The NRA, along with the gun industry, peddles false information and stories to increase sales and membership. Previous laws handicap the government's ability to respond to the gun industry's marketing tactics. The Protection of Lawful Commerce in Arms Act (PLCAA), a federal law, shields firearm manufacturers and dealers from lawsuits intended to hold them responsible for their role in violent acts. (Violence Policy Center, 2022). The inability of the federal government to regulate guns has resulted in zero federal health and safety standards for firearms (Consumer Federation of America). In comparison, teddy bears have four (Consumer Federation of America).

Despite general support for stricter gun laws, NRA donations, industry marketing strategies, and the subsection of Americans that believe gun reform will lead to their oppression prevents Republicans from taking action to avert school shootings. The lack of congressional action has contributed to the fact that gun violence is the current leading cause of death among U.S. children (Lee et al., 2022). This analysis begins by exploring the prevalence of school shootings in the United States. Next, the paper discusses the financial, physical, and emotional impact of school shootings. The report then examines the marketing practices and government failures that exacerbate the rate of mass shootings in America. Finally, the paper proposes, recommends, and details the tradeoffs of alternative solutions based upon four criteria.

The Prevalence of Mass Shootings at Schools in America

America endures an average of one school shooting a week, a rate 57 times higher than other major industrialized nations (Gabrow & Rose, 2018). 50,000 students a year experience a school shooting in their school (Center for Violence Prevention, 2021). In 2019, there were at least 130 incidents of gunfire on school campuses that left 33 dead and 78 injured (Everytown, 2022). As the COVID-19 pandemic school lockdowns ended, gun violence in schools returned to pre-COVID-19 levels (Sandy Hook Promise, 2022). Pervasive gun violence in schools is not a new problem. Since 1970, the U.S. has had 2,032 school shootings (Sandy Hook Promise, 2022, p. 1). During this time period, while the District of Columbia, Alaska, and Louisiana sustained the highest rates of school shootings per capita in the nation, California, Texas, and Florida suffered the most overall school shootings (Reuters, 2019). Research suggests that while urban schools with higher poverty levels face more school

shootings, suburban or rural, wealthy, and low-minority schools experience the most fatal school shootings (Government Accountability Office, 2022).

The Effects of School Mass Shootings: Victims, Families, and the Community

Emotional and Physical Impact

School mass shootings inflict widespread physical and emotional trauma for the victims, their families, and the community. Gun violence alters the trajectory of a survivor's life. A study on the emotional impact of school shootings determined students' resentment increases after a shooting, their perception of safety decreases, and they face higher rates of post-traumatic stress disorder (PTSD) (Lowe & Galea, 2017). Likewise, students' academic achievements plummet and the trauma stunts their social and emotional growth (Center for Violence Prevention, 2021). In areas where school shootings occurred, students' antidepressants use skyrocketed by at least 20 percent (Rossin-Slater et. al, 2022). Additionally, family members of survivors also experience high rates of PTSD (Brady).

Financial Impact

The financial consequences of school mass shootings follow victims throughout their life. Not only are school shooting victims less likely to graduate high school, attend college, or secure employment, but when employed, their jobs have lower earning potential. A study found that students exposed to school shootings earn \$115,550 less over their lifetime (Center for Violence Prevention, 2021).

School mass shootings also devastate the impacted community financially. Research indicates that even one shooting in a neighborhood causes a drop in home values, lower homeownership rates, increased retail departure, and a reduction in job opportunities (Brady). In an average year, America devotes \$557 billion to addressing gun violence and taxpayers pay \$7.79 million for victims' medical costs (Everytown, 2022). In response to gun violence, communities typically invest in law enforcement responses rather than public health approaches to the problem (Valeeva et al., 2022). While jurisdictions overwhelmingly used the American Rescue Plan Act (ARPA) funds to bolster their jails, police, and court budgets, less than one percent of the ARPA funds subsidized community violence intervention programs, a public health approach to decreasing gun violence (Valeeva et al., 2022). Research emphasizes investment in the criminal justice system, especially in predominantly Black communities, does not reduce gun homicide rates. Instead, it entraps people in the criminal justice system, producing further financial burdens (Rosalsky, 2021, 1). Similarly, political pressure compels school districts to sponsor measures to "harden," the act of physically fortifying schools, instead of addressing students' access to firearms (Balingit, 2022).

What Leads to School Mass Shootings?

This report takes a supply side approach, a strategy for ending gun violence that centers on addressing the role of gun dealers and the industry in the perpetration of gun violence, rather than concentrating on individual perpetrators (Brady). A supply side approach to school shootings explores how the gun industry's marketing strategies radicalize shooters, galvanizing people to purchase firearms and deploy them against others (Giffords et al., 2022). Solutions addressing the industry's advertisements confront the problem before people become fanatical, hindering the radicalization process.

The Firearm Industry and NRA Marketing Practices: Protection of Lawful Commerce in Arms Act

The Protection of Lawful Commerce in Arms Act (PLCAA) ensures that, regardless of the legality of the manufacturer's or dealer's actions in arming and encouraging the perpetrator, the manufacturer or dealer receives broad immunity against duty of care to victims' lawsuits, as well as immunity from lawsuits in which cities seek to recover the costs of the response to a gun violence incident (Miao Jiang, 2007). Lawsuits act as a means of deterrence for industries because the expensive nature of the lawsuit compels them to adopt safer practices (Miao Jiang, 2007). Unlike other industries constrained by safety regulations, gun manufacturers, who are safeguarded from massive liability, focus solely on maximizing profit (Kohrman, 2022). Gun manufacturers intentionally facilitate violence because they rely on a "self-fulfilling prophecy" business model; their earnings trend upwards during times of community turmoil and high rates of gun violence (Kohrman, 2022). As community fear

increases, people arm themselves against the potential threat of other people with firearms. Gun sales in particular rise after school shootings (Brady). The firearm industry requires high rates of gun violence to sustain profits. Therefore, the gun industry both arms and radicalizes people to commit these acts to produce a constant stream of gun violence. PLCAA allows the externality of school gun violence to turn into profit for the gun industry.

Marketing Practices and Conspicuous Consumption

Figure 1: AR-15-Style Rifle Revenue and Recent Mass Murders		
	<i>AR-15-Style Rifle Revenue, 2012-2021</i>	<i>Recent Mass Murders with the Company's AR-15-Style Rifles</i>
SMITH & WESSON	At Least \$695 Million	Highland Park (7 dead) Parkland (17 dead) San Bernadino (14 dead)
RUGER	\$514 Million	Sutherland Springs (25 dead) Boulder (10 dead)
DANIEL DEFENSE	\$528 Million	Uvalde (21 dead) Las Vegas (60 dead)*
SIG SAUER	REFUSED	Orlando (49 dead) Las Vegas (60 dead)*
BUSHMASTER	\$2.9 Million (2021 Only)	Buffalo (10 dead) Sandy Hook (27 dead)

(Source: Maloney, 2022)

Figure 2: Gun Advertisement



(Source: Maloney 2022)

The NRA and gun manufacturers' marketing tactics target young consumers and equate gun ownership with desired masculine identity traits to earn more profit. The industry's marketing campaigns depict gun owners as powerful warrior-like figures and protectors. The gun manufacturers work together as a thin monopoly and utilize similar marketing techniques. The goal of the industry is to promote the conspicuous consumption of firearms. To raise the status of firearms, the industry manipulates masculine honor culture because American society values protective men who engage in violence (Levant, 2022). The industry utilizes slogans like “for every mission possible” to appeal to customers’ interest in law enforcement or the military and to reinforce the gun owner’s belief they are carrying out a “mission” when they deploy their firearm (Levant, 2022, p. 157). In response to the mischaracterizations that law enforcement carries certain firearms, gun advocacy groups filed a complaint with the Federal Trade Commission (FTC) highlighting that a gun manufacturer, without consent from various law enforcement agencies, emblazoned their insignia on firearm advertisements that incorrectly stated the gun was “selected by professionals” (Levant, 2022, p. 155). Gun safety advocates whistle-blew on the false advertisements because they understand the advertisements radicalize men to act as unsanctioned law

enforcement or military professionals. For example, the Parkland shooter was enrolled in Junior Reserve Officer Training Corps and the Poway, California shooter described his shooting as a means of defending his country in an antisemitic, pro-military manifesto (Maloney, 2022). Through this marketing strategy, people begin to believe they are serving as a community protector, an esteemed role. Manufacturers promote the idea that guns create military service personnel, employing slogans like “conceived for the demands of the Special Operations community” (Maloney, 2022). Establishing a false equivalency and inaccurately endorsing products produces market asymmetry; the manufacturer dupes the buyer. Firearm companies sell a false dream and utilize fake endorsements to defraud customers.

Similarly, the firearm industry’s practices prey upon customers’ adoption of toxic masculinity. Toxic masculinity involves men’s “proof” of manliness through “masculine” activities, such as shooting guns, and further celebrates aggression (Maloney, 2022). Gun manufacturers directly tie a customer’s manhood to firearm ownership (Maloney, 2022). On two different AR-15 ads, the captions read “consider your man card reissued” and “your status at the top of the testosterone food chain is now irrevocable” (13). These types of ads excite some men to purchase guns as proof of their masculinity. A study by the U.S. Secret Service and U.S. Department of Education exploring school shootings found boys acted as the perpetrators in every attack in their data set (Borum et al., 2010). The societal glorification of male aggression ensures men view violence as a mechanism to solidify “manliness.” In the study, boys cited revenge as their motive or grievance against people at the school (Borum et al., 2010). Research underscores that teen boys struggling with masculinity are more likely to behave violently (Miller, 2020). To increase profits, gun manufacturers exploit this narrative and trigger people to enact mass violence. The weapons provide radicalized people a method to inflict externalities onto others.

The industry recently began targeting a new demographic: toddlers (Maloney, 2022). After the Uvalde shooting, Daniel Defense, a gun manufacturer, posted an advertisement on social media with the caption “train up a child in the way he should go” (Maloney, 2022). These marketing campaigns directed at children do not disclose the dangerous nature of a firearm. In fact, the industry presents the firearm as a toy. However, children do not know how to handle guns; eight children a day in the United States unintentionally injure or kill with firearms (Brady). The industry preys upon parents’ fear of school shootings and their desire to train their children in self-defense to sell firearms. The JR-15, an AR-15 designed for kids, ranks highly on the “best of” show lists (Maloney, 2022). As another avenue of profit, the gun industry sells security storage devices, vertically integrating the market. The industry profits from the sale of security devices and victimized children. Targeting children not only broadens the industry’s potential customers market, but also indoctrinates children with the industry's beliefs.

The NRA pushes propaganda that conflates protecting the Second Amendment with protecting all other civil liberties (Bhatia, 2019). The NRA contends “the right to own a firearm is the freedom that protects all other freedoms” (Bhatia, 2019, p. 4). The narrative paints gun owners as the pro-freedom group and vilifies the government (Bhatia, 2019). NRA spokespeople invert the truth and deem the mainstream media as the source of disinformation in order to invent a moral panic around guns, making it harder for Democrats to pass effective legislation (Bhatia, 2019). This story erodes gun owners’ trust in the government and encourages them to serve as the “protector” of civil liberties in America (Bhatia, 2019). The NRA attacks legislators attempting to pass gun safety reform, classifying them as “traitors” and “enemies of the American people” (Bhatia, 2019, p. 25). Politicians fear the traitor label and thus do not vote for gun safety legislation, allowing school shootings to continue.

Government Inaction and the Gun Lobby Leads to School Mass Shootings **Failures of Direct Democracy**

Without effective laws, school shootings are the norm in America. Despite a majority of Americans supporting gun safety legislation, the configuration of the Electoral College and the Senate grants smaller states and Republicans disproportionate influence on federal law (Brownstein, 2022). In a democracy, the government fails when the minority party possesses disproportionate power to control the legislative agenda because the law does not reflect the majority of citizen’s desires. For example, in the 117th Congress, while 63 percent of Americans supported an assault weapon ban, the assault weapons ban bill stalled in the Senate because ten Republican senators remained unwilling to vote for the bill. Further, all 50 Democratic senators refused to abolish

the filibuster, a Senate rule that requires 60 votes to invoke cloture (Elvin, 2022). Currently, the filibuster prevents bill passage in the chamber because the Democrats occupy less than the 60 Senate seat requirements for cloture, and Republicans refuse to assist Democrats in advancing legislation (Elvin, 2022). These roadblocks immobilize gun safety legislation. The passage of federal gun safety legislation occurs so rarely, gun safety advocacy groups hailed the passage of Bipartisan Safer Communities Act law as “monumental” (Everytown).

Failures of Representative Democracy

When representatives vote against their constituent’s interests a market failure is produced popular, lifesaving legislation fails to become law. A 2021 Pew Research poll found that a majority of Republican gun owners support background checks and oppose permitless carry (Brownstein, 2022). Although 81 percent of Americans support gun background checks, when the universal background check bill passed in the House of Representatives in 2021, only eight Republicans voted for it and the bill died in the Senate (Brownstein, 2022). Typically, Republican representatives vote against the majority of their constituents’ interests, rather than advancing the NRA and radical constituents’ desires (Liasson & Aguilar, 2022). Prior to the 2022 midterm elections, Republicans remain scared to anger the voters who support former president Donald Trump and anti-gun safety reforms because candidates who voted counter to the ideals of the former president often lose their seats (West, 2022). An August 2022 Pew Research poll shows that while strong Trump-affiliated voters comprise a small subsection of Republican voters, they are the most politically involved part of the Republican voting base (Pew Research Center, 2022). While elected officials remain at fault for governmental failures, voters also have a responsibility to hold their elected officials accountable. Voters consistently reelect candidates who vote contrary to their ideals, yielding suboptimal policy outcomes.

Figure 3: Gun Control v. Gun Rights Lobbying Spending

Gun Control v. gun rights lobbying power			
	Campaign Donations 1989–2016	Outside Spending 2016	% donated to Republicans
Gun control groups	\$4.2 million 	\$1.7 million 	89%
NRA	\$22.9 million 	\$54.3 million 	4%

(Source: Weiss, 2018)

When lawmakers value their seats and donations over the public’s welfare, school shootings proliferate. Congress previously banned assault weapons, or “semi-automatic firearms designed for military use and quick, and efficient killing,” from 1994 to 2004 (Brady). Assault weapons jeopardize the public’s safety. When perpetrators employ assault weapons in shootings, victims sustain more gunshot wounds, six times as many people are shot, and twice as many people are killed (Everytown). Perpetrators wielded assault weapons in the deadliest school mass shootings (Sisak, 2022). However, these deaths were preventable through legislation. Studies concluded a federal assault weapons ban would have prevented 70 percent of mass shooting deaths during periods when the ban was not in effect (Everytown, 2022). Despite lawmakers’ knowledge of the lifesaving power of an assault weapons ban, only five Republican congressmen voted for the Assault Weapons Ban of 2022 bill in the House of Representatives (Snodgrass & Davis, 2022). Special interest groups exchange political donations for guarantees that elected officials will work to protect the industry’s interests. To further their political influence, in 2021, the NRA spent a record \$15.8 million on predominantly Republican campaign donations (Kulish et al., 2022). Lobbyists’ outsized influence over constituents leads to a market failure because Representatives’ policy interests no longer center on furthering societal welfare.

Ways to Address School Shootings

How Solutions Were Developed and Analyzed

Existing policies and programs were examined to select alternative solutions. The solutions address firearm access, information asymmetry, and regulations that promote accountability in the firearm industry. The solutions will be assessed at a federal level. The solutions are intended to guide educational leaders in their response to school mass shootings.

Solution Criteria

Throughout the analysis, maximizing the number of lives saved during a mass shooting serves as a criterion. Gun deaths represent a public health epidemic for children in school (Lee et al., 2022). While it is difficult to measure the number of lives lost in mass shootings that never materialize, this paper relies on previous studies to understand a solution’s potential to save lives.

The analysis will assess political feasibility because if Congress cannot adopt the legislation, the solution becomes futile. While the public’s perception of a policy and the passage of similar legislation on the state level influences a bill’s political feasibility, the analysis will mostly gauge political feasibility based on representatives’ voting records and the influence of lobbying dollars.

The report considers solutions that disrupt the gun industry’s business model and further a reality where gun violence generates an equal or less firearm purchasing rate. Solutions that create an environment where mass shootings harm the industry’s profits will incentivize the industry to adopt business practices that do not radicalize people.

Each criterion will be weighted equally. However, in the case where alternative solutions score equally because the loss of life serves as the worst consequence of school mass shootings, maximizing the lives saved serves as the most important criteria.

Table 1: Policy Alternatives Based on Criteria

Policy Alternatives	Criteria 1: Maximizing Lives Saved	Criteria 2: Politically Feasibility	Criteria 3: Disrupting the gun industry’s business model	Total
Assault Weapons Ban	High- Most school shooters that carry out mass shootings use these weapons	Moderate to Low- While some states have passed this law and the House of Representatives in the 117th Congress passed this legislation, gun owners fear the government taking their weapons	High- Less people dying lowers the violence levels, potentially lowering community fear and gun sales	7.5
*Raising the Minimum Age to buy assault weapons	*High- Most school shooters are under 21 years old and use assault weapons	*Low – There is not as much political attention on this policy compared to the full ban, but raising the age of purchase could be a pathway to passing the full ban	*High- Raising the age of purchase will impact the industry’s consumer base and who they market to	7

Ad Campaign	Low- Shooters will probably not be dissuaded by an ad	High- Similar advertisement campaigns exist and data has shown them to be effective	Moderate- Gun owners are more aware of the harm firearms can cause and safety measures, which can help them make different decisions around gun safety to reduce accidental deaths.	6
Repealing PLCAA (Gun industry Immunity)	High/Moderate- If the industry can be sued, they will be more thoughtful about who they sell to	Low- Some states have passed similar legislation, but at the federal level the bill has received little support from both the Democrats and Republicans	High- The industry’s business model would be forced to change to mitigate the risks of people using their products to kill others because they would face legal liability	6.5
Status Quo	Low- School mass shooters rely on this weapon during mass shootings	Low- The current business model encourages more gun deaths	Low- There is no accountability because PLCAA shields the gun industry	0

Proposed Solutions

Assault Weapons Ban

The assault weapons ban would outlaw the sale of new assault weapons while permitting gun owners to retain assault weapons purchased before the bill’s effective date.

Maximizing the Number of Lives Saved

The military designed assault weapons after M14s with the goal of manufacturing a weapon to kill enemies as quickly as possible (Collins, 2021). When perpetrators use assault weapons, they shoot six times as many people because, unlike other firearms, the shooter reloads via a trigger pull (Brady). The assault weapons ban from 1994 to 2004 effectively reduced mass shootings by 37 percent (Brady). After Congress allowed the law to sunset, mass shootings increased by 183 percent, with a 239 percent fatality increase, demonstrating the policy’s ability to save lives (Brady). Moreover, bullets shot from assault weapons liquify bodies, lowering a person's chance of survival (Hunter, 2022). Overall, outlawing assault weapons would force perpetrators to rely on less efficient weapons.

On the other hand, banning assault weapons may exacerbate radicals who fear government overreach, ultimately leading to increased feelings of panic and distrust in the government. This could unintentionally provoke more gun violence, as gun violence spikes during times of civil unrest (Coleman et al., 2022).

Political Feasibility

While eight states and the District of Columbia maintain an assault weapons ban, the political feasibility of passing a national assault weapons ban remains low. A study of gun owners found 34.1 percent support an assault weapons ban (Siegel et al., 2022). Because Republicans prioritize garnering favor with gun owners and the NRA, they vote against gun safety policy. In the 117th Congress, the Assault Weapons Ban bill passed the House of Representatives with 215 Democratic votes and two Republican votes (U.S. House of Representatives Clerk). It seems unlikely ten Senate Republicans, in a more politically polarized chamber, will help Democrats pass this policy (Siegel et al., 2022). Also, the threat of a constitutional challenge under *New York State Rifle and Pistol Association v. Bruen* may dissuade Representatives from supporting the legislation. However, political feasibility shifts after mass shootings.

Disrupting the Gun Industry's Business Model

Studies “show that approximately one-third of public mass shooting events include an assault weapon” (Hunter, 2022, p. 3). If fewer mass shootings occur, people will feel less inclined to arm themselves with firearms equal to the perpetrator. Since “strong gun laws reduce homicide deaths,” the assault weapons ban will lower the number of mass shootings and society’s sense of fear (Hunter, p. 11). This negates the industry’s ability to prey on peoples’ anxieties to drive sales.

On the other hand, the ban may force the industry to adopt more harmful practices to maintain its sales numbers. Because the proposed legislation grandfathers in the 400 million assault weapons currently in circulation in the U.S., it does not fully remove the threat of assault weapons from society (Congressional Digest, 2022). People can commit mass shootings using existing assault weapons.

Assessment of Solution

This solution scored a 7.5 because while it separates the mass shooter from their gun of choice and disrupts the gun industry’s business model, political feasibility is low. Due to its high score in two categories, educational leaders should consider this solution their top policy priority. The government already possesses a previous framework on how to implement and enforce the bill from the 1994 law. While this legislation may not lead to mass shootings’ immediately stopping because of the current circulation of assault weapons, data shows it will decrease the number of shootings over time. However, leadership must examine the threat of this bill and its potential provocation of radical ideologies that inspire violence.

Ad Campaign

Educational leadership, alongside the Ad Council, will construct and display advertisements that publicize safe gun storage practices and warns people of the signs of someone contemplating a mass shooting.

Maximizing the Number of Lives Saved

Because an advertisement campaign does not disarm perpetrators, it scores low in its ability to save lives. The advertisement campaign prevents mass shootings by empowering a perpetrator’s loved ones to recognize the warning signs before a mass shooting. It further reminds them to secure their weapons safely. The advertisement campaign addresses information asymmetry, as most people cannot name the signs or behaviors that preempt mass shootings (Office of Juvenile Justice and Delinquency Prevention, 1999). While the solution does not stop a potential perpetrator from owning a firearm, a bystander who knows the warning signs can alert others and prevent a shooting. Likewise, because “the large proportion of attackers acquired their guns from home,” if parents safely stored their firearms, a shooter may be disarmed and unable to carry out an attack (Office of Juvenile Justice and Delinquency Prevention, 1999, p. 36).

Previous campaigns effectively altered gun owners’ behaviors, leading them to adopt safer practices. For example, “Brady’s End Family Fire Campaign with the Ad Council resulted in 50 percent of people who recalled

viewing the campaign messaging seeking further information about safe gun storage” (Shorty Awards, 2019). Studies underscore safe gun storage education is more effective at reducing minors' access to a gun than standard safety training (Office of Juvenile Justice and Delinquency Prevention, 1999, p. 169).

Political Feasibility

A national advertising campaign is politically feasible because advertisements do not require Congressional approval and other gun safety groups are currently conducting similar advertisement campaigns. The high political viability makes this solution the most practical solution. Avoiding the bureaucratic process will allow educational leaders to implement the campaign quickly and allow analysts to study the results swiftly. The largest feasibility issues stem from financial costs and the limited advertisement space provided by the Ad Council. Further, the advertisement campaign may experience criticism from conservative voices who oppose public safety campaigns.

Disrupting the Gun Industry's Business Model

This campaign moderately disrupts the gun industry's business model. If American society understands the danger of guns, they may stop purchasing firearms. They also may buy safe gun storage units, sold by the gun manufacturers. Studies on safe gun storage do not discuss how gun storage education affects gun purchasing (Office of Juvenile Justice and Delinquency Prevention, 1999). Overall, the advertisement campaign will serve as a counter-narrative to the gun industry's dangerous propaganda and will encourage the public to consider gun safety practices. The advertisement campaign empowers people through education. This, therefore, lowers feelings of trepidation of a potential mass shooting because people can act when they encounter a person exhibiting the warning signs. The decrease in community fear may disrupt the cyclical pattern of people who purchase weapons for self-defense. This solution disrupts the self-fulfilling prophecy business model.

However, this campaign does not repeal PLCAA or stop the industry from championing harmful narratives. The gun industry is well funded—in 2020, it was “responsible for as much as \$70.52 billion in total economic activity”—and people will likely encounter the industry's advertisements before the PTA's. (NSSF, 2021). Thus, people will continue to believe the advertisements designed to radicalize viewers. Moreover, despite the Sandy Hook families' historic settlement from the Remington Arm's advertisements case, the courts have repeatedly upheld the constitutionality of marketing weapons to children (Albers, 2022). This advertisement campaign does not challenge this systematic pattern. Similarly, because of the ad campaign's narrow focus, it cannot combat all the gun industry's hyperbolic stories.

Assessment of Solution

This solution is the most practical solution. However, it is the least effective at saving lives. Educational leaders should pursue this solution in tandem with a policy solution. The short-term win of a successful advertising campaign can legitimize and shift societal beliefs to pave the way for larger legislative solutions. This alternative will demonstrate to apprehensive gun owners that gun safety groups' solutions not only make the community safer but also respect individuals' Second Amendment rights. However, advertising messages that acknowledge the value of social bonds between gun owners and respect for gun owners to own weapons have been proven to have the greatest impact on gun owners' behaviors (Boine et al., 2022).

Repeal PLCAA

PLCAA prevents people from suing the gun industry, even in the cases of negligent and lawful misuse of a firearm (Coleman et al., 2021). By repealing PLCAA, plaintiffs could file lawsuits against the gun industry.

Maximizing the Number of Lives Saved

Repealing PLCAA scores moderate to high for life-saving capability because it does not directly address firearm access and availability. Repealing PLCAA would allow for lawsuits and force the industry to adopt safer practices to protect its bottom line. If each mass shooting led to a \$73 million payout, like the Sandy Hook settlement, the industry would no longer sell weapons designed to efficiently kill because it would go bankrupt (Albers, 2022). The practice worked in other industries—civil litigation against automotive, tobacco, and

pharmaceutical industries incentivized the various industries to “shift in advertising practices” and adopt safer products (Coleman et al., 2021). Automotive crashes are no longer the top killer of children because of these improvements. Now, guns are (Amin & McGough).

On the other hand, repealing PLCAA does not increase the chance of a person’s survival during a school shooting. Repealing PLCAA only empowers survivors after a shooting occurs. Policymakers must be aware of other legislation that protects the industry from liability, as well.

Political Feasibility

Repealing PLCAA has low political feasibility. While in the last two years, four states repealed their PLCAA laws, 33 states still have PLCAA laws that prevent local governments from suing the gun industry (Giffords, 2022). Likewise, in the 117th Congress, only 84 Democrats in the House of Representatives co-sponsored The Equal Justice for Victims, a bill repealing PLCAA. This bill received less attention than both the assault weapons ban bill and the bill to raise the minimum age to purchase an assault weapon. The law even divides Democrats. In the 2015 primary, Senator Bernie Sanders said he did not support overturning PLCAA (Stern, 2015).

Moreover, because the gun industry outspends the PTA on lobbying \$8,442,988 to \$182,671, politicians will advocate for policies that benefit the gun rights groups (Open Secrets). Similarly, the PTA’s lobbying dollars also further education reforms, unlike the gun rights lobby which solely uses its money to pressure candidates to support gun rights bills (Open Secrets). Furthermore, politicians recognize that the industry pays over \$7.86 billion in taxes, \$4.59 billion of which are federal taxes (NSSF, 2022). Politicians rely on high levels of tax revenue to fund government projects (NSSF, 2022).

Disrupting the Gun Industry’s Business Model

The gun industry would be forced to reinvent their “manufacturing, selling, marketing, and importing firearms” practices (Giffords, 2022). California’s PLCAA law mandates “firearm industry members” take “reasonable precautions to ensure they do not sell” to a distributor “who fails to comply with the firearm industry standard of conduct” (Giffords, 2022). The law also prohibits “firearm industry members from manufacturing” or “selling” firearms “that are abnormally dangerous and likely to cause an unreasonable risk of harm to public health and safety” (Giffords, 2022). California’s PLCAA law sets forth that the gun industry must identify and shun non-compliant dealers. The law forces everyone in the industry to redesign their business practices.

However, if the industry falters from the repeal of PLCAA, 375,819 people would lose their jobs (NSSF). Additionally, the failure would harm people in “banking, retail, accounting, metalworking, and printing” (NSSF). The gun industry provides jobs for people across the country.

Assessment of Solution

If not for its low political feasibility, this policy would have been marked as this analysis’s top solution. This solution incentivizes the industry to adopt the other proposed solutions. Civil liability suits changed other industries—they compelled the car industry to make safety a top priority. Repealing PLCAA nullifies previous case law, making it more complicated than other solutions. If educational leadership decides repealing PLCAA is the top prospective policy, those same policymakers should complement the policy endorsement with a law that addresses firearm accessibility.

Raise the Minimum Age to Buy Assault Weapons to 21 Years Old

The legislation would raise the age a person could purchase an assault weapon from 18 years old to 21 years old.

Maximizing the Number of Lives Saved

Younger mass shooters are more likely to attack schools and to use assault weapons than mass shooters over 25 years old (Lankford & Hoover, 2019). This policy saves lives because it disarms the people most likely to utilize assault weapons in mass shootings in schools. Since 2018, six of the nine deadliest shootings were perpetrated by people under 21 years old (Brady). The last decade witnessed a change in the historical trend, with

younger mass shooters (Brady). After the assault weapons ban ended in 2004, the rate of people killed by guns at school rose by 700 percent (Vigerman & Turner, 2022). The legalization of assault weapons led to more gun fatalities at school.

People under 25 are more violent because their prefrontal cortex, the part of the brain responsible for impulse control, judgment, and long-range planning, is not yet fully formed (Tulio & Barker, 2013) Thus, people under 25 engage in more risky behavior, are more susceptible to peer pressure, and cannot conceptualize the long-term consequences of their actions. The culmination of these factors stemming from reduced brain development produces an increased risk to a person under 25 years old causing firearm injury or death (Tulio & Baker, 2013).

Political Feasibility

Seven states have raised the age to purchase an assault weapon to 21 years old and 23 states currently possess laws that restrict long gun ownership to people over 21 years old, revealing the popularity of age limits (Giffords). A June 2022 poll of gun owners found 93 percent of Democrats, 72 percent of Independents, and 64 percent of Republicans support raising the minimum age to buy an assault weapon to 21 years old (Montanaro & Westervelt, 2022).

However, in the current Senate, the probability of the policy's passage remains low. Likewise, during the passage of the Bipartisan Safer Communities Act, Republican Senators opted to expand background checks for people under 21 years old, instead of raising the minimum age of assault weapons to 21 years old (Raju et al., 2022). Republicans chose to expand backgrounds because it complements the narrative that gun violence stems from a mental health crisis problem (Raju et al., 2022). The legislation to raise the age passed the House of Representatives in the 117th Congress, but the Senate steered away from voting on the legislation. Without this law, younger shooters will continue to commit mass violence at schools.

Disrupting the Gun Industry's Business Model

Analysts predict raising the assault weapons purchase age will mirror the results of raising the age to purchase alcohol, when binge drinking decreased, overall consumption fell, and people began drinking at an older age (Keyes, 2022). In response to the elevated drinking age, beer companies started producing non-alcoholic beer. Proponents hope the ban forces the industry to change its predatory advertising practices and adopt safer practices that allow under-21-year-olds to feel accepted in society.

Raising the age of purchase weakens the gun industry's ability to reach youth. The gun industry relies on engaging youth to build its future consumer base. Youth appear to be the most susceptible to their propaganda (Mcintire, 2013). Because the gun industry relies on indoctrination to expand their profit margin the gun industry, it may further its radical rhetoric and incite more violence. Likewise, the gun industry could commence the manufacture of a similar weapon that the government does not regulate currently.

Assessment of Solution

This neuroscience-backed solution targets the population most likely to commit mass school shootings. While illegal, people under 21 can circumvent the law by asking others to purchase the firearm on their behalf. The policy does not require gun dealers to learn a new system because they check identification during transactions. Despite this policy's life-saving potential, Republicans have previously demonstrated they favor other gun safety policies over this legislation. However, this solution may serve as an incremental step towards a full assault ban. Policymakers must remain diligent; this solution does not preemptively address further radical ideas or weapons the industry could adopt after the passage of this legislation.

Recommendations and Implementation

This report recommends educational leadership and policymakers advocate for an assault weapons ban in conjunction with the implementation of the education advertisement campaign. The assault weapons ban ranks high in the most important category, maximizing the number of lives saved because it disarms the perpetrators from using their preferred weapon. The largest trade-off in pursuing the assault weapons ban is the expected increase in harmful marketing by the gun industry and a potential increase in gun violence by people fearful of government overreach. Policymakers can reduce the effects of the gun industry's marketing through education

and empowerment. Knowing the warning signs can make a difference. The advertisement campaign allows everyone to take action. While the assault weapons ban will not pass in a Republican-controlled House of Representatives, both the advertisement campaign and the continuation of mass shootings will build the public support necessary to advance the legislation. Raising the minimum age to buy an assault weapon could function as a pathway to a full ban. People may feel more comfortable with a narrow ban, however, the threat of passing the ban may incite violence.

While repealing PLCAA would be the most effective long-term gun violence reduction policy, it remains politically overshadowed by the assault weapons ban or a raise in the purchasing age. Repealing PLCAA would help politicians circumvent the power of the gun lobby because civil lawsuits would force the industry to change. Without repealing PLCAA, gun safety legislation may remain difficult to pass as long as *Citizens United v. FEC* stands. Similarly, if PLCAA were politically feasible it would also complement the advertisement campaign because together they would encourage responsibility on both ends of a purchase.

References

- Albers, R. K. (2022, October 19). *American as apple pie - jstor daily*. JStor Daily. <https://daily.jstor.org/american-as-apple-pie/>
- Amin, K., & McGough, M. (2023, February 2). *Child and teen firearm mortality in the U.S. and peer countries*. KFF. <https://www.kff.org/global-health-policy/issue-brief/child-and-teen-firearm-mortality-in-the-u-s-and-peer-countries/>
- Balingit, M. (2022, May 28). *Republicans, reluctant to pass gun regulations, Push Arming Teachers*. The Washington Post. <https://www.washingtonpost.com/education/2022/05/25/harden-school-s-arm-teachers-uvalde/>
- Bhatia, R. (2019, April). *Guns, lies, and fear - Center for American Progress*. <https://americanprogress.org/wp-content/uploads/2019/04/NRA-report.pdf>
- Boine, C., Siegel, M., & Maiga, A. (2022, October 3). *The effectiveness of value-based messages to engage gun owners on firearm policies: A three-stage nested study - injury epidemiology*. BioMed Central. <https://injepijournal.biomedcentral.com/articles/10.1186/s40621-022-00394-6>
- Borum, R., Cornell, D. G., Modzeleski, W., & Jimerson, S. R. (2010). What Can Be Done About School Shootings? A Review of the Evidence. *Educational Researcher*, 39(1), 27–37. <http://www.jstor.org/stable/27764551>
- Brady. *Effects of gun violence*. Brady. (n.d.). <https://www.bradyunited.org/issue/effects-of-gun-violence>
- Brady. *End family fire*. Brady. (n.d.). <https://www.bradyunited.org/program/end-family-fire>
- Brady. (n.d.). *Supply-side approach*. Brady. <https://www.bradyunited.org/program/combating-crime-guns/supply-side-approach>
- Brady. *Trends in gun sales*. Brady. (n.d.). <https://www.bradyunited.org/fact-sheets/trends-in-gun-sales>
- Brady. *What are assault weapons and high-capacity magazines?* Brady. (n.d.). <https://www.bradyunited.org/fact-sheets/what-are-assault-weapons-and-high-capacity-magazines>
- Brady. *Which senators have benefitted the most from NRA money?* Brady. (n.d.). <https://elections.bradyunited.org/take-action/nra-donations-116th-congress-senators>
- Breslow, J. (2022, June 9). *Raising the drinking age helped reduce crashes. Could age limits curb gun violence?* OPB. <https://www.opb.org/article/2022/06/09/gun-buying-age-limits-debate/>
- Brownstein, R. (2022, May 25). *The Real Reason America doesn't have gun control*. The Atlantic. <https://www.theatlantic.com/politics/archive/2022/05/senate-state-bias-filibuster-blocking-gun-control-legislation/638425/>
- Center for American Progress. (n.d.) *Guns, lies, and fear - center for American progress*. <https://americanprogress.org/wp-content/uploads/2019/04/NRA-report.pdf>
- Center for Violence Prevention. (2021, September 7). *School shootings*. Center for Violence Prevention. <https://violence.chop.edu/school-shootings>
- Clyde, D., & Miranda, S. (2022, June 25). *Biden signs gun safety bill into law*. NPR. <https://www.npr.org/2022/06/25/1107626030/biden-signs-gun-safety-law>

- Coleman, M. A., Gordon, P., Parshall, J., Thomas, T., Olinsky, B., Vargas, E. W., Jarsulic, M., Bedekovics, G., & McConville, D. (2021, November 9). *Frequently asked questions about gun industry immunity*. Center for American Progress. <https://www.americanprogress.org/article/frequently-asked-questions-gun-industry-immunity/>
- Coleman, M. A., Coleman, M., Gordon Director, P., Gordon, P., Parshall, J., Edmund, M., Olinsky, B., Wilson, N., Ndumele, N. L., Jarsulic, M., Bedekovics, G., & McConville, D. (2022, September 16). *Guns are fueling the rise in domestic extremist violence across the country*. Center for American Progress. <https://www.americanprogress.org/article/guns-are-fueling-the-rise-in-domestic-extremist-violence-across-the-country/>
- Congressional Digest. *The Assault Weapons Ban in Action: Did banning certain weapons reduce crime?* (2022). *Congressional Digest*, 101(9), 7–9.
- Consumer Federation of America (n.d.). *Which one - Consumer Federation of America*. Retrieved October 16, 2022, from <https://consumerfed.org/pdfs/gunbro.pdf>
- Collins, M. (2022, March 22). *[What's the difference?]: AR-15 vs M4*. Pew Pew Tactical. <https://www.pewpewtactical.com/ar15-vs-m4-difference/>
- Elving, R. (2022, January 17). *Senate Democrats plan A vote to change the filibuster. So what is it?* NPR. <https://www.npr.org/2022/01/17/1072714887/filibuster-explained>
- Everytown. (2022, March 18). *Assault weapons and high-capacity magazines*. Everytown Research & Policy. https://everytownresearch.org/report/assault-weapons-and-high-capacity-magazines/?_gl=1%2A1yoiq0e%2A_ga%2Aodewotk4mde5lje2ntq3otmlndu.%2A_ga_lt0fwv3ek3%2Amt2ntg4nza5ms40my4xlje2nju4odc1ntgumc4wlja
- Everytown Staff. (2022, June 25). *Monumental victory for gun safety: Everytown, moms demand action, students demand action celebrate gun sense champion president Joe Biden signing Bipartisan Safer Communities Act into law*. Everytown. <https://www.everytown.org/press/monumental-victory-for-gun-safety-everytown-moms-demand-action-students-demand-action-celebrate-gun-sense-champion-president-joe-biden-signing-bipartisan-safer-communities-act-into-law/>
- Everytown Staff (2022, July 19). *The economic cost of gun violence*. Everytown Research & Policy. <https://everytownresearch.org/report/the-economic-cost-of-gun-violence/>
- Everytown Staff. (2022, June 14). *The long, shameful list of gunfire on school grounds in America*. Everytown Research & Policy. <https://everytownresearch.org/maps/gunfire-on-school-grounds/>
- Grabow, C., & Rose, L. (2018, May 21). *The US has had 57 times as many school shootings as the other major industrialized nations combined*. CNN. <https://www.cnn.com/2018/05/21/us/school-shooting-us-versus-world-trnd/index.html>
- Giffords, Brady, & March for Our Lives. (2022, April 7). *Firearms Accountability Counsel Taskforce*. Firearms Accountability Counsel Taskforce. <https://firearmsaccountability.org/FTCPetition.pdf>
- Giffords. (2022, November 10). *Gun industry immunity*. Giffords. <https://giffords.org/lawcenter/gun-laws/policy-areas/other-laws-policies/gun-industry-immunity/>
- Giffords. (n.d.). *Minimum Age to Purchase & Possess*. Giffords. <https://giffords.org/lawcenter/gun-laws/policy-areas/who-can-have-a-gun/minimum-age/>
- Hunter, K. (2022, July 20). *The Role of Assault Weapons in Mass Shooting Incidents: State of the Science*. United States Senate Committee on the Judiciary. <https://www.judiciary.senate.gov/>
- Kohrman, M. (2022, May 27). *Shootings have surged - and gun companies have made billions*. The Trace. <https://www.thetrace.org/2022/05/gun-industry-profits-mass-shooting-covid/>
- Koper, C. S., & Roth, J. A. (2001). *The Impact of the 1994 Federal Assault Weapon Ban on Gun Violence Outcomes: An Assessment of Multiple Outcome Measures and Some Lessons for Policy Evaluation*. *Journal of Quantitative Criminology*, 17(1), 33-74.
- Kulish, N., Glueck, K., & Bender, M. C. (2022, June 17). *Gun control advocates have more money now, but money can't buy zeal*. The New York Times. <https://www.nytimes.com/2022/06/17/business/gun-control-nra-money.html>
- Keyes, K. M. (2022, January 13). *Age, period, and cohort effects in alcohol use in the United States in the 20th and 21st centuries: Implications for the coming decades*. National Institute on Alcohol Abuse and

- Alcoholism. <https://arcr.niaaa.nih.gov/volume/42/1/age-period-and-cohort-effects-alcohol-use-united-states-20th-and-21st-centuries>
- Lankford, A., & Hoover, K. B. (2019). Do the ages of mass shooters matter? Analyzing the Differences Between Young and Older Offenders. *Violence and Gender*, 6(1), 11-15.
- Lee, L. K., Douglas, K., & Hemenway, D. (2022). Crossing Lines - A Change in the Leading Cause of Death among U.S. Children. *New England Journal of Medicine*, 386(16), 1485–1487.
- Levant, R. F. (2022). Extending the gender role strain paradigm to account for U.S. males' gun violence. *Psychology of Men & Masculinities*, 23(2), 151–159.
- Liasson, M., & Aguilar, J. (2022, May 26). *The political stumbling blocks that prevent gun legislation from passing*. NPR. <https://www.npr.org/2022/05/26/1101568184/the-political-stumbling-blocks-that-prevent-gun-legislation-from-passing>
- Lowe, S. R., & Galea, S. (2017). The Mental Health Consequences of Mass Shootings. *Trauma, Violence & Abuse*, 18(1), 62–82.
- Maloney, C. B. (2022, July 27). *Memorandum July 27, 2022 to: Members of the Committee on Oversight and ...Committee on Oversight and Accountability*. <https://oversight.house.gov/sites/democrats.oversight.house.gov/files/2022.07.27%20Supplemental%20MEMO%20for%20the%207-27-2022%20FC%20Gun%20Manufacturer%20Hearing.pdf>
- Mcintire, M. (2013, January 27). *Selling a new generation on guns*. The New York Times. <https://www.nytimes.com/2013/01/27/us/selling-a-new-generation-on-guns.html>
- Miao Jiang, J. (2007). Regulating Litigation under the Protection of Lawful Commerce in Arms Act: Economic Activity or Regulatory Nullity? *Albany Law Review*, 70(2), 537–582.
- Miller, E., Culyba, A. J., Paglisotti, T., Massof, M., Gao, Q., Ports, K. A., Kato-Wallace, J., Pulerwitz, J., Espelage, D. L., Abebe, K. Z., & Jones, K. A. (2019). Male adolescents' gender attitudes and violence: Implications for youth violence prevention. *American journal of preventive medicine*, 58(3), 396-406.
- Montanaro, D., & Westervelt, E. (2022, July 8). *Most gun owners favor modest restrictions but deeply distrust government, poll finds*. NPR. <https://www.npr.org/2022/07/08/1110239487/most-gun-owners-favor-modest-restrictions-but-deeply-distrust-government-poll-fi>
- National Firearm Industry Trade Association. (2022, March 23). *Firearm and ammunition industry economic impact*. NSSF. <https://www.nssf.org/government-relations/impact/>
- Office of Juvenile Justice and Delinquency Prevention. (1999, February). *Promising Strategies to Reduce Gun Violence*. Office of Juvenile Justice and Delinquency Prevention. <https://ojjdp.ojp.gov/>
- Open Secrets. (n.d.). *Gun rights: Lobbying, 2022*. Open Secrets RSS. <https://www.opensecrets.org/g/industries/lobbying.php?ind=Q13>
- Open Secrets. (n.d.). *National PTA lobbying profile*. Open Secrets. <https://www.opensecrets.org/federal-lobbying/clients/summary?cycle=2021&id=D000054321>
- Pew Research Center. (2022, August 9). *2. traits of the parties; Trump and the GOP*. Pew Research Center - U.S. Politics & Policy. <https://www.pewresearch.org/politics/2022/08/09/2-traits-of-the-parties-trump-and-the-gop/>
- Raju, M., Fox, L., & Barrett, T. (2022, June 7). *Key GOP senators signal that raising age to buy semiautomatic weapons is off the table | CNN politics*. CNN. <https://www.cnn.com/2022/06/06/politics/gun-negotiations-congress-republicans/index.html>
- Ramchand, R. (2022, July 11). *Personal firearm storage in the United States*. RAND Corporation. <https://www.rand.org/research/gun-policy/analysis/essays/personal-firearm-storage.html>
- Reuters. (2019, May 8). *Factbox: U.S. states with the most and fewest school shootings*. Reuters. <https://www.reuters.com/article/us-colorado-shooting-states-factbox/factbox-u-s-states-with-the-most-and-fewest-school-shootings-idUSKCN1SE2EX>
- Rosalsky, G. (2021, April 20). *When you add more police to a city, what happens?* NPR. <https://www.npr.org/sections/money/2021/04/20/988769793/when-you-add-more-police-to-a-city-what-happens>

- Rossin-Slater, M., Kim, B., Schwandt, H., Cabral, M., & Schnell, M. (2022, June 1). *How school shootings impact survivors in the long term*. PBS. <https://www.pbs.org/newshour/nation/how-school-shootings-impact-survivors-in-the-long-term>
- Sandy Hook Promise Staff. (2022, November 18). *16 facts about gun violence and school shootings*. Sandy Hook Promise. <https://www.sandyhookpromise.org/blog/gun-violence/16-facts-about-gun-violence-and-school-shootings/>
- Schneider, E. (2022, October 5). *Midterm voters key in on crime*. POLITICO. <https://www.politico.com/news/2022/10/05/midterm-voters-crime-guns-00060393>
- Stern, M. J. (2015, October 14). *Bernie Sanders' defense of his pro-gun, Pro-NRA votes was absolutely terrible*. Slate Magazine. <https://slate.com/news-and-politics/2015/10/bernie-sanders-on-guns-at-the-debate.html>
- The Shorty Awards. (2019). *End family fire - the shorty awards*. The Shorty Awards - Honoring the best of social media. <https://shortyawards.com/11th/end-family-fire>
- Siegel, M., Grene, K., & Dharani, A. (2022, October 17). *Finding the Common Ground in Gun Safety Part One: Research Finding and Executive Summary*. 97 Percent. <https://static1.squarespace.com/static/61fd89ffc80d394fb525db71/t/634eee0e89dbf05860c29861/1666117141048/97Percent-2022Report-Final.pdf>
- Sisak, M. R. (2022, May 27). *22 mass shootings. 374 dead. here's where the guns came from*. AP NEWS. <https://apnews.com/article/uvalde-school-shooting-buffalo-supermarket-texas-d1415e5a50eb85a50d5464970a225b2d>
- Skelley, G. (2022, August 17). *With Cheney's loss, just 2 House Republicans who voted to impeach trump are on the ballot in November*. FiveThirtyEight. <https://fivethirtyeight.com/features/with-cheney-loss-just-2-house-republicans-who-voted-to-impeach-trump-are-on-the-ballot-in-november/>
- Snodgrass, E., & Davis, C. R. (2022, July 29). *These are the 5 Democrats who voted against a ban on assault weapons in the House*. Business Insider. <https://www.businessinsider.com/houses-passes-bill-banning-assault-weapons-likely-fail-in-senate-2022-7>
- Teitelbaum, J., & Spector, E. (2009). *District of Columbia v. Heller: Implications for public health policy and practice*. *Public health reports*, 124(5), 758-760.
- Tulio M. Otero and Lauren A. Barker, "The Frontal Lobes and Executive Functioning," in *Handbook of Executive Functioning* (New York: Springer, 2013).
- U.S. Department of Health and Human Services. (n.d.). *Mental illness*. National Institute of Mental Health. [https://www.nimh.nih.gov/health/statistics/mental-illness#:~:text=Prevalence%20of%20Any%20Mental%20Illness%20\(AMI\),Figure%201%20shows&text=The%20prevalence%20of%20AMI%20was,50%20and%20older%20\(14.5%25\)](https://www.nimh.nih.gov/health/statistics/mental-illness#:~:text=Prevalence%20of%20Any%20Mental%20Illness%20(AMI),Figure%201%20shows&text=The%20prevalence%20of%20AMI%20was,50%20and%20older%20(14.5%25))
- U.S. Government Accountability Office. (2020, July 9). *K-12 education: Characteristics of school shootings*. K-12 Education: Characteristics of School Shootings. U.S. GAO. <https://www.gao.gov/products/gao-20-455>
- U.S. House of Representatives Clerk. (2022, July 29). *Roll call 410 roll call 410, Bill Number: H. R. 1808, 117th Congress, 2nd session*. Office of the Clerk, U.S. House of Representatives. From <https://clerk.house.gov/Votes/2022410>
- Valeeva, A., Li, W., & Cagel, S. (2022, September 7). *Rifles, tasers and jails: How cities and states spent billions of covid-19 relief*. The Marshall Project. <https://www.themarshallproject.org/2022/09/07/how-federal-covid-relief-flows-to-the-criminal-justice-system>
- Vigderman, A., & Turner, G. (2022, November 17). *A timeline of school shootings since Columbine*. Security.org. <https://www.security.org/blog/a-timeline-of-school-shootings-since-columbine/>
- Violence Policy Center Staff. *Regulating the gun industry*. Violence Policy Center. (2021, July 16). <https://vpc.org/regulating-the-gun-industry/>
- Weiss, B. (2018, February 20). *5 charts that show how powerful the NRA is*. Business Insider. <https://www.businessinsider.com/nra-power-lobbying-statistics-gun-control-2017-10>
- West, D. M. (2022, June 27). *Observations from Trumpland*. Brookings. <https://www.brookings.edu/blog/fixgov/2022/06/27/observations-from-trumpland/>

- Wilson, N. (2022, August 18). *Fact sheet: Weak gun laws are driving increases in violent crime*. Center for American Progress. <https://www.americanprogress.org/article/fact-sheet-weak-gun-laws-are-driving-increases-in-violent-crime/>
- World Population Review. (n.d.). *School Shootings by State*. World Population Review. <https://worldpopulationreview.com/state-rankings/school-shootings-by-state>

BOOK BANNING IN POSTMODERN AMERICA: WHO'S ACTUALLY DOING THIS?

Katherine Cassandra Sperow

Abstract

This paper examines the language and discourse of groups and organizations listed as the primary entities presenting book challenges and otherwise attempting to ban certain books at public libraries and public school libraries. The work provides insight into the drastic increase in book challenges that the American Library Association reports for the school year 2021-2022 within the context of wider historical trends and contemporary opinion about book bans. Previous research into the groups initiating book challenges and bans is reviewed and used to frame the language and discourse analysis. This research hypothesizes that the groups engaged in book challenge/ban activity are predominantly conservative in nature and that the topics or content of issue is social in nature, especially in terms of the traditional family unit. By contrast, it is least likely that there will be groups that identify as liberal or progressive. I test these hypotheses with publicly compiled data of book challenge/ban activity that lists organizations in direct link to titles of books wished to be banned. Qualitative analysis of the content of each group's language on its website is used to develop a score for how probable it is that each group is conservative. External commentary of each group's activities is reviewed afterwards to verify, if possible, whether the group is commonly considered to be conservative or not, unless otherwise ostensibly mentioned on the group's website. To the author's knowledge, very little research in this area is present such that the contribution of this work is to provide insights as to the patterns of contemporary book ban activity, given that most Americans, despite political party, oppose materials being removed from schools and/or public libraries based on content objections.

Introduction

Recent news stories assert that there is an increasing trend in books being challenged or banned in public schools and community libraries across the United States (U.S.). The number of book bans and/or challenges in 2021-2022 has drastically increased to a record level for two years back-to-back (Hines 2022). Books such as *And Tango Makes Three*, by Peter Parnell and Justin Richardson, and *Gender Queer* by Maia Kobabe, explore the experiences of LGBTQ+ individuals and have both ranked in the top ten most challenged books, according to the American Library Association (2022).

I argue that as formerly niche or marginalized identities or ideas become more mainstream, opposing groups in society will try to control the knowledge or information about those ideas or identities through many means, one of which is book bans and challenges in public schools and local libraries. As trends in inclusiveness or diversity increase, conservative attempts to balance or stifle those trends tend to increase.

This paper hopes to provide insight into the actors behind the dramatic increase in book bans and challenges over the 2021-2022 school year in the United States. From a brief overview of censorship in modern times, and an examination of open citizen data concerning book challenges in the past year or so, I hope to shed light on contemporary trends in book bans and challenges. In this paper, the terms "book ban" and "book challenge" are used interchangeably to mean the movement or trend of groups or organizations submitting verbal and/or written/formal objection and disagreement to certain books as either being included as required reading in public school curricula or included within public schools or community library collections.

First, I review previous work studying trends in book censorship, focusing on the postmodern era. I introduce my theory that book ban activity increases particularly among conservative, right-leaning groups that identify as Christian, although not all Christians are assumed to be conservative politically by nature. I hypothesize that book bans and challenges are brought forth against topics that have to do with social change or that challenge the traditional heterosexual family unit. As the main groups that contribute most to book bans and challenges are conservative politically, it can also be conjectured that left-leaning political groups are less likely to propose book bans or challenges.

I test these hypotheses with open data collected by Dr. Tasslyn Magnussen and published summary statistics by the American Library Association (ALA). Contextual comparisons are added from a 2022 PEN

America report. The bulk of the qualitative and quantitative analyses are completed using Magnussen and ALA summary statistics, with methodology adapted from qualitative content analysis by researcher Emily Knox of interviews with challengers to books. Under Knox's framework of discourse analysis and results from 2015, the results of the current groups targeting books are theorized to be very similar, i.e., conservative politically and predominantly from a Christian religious perspective. I describe the findings in terms of types of groups or individuals proposing book challenges, their degree of political conservatism (if any), and how these groups compare quantitatively and/or qualitatively with any other sources of information on book challenges. I will conclude with the implications for local school districts, parents and caregivers, school-age children, and library systems.

Literature Review

Previous research suggests that a book is viewed as a sacred object. This underlying idea is an important theme in the language and discourse surrounding book bans and challenges (Knox, 2015; Knox, 2022). Hofsteder (1970) argues that censorship, as a general phenomenon, is well known as a tactic for classes or groups in power to control access to knowledge, and therefore power, for citizens across various time periods and civilizations. In 20th century American society, censorship of ideas, in its most general form during the 20th and 21st centuries, may be traced back to anti-intellectualism in the 1950s. In fact, anti-intellectualism has proven to be a trend in American society where classes become divided between those that perceive themselves as educated (intellectuals), and those who perceive themselves to be more 'practical' or 'common sense' (non-intellectuals) (Hofsteder, 1970).

Moreover, the tension between intellectuals and non-intellectuals has defined what constitutes the best education for society: the main discussion based on "...discipline of the heart, and the old-fashioned principles of religion and morality, are more reliable guides to life than an education which aims to produce minds responsive to new trends in thought and art," (Hofsteder, 1970, p. 19). Anti-intellectualism continues to be a driving force behind discussions concerning book challenges and bans (Knox, 2015; Knox, 2022; Peters, 2019).

Research by Dupre (2009) and Kim (2022) show that the highest profile book banning court case of *Island Trees School District v. Pico* (1982), despite being the most often cited book banning case, left much to be desired in terms of process and direction for local school districts. However, it did make clear that students have a "...First Amendment right to 'receive information and ideas and that public schools 'may not remove books from school library shelves simply because they dislike the ideas contained in those books,'" (quoting Justice Brennan in Kim 2022).

Despite the Pico case and the post-modern age of digital on-demand content, book challenges and bans still occur and have been increasing radically (Harris, et al 2022; Haupt, 2022; Martin, 2022), breaking records in both 2020-2021 and 2021-2022 (Hines, 2022). Previous research shows that the themes or topics of books challenged or banned in the late 20th and early 21st centuries thus far have been generally identified as books or materials containing graphic images, passages, or content containing LGBTQ+ characters, violence, witchcraft, wizardry, abuse, and/or race, (ALA, 2022; Knox, 2015; Knox, 2020; Will, 2022).

Specifically, Knox (2015) analyzes fifteen cases of book challenges in detail, interviewing at length the people who brought forth each challenge. Her central conclusions are that of the individuals or groups that pose challenges to materials in schools and public libraries, they are predominantly conservative politically, employ an overall 'apocalyptic' tone of language, and most frequently state themes of the decline of American society's morals. Within this idea of a declining society, the so-called breakdown of the traditional heterosexual, married family unit is most often mentioned by interviewees of Knox. For example, Knox offers the following quote, among many, to illustrate:

"My wife and I have a Judaio-Christian [sic] perspective which stands directly opposed to such worldliness. If one is to conclude that the basic building block of society is the family unit—and that traditionally Is [sic] understood as one man, one woman, and their offspring, then to propose any curriculum in the school system contrary to that, is to establish the society of the chaotic." (p. 125)

Most of the book challengers, as Knox coins these individuals or groups, state Christian conservative, religious viewpoints. A very small minority identified as being from liberal perspectives (Knox, 2015). For those identifying as ‘defending’ children or their society, Knox asserts:

“...the commonsense interpretive strategy found throughout the discourse of censorship is rooted in both Common Sense philosophy and the concept of scientific Christianity, which views the Bible as a book of scientific facts. Challengers employ martial language, particularly the terms “war” and “assault,” to discuss the impending destruction of society.” (p. 137-138)

Knox’s research and analysis was further developed by two reports from PEN America, which shed light on much information the ALA keeps confidential. PEN America is a collected network of national and international organizations with the express purpose to protect an individual’s freedom of expression and access to ideas, materials, or views of others. The acronym “PEN” includes poets, playwrights, editors, essayists, and novelists.

PEN America’s 2016 report “Missing from the Shelf: Book Challenges and Lack of Diversity in Children’s Literature”, discusses acts of soft censorship of children’s books containing content related to identities and roles traditionally underrepresented in children’s books containing LGBTQ+ characters and people of color (Friedman et al). The 2022 PEN America report, “Banned in the USA: Rising School Book Bans Threaten Free Expression and Students’ First Amendment Rights”, presents a current state of the most recent trends in book challenges, book bans, school policies concerning same, and other issues relating to the recent increase in the number of book challenges and bans over the 2021-2022 school year. The overall impact determined in this report is estimated to affect over two million students across the U.S. spanning twenty-six states (Freidman et al., 2022).

An additional public listing by independent researcher Dr. Tasslyn Magnussen and the organization EveryLibrary goes further to directly link books with their challengers by name or organization (Singer-Vine, 2022). It is with this most current and open-source information that I intend to use to support the assertion that the actors behind the most recent increase in book challenges are predominantly conservative groups seeking to “protect” their local communities.

In recent years, both the type and quantity of books about diverse identities has increased (Aviles, 2022). So too the push-back from conservative groups despite many Americans expressing disapproval of books being removed from public schools or libraries. Surveys of how the general American population feels about the practice of banning books are considered to shed light on the relatively small proportion of the population of these conservative groups making such headlines. A survey of American voters, conducted by Hart Research Associates and North Star Opinion Research on behalf of the ALA, found that most Americans are opposed to book bans (American Library Association [ALA], 2022).

Further, when party affiliation was broken down in survey results, political parties did not matter. Both Democrats and Republicans showed overwhelming opposition to book bans (ALA, 2022). In a similar fashion, national polls conducted by CBS News/YouGov and UChicago Harris/AP-NORC also stated that most Americans currently oppose materials or books being removed from schools and/or public libraries about many of the topics usually being challenged or banned (Qamar, 2022). Further, important to note is an EdWeek Research Center survey found that most school officials, teachers, and staff also oppose book bans (Will,2022).

Theory

Trends over the past few decades have increased society’s acceptance of gender and racial diversity in mainstream America (Bhatia, 2020; Winston, 2019; Blakemore, 2021). As mainstream acceptance of identities that were traditionally ostracized in society increases, information in the form of books about those lives and identity experiences also becomes more prevalent and available. This increase is not only in terms of lived experiences but also with works of young adult fiction where the main character identifies as being from LGBTQ or racially diverse identities (Aviles, 2019)

As society evolves to accept diverse identities, individuals of the establishment will seek to maintain local control over their communities. One way to maintain control over one’s community is to limit the amount of information the community has access to, especially in places funded by tax dollars. Limiting a community’s

information can take the form of controlling what people read, especially from the perspective of Christian conservative groups that subscribe to the doctrine of “the book”, i.e. The Bible, as being a sacred and transformative object that saves one’s soul (Knox, 2015). The Bible, as the preeminent earthly transcendence of Christian belief and some recorded history, is a book.

It would make sense if most of the groups posing book challenges were establishment or right-leaning individuals trying to control access to new thoughts and identities (intellectualism). The most recent reasoning listed by ALA on its Top 10 Most Challenged Books of 2021 (and for many other years’ past lists) indicates themes of predominantly LGBTQ+ and sexuality-related content. These reasons for challenging books relate directly to previous research by Knox as the challengers’ sacred book, i.e. The Bible, establishing conservative, Christian values of the traditional heterosexual marriage unit and the perceived shameful of any sort of sexual exploration. It would also make sense that judging by these reasons, the groups or people making the challenges are not liberal or socially progressive. If any groups are found to be progressive or liberal, their stated reasoning would be in relation to protecting socially progressive thoughts on inclusion and diversity.

Controlling the books that are accessible to people takes on much more significance when applied to young adults and children. Book challenges and bans are an expression of conservative establishment groups trying to protect young adults and children as a vulnerable population, given that vulnerable populations may be swayed by topics, ideas, and/or others’ stories. For example, *And Tango Makes Three* is a children’s book about a pair of male penguins who adopt an abandoned penguin egg and alternate sitting on the egg until it hatches. The analogy of the two male penguins as a gay couple presents the idea that a core family unit may have two partners of the same sex which therefore also asserts the idea that a family unit does not need to be composed of the traditional male-female marriage. This book has made the list of the ALA’s Top 10 Most Challenged Books for multiple years.

Gender Queer: A Memoir relates the lived experiences of its author, Maia Kobabe, who identifies as nonbinary and asexual, using the pronouns “e/em/eir”. The autobiography is described as a resource of information for nonbinary or asexual individuals dealing with adolescent crushes, coming out to one’s family, and other important milestones of a person’s life, including how to think about gender identity if one is a family member or friend of someone that may be nonbinary (Kobabe, 2019; Alter, 2022).

Given our growing postmodern acceptance of diverse identities and both the general public’s and education professionals’ disapproval of book bans, the fight over these books continues to increase in both the number of book challenges and the number of conservative groups listed as book challengers. By contrast, the organizations listed as book challengers within the past year are least likely to be from a politically liberal standpoint, an assertion that is in parallel with Knox’s findings from 2015. Using Knox’s focus on the language and discourse of the challengers in 2015 she examined, the focus of this paper is who are the groups that are presenting book challenges now, are they conservative politically, and what does this mean for communities?

Data & Methods

The official tally of book challenges and bans in the U.S. is tracked by the ALA but remains proprietary and confidential. The ALA releases summaries and ‘Top 10’ lists of the most challenged books each year but does not publish its methodology or data (ALA, 2022). Two attempts (Knox and Goldenberg) have been made that are known within the scope of this project to officially request detailed listings and numbers of book challenges and bans over the years. Both attempts were met with resistance as the ALA cited that its database of book bans and challenges is confidential to protect libraries and library staff, and not statistically sound enough to be released to the public (Goldenberg, 2015). Also cited by ALA is that due to the nature of reporting censorship, an estimated 82 to 97 percent of book challenges and bans go unreported (2022). The most detailed, publicly available data on who is posing post-modern book challenges and bans are from the qualitative analyses of Emily Knox and a spreadsheet compiled by Magnussen, an independent researcher also listed as in partnership with EveryLibrary, as well as one of the consultants for PEN America.

Dr. Magnussen’s open data is the only public list known that explicitly links book titles with the name of the organization. I will show that the organizations tracked by Dr. Magnussen are predominantly conservative politically. I use qualitative analysis of the organization’s language on its website or relevant online presence, including any references to the organization in articles or other digital spaces. I also use a scoring mechanism as

to how ‘conservative’ a group appears based on a set of criteria found during the research process and largely based on Knox’s 2015 findings.

In first choosing which groups to examine more closely, Table 1 in the Results section outlines the count of book titles targeted with each percent of the total volume for each group. After exploring and cleaning the data from Magnussen, the highest groups by volume were chosen to be examined further. Only nine groups account for roughly 88 percent of the total volume of books targeted in the U.S. between roughly October 2021 and October 2022. Any group that accounted for less than 3 percent of the total was combined into an ‘Other groups’ category. The results are listed below in Table 1, based on Magnussen’s data. The terms ‘organization’ and ‘group’ are used interchangeably.

From this list of nine, each organization or group’s name, as it was listed in Magnussen’s spreadsheet, was searched using Google to locate the group’s website. Before clicking on the group’s website, the first page of search results was considered given the fact that web search engines rank results by importance. The ranking algorithm for Google’s search engine is beyond the scope of this paper, and it is assumed that the first page of search results is the most *à propos*.

From the Google search results and the group’s website, qualitative analysis was used to decipher the overall language and discourse of each website, using a similar method to Knox (2015). The quantitative scoring mechanism was created to track which groups had a general set of characteristics that was refined into a scoring rubric. I developed the criteria in the scoring rubric in an iterative process by taking the same ideas that surfaced in Knox’s results in 2015 and using them to judge whether the current groups were also politically conservative leaning. Generally, the criteria include whether the organization’s website tone and/or language explicitly assert or implicitly allude to book bans and/or other known conservative issues. A detailed list is provided in the Appendix.

The eleven characteristics (Tables 3 and 4) determined are used to track which characteristics are observed per group. This allowed for a simple “Conservative Score” per group. A value of “1” or “0” was input for each characteristic, where the value of “1” represents “Yes”, as the characteristic was present for that group, or “0” when the characteristic was not present for that group (“No”). Table 2 references each group’s “Conservative Score” and its corresponding probability with external confirmation of whether the group is known to be conservative. An abbreviated version of Table 2 is listed below to indicate the overall conservative nature of the top nine groups examined.

For each group, the “1” values were summed to give an overall “Conservative Score” out of eleven total criteria. The higher the Conservative Score, the higher the probability that the group is conservative politically. Each group’s probability of being conservative based on its Conservative Score was calculated using the standard percentage formula referenced in Table 3 (Appendix). For example, if an organization received seven values of “1” out of eleven criteria, then its probability of being conservative is 7/11, or 64 percent. After scoring the groups and calculating probabilities for each, external sources were found to confirm the group’s political leaning, if known. A list of external sources confirming a group’s political association is listed in Table 2 of the Appendix. In addition to the volume per group, the book titles associated with each of the top groups were cross-referenced with the ALA’s “Top 10 Most Challenged Books of 2021” (Table 7, Appendix). This allowed for cross-validation that the groups tracked by Dr. Magnussen are proposing the same or at least extremely similar challenges as official data from the ALA’s website (2022).

Results

When cross-referencing Dr. Magnussen’s data (2022) with ALA’s published summary statistics (2022), the overall counts amount to 1,575 book titles compared with the ALA’s number of books-challenged list of 1,597. In reviewing how most of this volume was from the top nine groups, all ten of the ALA’s most challenged books are also listed as Magnussen’s top challenged books. Out of the ALA’s top ten, seven of the ten are listed in Magnussen’s top ten. All ALA top ten are listed in Magnussen’s top fifteen (Table 7). Further, when filtering per group, all groups are involved in attempting to ban at least all ten of the ALA-listed book titles. This supports not only the reasonable accuracy of the Magnussen data, but also my results and conclusions based on these data.

The findings from this analysis reveal the original hypothesis of most groups leaning conservative is found to be true with these data. Six out of the nine top groups were found to be conservative with varying

probabilities of at least 50 percent and external sources confirming conservativeness. The six found to be conservative had a range of 4 to 9 out of the 11 criteria before seeking external validation. It is important to note that there is a minority of groups proposing bans related to books deemed as anti-Critical Race Theory and anti-Black Lives Matter. These groups are presumably liberal, but their volume of book titles targeted was significantly lower and lumped into the “Other groups” category. This is in parallel with Knox’s findings in 2015.

(This space left intentionally blank.)

Table 1: Top Organizations/Groups Challenging Books in School and Public Libraries by Volume of Books Targeted (October 2021 – October 2022).

Organization/Group Name	Count of Books Targeted	% of Total
Utah Parents United	639	42.0%
Moms for Liberty*	223	14.7%
Texans Wake Up	119	7.8%
Woke PA	102	6.7%
Porn Hurts - Book Rating System For Fulton County Schools	58	3.8%
No Left Turn in Education	55	3.6%
Oklahoma Attorney General's Office	55	3.6%
Parents Rights in Education - Washington State	47	3.1%
Safe Library Books for Kids-Arkansas	45	3.0%
Other groups**	178	11.7%
Totals	1521	100.0%

Source: Dr. Tasslyn Magnussen, in partnership with EveryLibrary. Data as of November 6, 2022.

*Consolidation of Moms for Liberty Nebraska, Moms for Liberty Brevard County, and Moms for Liberty Hamilton County Tennessee

**Consolidation of groups listed as each having less than 3 percent of the total volume of books targeted.

(This space left intentionally blank.)

Table 2 (Abbreviated): Conservative Scores, probabilities of being conservative, and external confirmations for each organization examined

Organization/Group Name	Conservative Score (out of 11)	Probability of Conservative	External Source Says
Utah Parents United	8	67%	Yes
Moms for Liberty*	7	58%	Yes
Texans Wake Up	5	42%	Yes
Woke PA	6	50%	Maybe
Porn Hurts - Book Rating System For Fulton County Schools	6	50%	Yes
No Left Turn in Education	9	75%	Yes
Oklahoma Attorney General's Office**	3	25%	Maybe
Parents' Rights in Education - Washington State	7	58%	Yes
Safe Library Books for Kids-Arkansas***	4	33%	Yes

*Consolidation of Moms for Liberty Nebraska, Moms for Liberty Brevard County, and Moms for Liberty Hamilton County Tennessee

**Although the current Attorney General in Oklahoma is publicly known to be a Republican, the Office of the Attorney General is assumed to operate on a non-partisan basis for the scope of this project.

***Safe Library Books for Kids-Arkansas did not have a formal website. Their primary page found via Google search was their Facebook Group page.

My hypothesis that the cause of book challenges (Table 5: Stated Reasons for Challenging Books by Group) are issues of social change is true for the groups specific in their language. Generally, the stated reasons fall under the subjects of sexuality, gender, Critical Race Theory, LGBTQ, abuse, and/or violence. This finding is in line with ALA’s published lists (2022) and PEN America’s report (Freidman et al, 2022). It is important to note that 84 percent of the stated reasons from the top nine groups use less or unspecific terms (See also Table 5: Stated Reasons for Challenging Books by Group). It is most likely that book challenges will continue that are based on maintaining traditional gender roles and Christian values.

Limitations and Future Research Possibilities

One obvious limitation is that there is only one source found for a compiled list of groups linked to book titles. PEN America’s spreadsheet (Freidman et al, 2022) lists by district and state, as is Dr. Magnussen’s, but does not list organizations or groups per title, challenge, or ban. The one source lends itself to human political bias, despite being cross-referenced with ALA summary data. As Dr. Magnussen is partnering with EveryLibrary, the political bias on the part of the sponsoring organization may also be a hidden factor.

A possible data flaw was found in Dr. Magnussen’s spreadsheet. Florida Citizen’s Alliance possibly has 61 entries and not 1. The pre-processed end of the spreadsheet from Dr. Magnussen contains a grouping of 61 book titles with only the first cell for this group being listed as “Florida Citizen’s Alliance”. Judging by the way the Excel list of 61 book titles is grouped (Magnussen, 2022), it is possible that the human entering the data meant to fill in the rest of the 60 cells for the group as “Florida Citizen’s Alliance”, which would alter the ranking listed

in Table 1. Despite this possible human data error, the conclusion of this paper holds that most of the groups are conservative politically.

I recognize from personal experience in having family members identify as LGBTQ and Christian that there are nuances within the Christian community of acceptance and inclusion. These nuances are beyond the scope of this paper but are important to note for future research to see where the top nine groups fall within the spectrum of the Christian political community. I was not able to find open-source data on the number of new LGBTQ+ books published or sales data per year. Anderson asserts that they have been growing and that publishers may try to optimize upon the growth in this sub-market over the past 1-3 years (2022). The increase in quantity and type of books with LGBTQ+ content is also established via Cadden (2022) and Aviles (2019) within the past few years.

Conclusion

At the beginning of this analysis, I stated that I hoped to shed light on the groups proposing book challenges, bans, and their latest trends. As most groups within the past year were confirmed as conservative, and as the U.S. continues to experience political divisions generally, it is safe to determine education and library professionals will remain tense unless they have established very clear and transparent policies for the public to understand the need for intellectual freedom. The nature of each group's book challenge activity seems to be highly localized with only a couple of groups operating nationwide; however, it may be easy to imagine that their rhetoric would be infectious to those who trust any claims of expertise, drawing on fear.

It is most likely that additional individuals and groups will continue to form and challenge books, attempting to remove any materials they deem "inappropriate" for school-age minors as well as adults in their local communities. The volume of the top nine groups seems to be concentrated in pockets across the U.S. in mostly conservative states. It is most likely that in these areas, book challenges will continue to be a noticeable issue both locally and nationally, despite how localized each book challenge case may be. The most important takeaway from this analysis is that school districts and public library systems must maintain clear policies to educate the public, not only on book challenges but also on peoples' right to choose what they want to read.

References

- Alter, A. (2022, May 1). *How a Debut Graphic Memoir Became the Most Banned Book in the Country*. The New York Times. <https://www.nytimes.com/2022/05/01/books/maia-kobabe-gender-queer-book-ban.html>
- American Library Association. (2013, March 26). *Top 10 Most Challenged Books Lists*. American Library Association. <https://www.ala.org/advocacy/bbooks/frequentlychallengedbooks/top10>
- American Library Association. (2022, March 21) *Hart Research Associates and North Star Opinion Research on behalf of the American Library Association: Voters Oppose Book Bans in Libraries*. American Library Association. <https://www.ala.org/advocacy/voters-oppose-book-bans-libraries>
- Anderson, P. (2022, 30 June). *NPD Group: United States LGBTQ Book Sales Are Surging*. Publishing Perspectives. <https://publishingperspectives.com/2022/06/npd-group-united-states-lgbtq-book-sales-are-surging/>
- Aviles, G. (2019, March 10). *The rise of young adult books with LGBTQ characters – and what's next*. NBC News. <https://www.nbcnews.com/feature/nbc-out/rise-young-adult-books-lgbtq-characters-what-s-next-n981176>
- Bailey, A. (2022, Jan 4). *Book banning is back: Arkansans try to nix content on sex, gender and race*. Arkansas Times. <https://arktimes.com/arkansas-blog/2022/01/04/book-banning-is-back-as-arkansas-censors-try-to-nix-content-on-sex-gender-and-race>
- Bhatia, J. (2020, June 25). *Global Acceptance of LGBTQ On the Rise*. U.S. News. <https://www.usnews.com/news/best-countries/articles/2020-06-25/lgbtq-acceptance-growing-in-us-and-other-countries-over-time>
- Blakemore, E. (2021, Oct 19). *From LGBT to LGBTQIA+: The evolving recognition of identity*. National Geographic. <https://www.nationalgeographic.com/history/article/from-lgbt-to-lgbtq-ia-the-evolving-recognition-of-identity>

- Binkley, C. (2022, Nov 14). “*Too hyperbolic?*” *School board parental rights push falters*. The Associated Press. <https://apnews.com/article/school-boards-politics-parents-rights-2bed4680bdedd4c866e046136630a9e8>
- Cadden, M. (2022, June 15). LGBTQ books sales soar, led by titles ‘They Both Die at the End’ and ‘Heartstopper’. USA Today. <https://www.usatoday.com/story/entertainment/books/2022/06/15/lgbtq-book-sales-on-the-rise/7632864001/>
- Dupre, A. P. (2009). *Banning Books from School: The Right to Receive Speech, or Not in Speaking up: The Unintended Costs of Free Speech in Public Schools*. Cambridge, Mass: Harvard University Press.
- Friedman, J. (2022, April). *Banned in the USA: Rising School Book Bans Threaten Free Expression and Students’ First Amendment Rights*. PEN America. <https://pen.org/banned-in-the-usa/>
- Garcia, A. (2022, Feb 25). *Conservative websites are fueling book bans in Texas and across the country*. Chron. <https://www.chron.com/politics/article/Banned-books-list-Texas-school-district-libraries-16927397.php>
- Goldenberg, D. (2015, June 22). *We Tried — And Failed — To Identify The Most Banned Book In America*. ABC News Internet Ventures. <https://fivethirtyeight.com/features/we-tried-and-failed-to-identify-the-most-banned-book-in-america/>
- Harris, E. A. & Alter, A. (2022). *Book Ban Efforts Spread Across the U.S.* *New York Times*. <https://www.nytimes.com/2022/01/30/books/book-ban-us-schools.html>
- Haupt, A. (2022, June 9). *The rise in book bans, explained*. The Washington Post. <https://www.washingtonpost.com/books/2022/06/09/rise-book-bans-explained/>
- Hines, S. (2022, Sept 16). “American Library Association Releases Preliminary Data on 2022 Book Bans.” American Library Association. <https://www.ala.org/news/press-releases/2022/09/ala-releases-preliminary-data-2022-book-bans>
- Hofstadter, R. (1970). *Anti-intellectualism in American Life*. New York: Vintage Books.
- Jensen, K. (2022, Nov 4). *The Biased Online Book Ratings Systems Undermining Professional Review Sources: Book Censorship News*. Riot New Media Group: Book Riot. <https://bookriot.com/biased-online-book-ratings-systems/>
- Knox, E. J. M. (2015). *Book Banning in 21st-Century America*. Rowman & Littlefield Publishers.
- Knox, E. J. M. (2020). Books, Censorship, and anti-intellectualism in schools. *Phi Delta Kappan*, 101(7), 28-32. <https://doi.org/10.1177/0031721720917526>
- Kobabe, M. (2019). *Gender Queer: A Memoir*. Simon & Schuster.
- Kurtzleban, D. (2022, March 31). *Progressives take a leaf out of the conservative playbook to target school boards*. Oregon Public Broadcasting. <https://www.opb.org/article/2022/05/31/progressives-take-a-leaf-out-of-the-conservative-playbook-to-target-school-boards/>
- Magnussen, T. 2022. *Books Targeted by Groups*. Censorship Attacks. <https://docs.google.com/spreadsheets/d/1LqhGcvFDdT4izvoXRrz95BTDUzLr7M3IHf-2HGKhX7I/edit#gid=776753150>
- Martin, R. (2021, Dec 6). *There's new pressure to ban books at schools*. Morning Edition, National Public Radio. <https://www.npr.org/2021/12/06/1061727091/pressure-grows-to-ban-books-at-schools>
- Moms for Liberty. (2022). <https://www.momsforliberty.org/about/>
- Monkovic, T. (2016, Aug 16). *50 Years of Electoral College Maps: How the U.S. Turned Red and Blue*. The New York Times.
- Mueller, S. (2022, July 19). *Florida teachers saw they’re being silenced amid rise of Moms for Liberty*. WFSU Public Media. <https://news.wfsu.org/wfsu-local-news/2022-07-19/florida-teachers-say-theyre-being-silenced-amid-the-rise-of-moms-for-liberty>
- No Left Turn in Education. (n.d.). <https://www.noleftturn.us/mission-goals-objectives/>
- Office of the Oklahoma Attorney General. (n.d.). <https://www.oag.ok.gov>
- Parents’ Rights in Education. (2022). <https://www.parentsrightsined.org/washington-state.html>
- PEN America. (2016, Aug 31). *Missing from the Shelf: Book Challenges and Lack of Diversity in Children’s Literature*. Pen.org. https://pen.org/wp-content/uploads/2022/08/PEN_children_s_lit_report_FINAL_online.pdf
- Qamar, Z. (2022, Aug 26). *Americans Don’t Want Books Banned, But They’re Divided Over What Schools Teach*.

ABC News Internet Ventures. <https://fivethirtyeight.com/features/americans-dont-want-books-banned-but-theyre-divided-over-what-schools-teach/>

Rated Books. (2022). <https://www.ratedbooks.org/fulton-county-schools?Book+Ratings=5%2F5+Rating+%28worst%29%2C4%2F5+Rating+%28NC-17%29>

Safe Library Books for Kids-Arkansas. (2022). <https://www.facebook.com/groups/606012047072322/?mibextid=6NoCDW>

Schultz, B. (2022, Nov 14). *EXPLAINER: The history behind 'parents' rights' in schools*. The Associated Press. <https://apnews.com/article/religion-education-gender-identity-0e2ca2cf0ef7d7bc6ef5b125f1ee0969>

Singer-Vine, J. (2022, July 6). *Banned and challenged books, mass expulsions, European air traffic, Shakespeare and Saturday Night Live*. ABC News Internet Ventures, <https://fivethirtyeight.com/features/the-datasets-were-looking-at-this-week-8/>

Tanner, C. (2022, March 23). Utah Parents United has set up a PAC to have more political influence. The Salt Lake City Tribune. <https://www.sltrib.com/news/education/2022/03/23/utah-parents-united-has/>

Texans Wake Up. (2022). <https://www.texanswakeup.com/shop>

The New York Times. (2020, Nov 3). *Presidential Election Results: Biden Wins*. The New York Times. <https://www.nytimes.com/interactive/2020/11/03/us/elections/results-president.html>

The New York Times. (2017, Aug 9). *2016 Presidential Election Results*. The New York Times. <https://www.nytimes.com/elections/2016/results/president>

Ullery, C. (2022, April 16). *Parents are Rallying Against Book Bans: Concerns Voiced from School Board Meetings to Halls of Congress*. York Daily Record. <https://www.proquest.com/newspapers/parents-are-rallying-against-book-bans/docview/2692136974/se-2>

Utah Parents United. (2022). <https://www.utahparentsunited.org/laverna.html>

Will, M. (2022, Jan 14). *The Topics That Lead Book Ban Requests, According to School Leaders*. Education Week. <https://www.edweek.org/teaching-learning/the-topics-that-lead-bookban-requests-according-to-school-leaders/2022/01>

Winston, D. (2019, June 19). *How gay rights went mainstream – and what it cost: Activists wanted revolution. They got rainbow Nikes*. The Washington Post. <https://www.washingtonpost.com/outlook/2019/06/30/how-gay-rights-went-mainstream-what-it-cost/>

Woke PA. (2022). <https://wokepa.com>

Appendix

Table 1: Organization/Group Counts of Challenges with Percent of Total Volume

Group Name	# of Challenges	% of Challenges
Utah Parents United	639	42.0%
Moms for Liberty*	223	14.7%
Texans Wake Up	119	7.8%
Woke PA	102	6.7%
Porn Hurts - Book Rating System For Fulton County Schools	58	3.8%
No Left Turn in Education	55	3.6%
Oklahoma Attorney General's Office	55	3.6%
Parents Rights in Education - Washington State	47	3.1%
Safe Library Books for Kids-Arkansas	45	3.0%
Other groups**	178	11.7%
Totals	1521	100.0%

Source: Dr. Tasslyn Magnussen. Data as of November 6, 2022.

**Consolidation of Moms for Liberty Nebraska, Moms for Liberty Brevard County, and M

**Comprises groups listed as having less than 3 % of the volume of book challenges

Table 2: Conservative Scores, probabilities of being conservative, and external confirmations for each organization examined

Organization/Group Name	Conservative Score	Probability of Conservative based on Conservative Score	External Source Says	External Source Name
Utah Parents United	8	73%	Yes	<i>Salt Lake City Tribune</i>
Moms for Liberty	7	64%	Yes	WFSU News
Texans Wake Up	5	45%	Yes	Chron (Houston & Texas News)
Woke PA	6	55%	Maybe	<i>York Daily Record</i>
Porn Hurts - Book Rating System For Fulton County Schools	6	55%	Yes	Book Riot
No Left Turn in Education	9	82%	Yes	Oregon Public Broadcasting
Oklahoma Attorney General's Office**	3	27%	No	Wikipedia
Parents' Rights in Education - Washington State	7	64%	Yes	Associated Press
Safe Library Books for Kids-Arkansas*	4	36%	Yes	<i>Arkansas Times</i>

*Safe Library Books for Kids-Arkansas did not have a formal website. Their primary page found via Google search was their Facebook Group page.

**Although the current Attorney General in Oklahoma is publicly known to be a Republican, the Office of the Attorney General is assumed to operate on a non-partisan basis for the scope of this project.

(This space left intentionally blank.)

Table 3: Conservative Score Rubric Details

Criteria	Organization/Group Name								
	Utah Parents United	Moms for Liberty	Texans Wake Up	Woke PA	Porn Hurts - Book Rating System For Fulton County Schools	No Left Turn in Education	Oklahoma Attorney General's Office	Parents' Rights in Education - Washington State	Safe Library Books for Kids- Arkansas
1. Website includes a "How-to" on banning books	1	0	1	0	1	1	0	0	0
2. Website includes a list of books to be banned	1	0	1	1	1	1	0	1	1
3. Website states or alludes to books in schools and libraries as an important issue	1	1	1	1	1	1	0	1	1
4. Website lists other "woke" issues and alludes to its opposition to same	1	1	1	1	1	1	1	1	0
5. Website lists event or support for a known conservative candidate	0	1	0	0	0	0	1	0	1
6. Wikipedia entry or search links this group to other known conservative groups	0	1	0	0	0	0	1	1	0
7. Google "Related Search" includes the phrase "book ban" upon first searching for group's name	1	0	0	1	0	1	0	0	0
8. Website or its search results within first page of results link this group or label it as "conservative"	1	1	0	1	1	1	0	1	1
9. Other known conservative issue(s) are also important to this group	1	1	0	0	0	1	0	1	0
10. Website links to another group on this list	0	0	0	0	1	1	0	0	0
11. Website contains conservative partisan language	1	1	1	1	0	1	0	1	0
Total Conservative Score	8	7	5	6	6	9	3	7	4
Probability of Conservative (Sum per group / Total possible) x 100	73%	64%	45%	55%	55%	82%	27%	64%	36%

Key: 1 = Yes
2 = No

Table 4: Details Related to Criteria 9 and 11

Organization/Group name	Criterion 9. Other known conservative issue(s) important to this group	Example of Criterion 9, if found	Criterion 11. Website contains conservative partisan language	Example of Criterion 11, if found
Utah Parents United	1	Anti-Critical Race Theory	1	"anti-transgender"
Moms for Liberty	1	Mask mandates (anti-mask)	1	"fight" for liberty in schools
Texans Wake Up	0	Sex Education	1	"offensive" and "defensive" moves; "arm" parents
Woke PA	0	Vaccine Exemptions (anti-vaccine)	1	"arm" yourself
Porn Hurts - Book Rating System For Fulton County Schools	0	Porn	0	-
No Left Turn in Education	1	Anti-Critical Race Theory	1	"radical totalitarian ideology"; "assult and takeover of the educational system"
Oklahoma Attorney General's Office	0	Vaccine Exemptions (anti-vaccine)	0	-
Parents' Rights in Education - Washington State	1	Anti-Critical Race Theory	1	"parental rights"*
Safe Library Books for Kids-Arkansas	0	Sexuality	0	-

Note: Sexuality or sex education was not assumed to be a conservative issue as it relates to overall health. Vaccine-related language was not considered purely conservative and is beyond the scope of this paper.

Table 5: Stated Reasons for Challenging Books by Group

Row	Stated Reason(s)	Count of Stated Reason(s) by Organization/Group Name									Grand Total	% of Total Volume per Group	Unspecific Reason(s)?	Social or Family-based Issue?
		Moms for Liberty	No Left Turn in Education	Oklahoma Attorney General's Office	Parents Rights in Education - Washington State	Porn Hurts - Book Rating System For Fulton County Schools	Safe Library Books for Kids-Arkansas	Texans Wake Up	Utah Parents United	Woke PA				
1	"Working List of Potentially Obscene Books to Review 2021"							526			526	43%	1	0
2	all of these have ratings - we should go get them							119			119	10%	1	0
3	complex rating system we should examine								113		113	9%	1	0
4	Sexually Explicit Books									94	94	8%	1	1
5	"Watch List"	76									76	6%	1	0
6	Obscenity			55							55	4%	1	1
7	sex, sexuality, gender	21			23						44	4%	0	1
8	LGBTQ	42									44	4%	0	1
9	Critical Race Theory	21	23								44	4%	0	1
10	NC17*					35					35	3%	1	0
11	Comprehensive Sexuality Education		20								20	2%	0	1
12	R*					18					18	1%	1	0
13	Anti-Police		12								12	1%	0	1
14	Other reasons**	7	0	0	19	5	0	0	0	6	37	3%	0	1
	Grand Totals	167	55	55	42	58	119	639	102	1237	100%	-	57%	

**Other reasons include specific combinations of Critical Race Theory/LGBTQ or race, sex, and violence and accounted each for less than 1% total volume.

Source: Dr. Tasslyn Magnussen

Key: 1 = Yes
0 = No

Unspecific Reason(s) Total:	84%
Specific Reason(s) Total:	16%

Total Groups with Social or Family-based Issues?	57%
--	-----

Table 6: American Library Association's Top 10 Most Challenged Books of 2021

ALA Rank	Book Title	ALA Quoted Status of Book	ALA Aggregated* Reason(s) for Book Challenge	Specific Reason(s)?	Simplified Reason
1	Gender Queer	Banned, challenged, and restricted	LGBTQIA+ content, and because it was considered to have sexually explicit images	Yes 1	LGBTQ
2	Lawn Boy	Banned and challenged	LGBTQIA+ content and because it was considered to be sexually explicit	Yes 1	LGBTQ
3	All Boys Aren't Blue	Banned and challenged	LGBTQIA+ content, profanity, and because it was considered to be sexually explicit	Yes 1	LGBTQ
4	Out of Darkness	Banned, challenged, and restricted	depictions of abuse and because it was considered to be sexually explicit	No 0	sexually explicit
5	The Hate U Give	Banned and challenged	profanity, violence, and because it was thought to promote an anti-police message and indoctrination of a social agenda	No 0	violence
6	The Absolutely True Diary of a Part-time Indian	Banned and challenged	profanity, sexual references and use of a derogatory term	No 0	sexually explicit
7	Me and Earl and Dying Girl	Banned and challenged	it was considered sexually explicit and degrading to women	No 0	sexually explicit
8	The Bluest Eye	Banned and challenged	it depicts child sexual abuse and was considered sexually explicit	No 0	sexually explicit
9	This Books is Gay	Banned, challenged, relocated, and restricted	providing sexual education and LGBTQIA+ content.	Yes 1	LGBTQ
10	Beyond Magenta	Banned and challenged	LGBTQIA+ content and because it was considered to be sexually explicit.	Yes 1	LGBTQ

Total % of the ALA Aggregated Reason(s) for Book Challenge Specifically Stated:	50%
---	-----

Simplified Reason(s):		
LGBTQ	5	50%
sexually explicit	4	40%
violence	1	10%

*The ALA cites 1,597 books being targeted. It is assumed that the reasons stated above for each book are aggregated from counts per book in its confidential reporting system.

Table 7: Count of Book Challenges by Book Title and Group, showing rank in Magnussen data and cross-reference column when compared with ALA data

Rank	Book Title	Count of Challenges per Organization/Group Name										Listed on ALA Top 10 for 2021?
		Moms for Liberty	No Left Turn in Education	Oklahoma Attorney General's Office	Parents Rights in Education - Washington State	Porn Hurts - Book Rating System For Fulton County Schools	Safe Library Books for Kids-Arkansas	Texans Wake Up	Utah Parents United	Woke PA		
1	The Bluest Eye			1	1	1		1	1	2	11	Yes
2	The Absolutely True Diary of a Part-Time Indian	1		1			1	1	1	2	9	Yes
3	Out of Darkness	1	1					1	1	2	9	Yes
4	Beyond Magenta: Transgender Teens Speak	1			1			1	1	2	9	Yes
5	Lily and Dunkin								1	1	11	No
6	A Court of (Series)	1		1			3		3	5		No
7	Gender Queer: A Memoir	1	1	1	1	1	1	1	1	2	5	Yes
8	Lawn Boy	1	1	1	1				1	2	5	Yes
9	All Boys Aren't Blue	1					1	1	1	2	6	Yes
10	TTYL						1	1	1	1	7	No
11	TTFN	1					1	1	1	2	5	No
12	The Hate U Give	3	1	1	1				1	2		Yes
13	It's Perfectly Normal	2	1		1			1		3		No
14	This Book Is Gay	2	1				1		1	2		Yes
15	Me and Earl and the Dying Girl	2						1	1	3		Yes
16	Crank	2		1				1	1	2		No
17	The Haters	2					1		1	2		No
18	Looking for Alaska	2		1					1	2		No
19	33 Snowfish									2	4	No
20	All American Boys	1	1	1	1	1			1			No
21	The Truth About Alice								1		4	No
22	L8r, G8r	1						1	1	2		No
23	Sex is a Funny Word	1					1	1	1	1		No
24	Erika Moens										5	No
25	This One Summer	1					1	1	1			No

Source: Ranked counts by volume based on data compiled by Dr. Tasslyn Magnussen, as of November 6, 2022, with added comparison column for books listed in the American Library Association's (ALA) Top 10 Most Challenged Books of 2021.

Total "Yes" values 10

Table 8: Comparison of group conservative status vs. the state's voting habits

Organization/Group Name	Conservative or Not	State	Red State in the Last 3 Presidential Elections?*			Overall
			2012	2016	2020	
Utah Parents United	Yes	Utah	Yes	Yes	Yes	Yes
Moms for Liberty	Yes	Nebraska, Tennessee, Florida	Yes, Yes, No	Yes, Yes, Yes	Yes, Yes, Yes	Yes
Texans Wake Up	Yes	Texas	Yes	Yes	Yes	Yes
Woke PA	Maybe	Pennsylvania	No	Yes	No	No
Porn Hurts - Book Rating System For Fulton County Schools	Yes	Georgia	Yes	Yes	No	Yes
No Left Turn in Education	Yes	Nationwide	Nationwide	Nationwide	Nationwide	Nationwide
Oklahoma Attorney General's Office	Maybe	Oklahoma	Yes	Yes	Yes	Yes
Parents Rights in Education - Washington State	Yes	Washington	No	No	No	No
Safe Library Books for Kids-Arkansas	Yes	Arkansas	Yes	Yes	Yes	Yes

*Source: NYTimes.com

Total Overall "Yes"	6
---------------------	---

Percent Overall "Yes"	67%
-----------------------	-----

ENVIRONMENTAL AND ENERGY POLICY

CARBON DIOXIDE REMOVAL: A CLIMATE CHANGE PANACEA

Christopher Caisse

Abstract

Anthropogenic climate change has caused widespread adverse impacts and related losses and damages to nature and people beyond natural climate variability, according to the latest Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (IPCC, 2022). Greenhouse gas emissions, particularly unabated carbon dioxide (CO₂), have been the largest contributor to these impacts. Ambitious and urgent climate action is needed before 2030 to achieve the goals of the Paris Climate Agreement, which aims to limit warming to below 2 degrees Celsius compared to pre-industrial levels. Climate action strategies often rely on technology-based innovations, either existing or emerging. One such emerging technology application is the concept of carbon dioxide removal (CDR), defined as approaches that remove CO₂ directly from the atmosphere. Notably, the IPCC Sixth Assessment Report cited CDR for the first time as a necessary technological solution to limit warming to below 2 degrees. In the United States, recent investments and incentives in CDR have renewed interest in its potential as a widespread climate solution. However, CDR at scale is in its infancy and lacks widespread governance and verification mechanisms, and also faces criticism from environmental organizations and justice advocates. The concept is generally misunderstood or unknown entirely to the general public and policymakers, and therefore, suffers from a lack of public awareness about the technology and its potential and limitations.

Suppose CDR were to be deployed at large enough scales and serve as a successful technology to limit the impacts of climate change. In that case, policymakers will need to understand its technological limitations, weigh the cost-benefit of implementing policy incentives and mandates, develop robust governance and verification frameworks, and ensure stakeholders and communities are part of any technological development. Without these considerations, CDR will not be the climate panacea it purported to be.

Introduction

The concept of CO₂ removal is not new. In the context of climate policy, nature-based solutions naturally remove CO₂ from the atmosphere. Practices, such as afforestation, reforestation, and protection of natural carbon sinks like wetlands and oceans, have been discussed and employed for decades (Institute for Carbon Removal Law and Policy, 2020). According to the International Energy Agency (IAE) Greenhouse Gas Program, technology was used to capture CO₂ by separating it from natural gas and methane reservoirs as early as the 1920s (International Energy Agency, 2008). The idea of capturing CO₂ and preventing it from being released into the atmosphere was first proposed in the 1970s using existing technology but in a novel way. Oil and gas companies even used the captured CO₂ to boost oil recovery by piping it into wells, also known as Enhanced Oil Recovery. Though these solutions have been known and deployed to some degree for decades, they have not been enough to substantially remove enough CO₂ to yield a significant effect on the rate of climate change.

The deployment of CDR to remove residual emissions in the atmosphere at regional, national, and international scales is necessary if net zero CO₂ or greenhouse gas emissions are to be achieved and to avoid the worst possible impacts of climate change, according to the IPCC report (IPCC, 2022). Further, it notes that scaling up CDR technologies depends on developing effective public policies that support the widespread deployment, monitoring, and evaluation of such technologies. All climate mitigation strategies detailed in the report, including CDR, face challenges with implementation, including technology readiness risks, scaling up, and high start-up and implementation costs.

Understanding the difference between CO₂ removal and carbon capture and storage is critical to understanding the policy landscape. This paper assesses the readiness and efficacy of technologies that are classified as CO₂ removal and not carbon capture and storage (CCS). Direct air capture (DAC) is a method and technology that removes existing CO₂ from the atmosphere and can be classified as CDR (Institute for Carbon Removal Law and Policy, 2020) DAC technology draws in air from the atmosphere and concentrates the CO₂ into a form of pellets which can be permanently buried or used for another purpose, such as fuel. In contrast, technologies that capture CO₂ from the point source, such as a flue or smokestack at a power plant that burns fossil fuels are examples of carbon

capture and storage. This method is not considered true CO₂ removal since it only removes new or anticipated CO₂ from the burning of fossil fuels. CDR and DAC can also be considered as negative emissions technologies as opposed to CCS technologies, also called net zero emissions technologies. If meaningful reductions in CO₂ from the atmosphere are to be realized, technology such as DAC which removes existing CO₂ from the atmosphere must be deployed at scale.

Scope of the Issue

The increased scale at which CO₂ removal technology is now being developed, and the associated increase in new companies and investments, warrants significant attention from policymakers. If deployed successfully and at scale, CDR technology has the potential to introduce a rapid fundamental enhancement and transformation of the national and international response to the climate crisis. In the context of the traditional technology adaptation curve, CDR technology is predominately in between the innovation and early adopter stages. The U.S. Department of Energy classifies DAC technology as ranging from conceptual engineering and materials design (Technology Readiness Level [TRL] 2-5) to large-scale testing and front-end engineering studies (TRL 6-7) (Department of Energy, n.d.).

With the recent passage of the Inflation Reduction Act (IRA) in the United States, significant incentives on the order of tens of billions of dollars in tax credits will soon be offered to further the development of carbon capture technologies. The Clean Air Task Force, a climate policy monitoring group, estimates that the IRA will provide nearly \$28 billion in annual capital investments in CO₂ transportation and storage projects by 2030, at which point U.S. facilities would trap and sequester some 200 million metric tons of CO₂ per year. U.S. greenhouse gas emissions totaled about 5.6 billion tons in 2021 for comparison (PrincetonZERO, 2022). Specifically, the IRA updates what is known as the 45Q tax credit, which incentivizes the use of carbon capture and storage. The IRA increased the value of the tax credit across multiple carbon removal strategies, including from \$50 to \$85/ton for storage in saline geologic formations from carbon capture on industrial and power generation facilities, from \$35 to \$60/ton for utilization from industrial generation carbon capture, from \$50 to \$180/ton for storage in saline geologic formation from DAC, and from \$50 to \$130/ton for utilization from DAC (Clean Air Task Force, 2022). Note that “utilization” very likely means capturing CO₂ for other industrial purposes including fertilizer, cement, and fuel, which should not be considered negative CO₂ emissions.

A philosophy in public policy is the distinction between “carrots” and “sticks.” Carrots are incentives to take a certain action or make an investment and often come in the form of tax breaks or policy nudges. There is often no penalty associated with carrots and they can be considered bottom-up approaches. Sticks, on the other hand, can be penalty heavy. Sticks are policies that mandate a requirement in the form of a rule or law. This is considered a top-down approach. The IRA provides a major carrot via generous updates to the 45Q tax credit, which will fundamentally transform the incentive structure for businesses towards more investments in CO₂ removal. The 45Q tax credit, however, is not without its problems or criticisms. Dr. Simon Nicholson, Associate Professor of International Relations and co-founder of the Institute for Carbon Removal Law and Policy at American University, draws out this criticism. Nicholson states,

“A critique leveled by environmental justice groups, and even a lot of mainstream environmental groups, is that 45Q is a gift to oil and gas. The oil and gas industry were in the room writing the rules for 45Q and what we saw in its first iteration was that companies would take the tax credit and develop enhanced oil recovery projects which were allowable and really walk away from the monitoring questions” (Nicholson, 2022).

Nicholson notes the changes to the 45Q tax credit may spur an entirely new CDR industry with new actors. However, if methods like enhanced oil recovery are still allowable under the new rules and projects are still not required to monitor and verify their claims, are the tax credits really helping address the problem? In its current form, 45Q may incentivize new investments in CDR and CCS but it does not go far enough to incentivize only negative emissions technologies. Further, it has no monitoring and verification mechanism to substantiate claims for the long-term storage of CO₂. 45Q is also not technology-agnostic, potentially stifling investment in other novel CDR technologies or processes. Start-up costs for new actors pose another challenge, in addition to

the regulatory burden IRA imposes to actually obtain the tax credits. In February 2023, the Internal Revenue Service issued guidance on how the tax credits will be administered (Department of Treasury, 2023). At the time of this analysis, the Internal Revenue Service guidance had not yet been assessed. Oil and gas companies stand to benefit from economies of scale since they are currently the predominant carbon removal actors with the capital, expertise, and political power to rapidly invest in CDR and CCS.

Case studies of CDR technology deployment are limited and on much smaller scales than those required for a substantial positive impact on negative emissions. Nonetheless, there are companies that have successfully developed CDR technology in operation today. Climeworks, based in Switzerland, uses DAC consisting of modular CO₂ collectors stacked to build machines of varying sizes. Climeworks sells some of the concentrated CO₂ for industrial use and food and drink materials production, while also partnering with another entity, called Carbfix, that permanently stores a portion of the CO₂ underground. In 2021, Climeworks launched a facility, called Orca, entirely devoted to storing the CO₂ underground instead of recycling or selling it. It captures and permanently sequesters around 4,000 tons of CO₂ per year (Trendafilova, 2022). Carbon Engineering, based in British Columbia, has perfected the commercialization and large-scale adoption of its direct air capture technology. The company is currently building a large-scale facility in Texas which is slated for completion in 2024. When operational, it is expected to remove 1 million tons of CO₂ per year. To put it in perspective, one analysis found that scenarios achieving 1.5° C included carbon removal deployment by 2050 ranging from 1.3 to 29 gigatons of CO₂ removal per year, with most falling between 5 and 15 gigatons of carbon removal (Fuss, 2018). However, Carbon Engineering primarily partners with oil and gas companies, including Occidental, in which the captured CO₂ is used in enhanced oil recovery processes or combined with hydrogen to produce synthetic crude oil. Global Thermostat, is a DAC startup founded in 2010 that partners with a variety of non-governmental organizations and businesses, including ExxonMobil (Global Thermostat, 2022). In 2022, the founder of Global Thermostat launched the Direct Air Capture Coalition to bring together dozens of DAC technology companies, NGOs, and academic institutions to lay the groundwork for the large-scale deployment of DAC technology. The founder also purports to advocate not for CO₂ reuse, but for permanent sequestration of captured emissions (Shieber, 2022). The Direct Air Capture Coalition is worthy of increased attention and scrutiny from policymakers. It is noteworthy that a cursory survey of CDR and DAC companies, though not exhaustive, predominantly yields entities that primarily employ DAC to use CO₂ for other industrial uses, with limited business models devoted strictly to permanent CO₂ storage underground.

Critics of carbon capture investments in the IRA believe that the tax credits and subsidies will incentivize prolonged use of fossil fuels in the energy sector. This is called the moral hazard effect. Despite the concerns, carbon capture still holds significant potential in accelerating emissions reductions across not only the energy sector, but in other industrial sectors as well, including cement, steel, and fertilizer (Temple, 2022). Given the significant investments in carbon capture technologies in the pipeline and the current likelihood that countries will not meet emissions reduction targets, policymakers will have to contend with developing guidance that harnesses the enormous potential of carbon capture while being mindful of potential negative investment externalities. Another major challenge is the lack of participation by environmental justice actors in the carbon removal debate, Nicholson notes. This hands-off approach serves as a protest to the process but is to the detriment of everyone, particularly the groups that environmental justice advocates claim to represent. Researchers emphasize the need for bottom-up and community-driven approaches in developing and deploying equitable carbon removal projects. Since certain communities often lack the necessary resources to meaningfully engage and invest in these efforts, decision-making processes will have to be tailored and transparent to avoid detrimental impacts to marginalized communities. Projects must consider how those communities can have a sense of ownership in the projects and have processes in place so, “the benefits and resources from carbon removal must be equitably distributed in deployment processes, and safeguards must be put into place that ensures new harms are not created, existing harms are not exacerbated, and any adverse impacts are not borne by already overburdened communities” (Batres, 2021). Effectively engaging these communities in the carbon removal debate will be an enduring challenge.

Policy Considerations

To rapidly deploy CDR and DAC at meaningful scales, policymakers must consider the following: governance structures and rulemaking, enforcement, stakeholder engagement and environmental justice, and

feasibility (politically and technologically). CDR policy case studies can be analyzed to better understand the current CDR implementation landscape when comparing policy alternatives given the identified considerations for policymakers above. Assessing the efficacy of CDR implementation models can also be helpful in identifying specific criteria for policy considerations.

In the European Union, resulting efforts to deploy carbon dioxide removal at scale have been decidedly mixed. In a study outlining various EU policies related to various DAC and CCS technologies, researchers detail a 2007 European Council objective to deploy up to twelve carbon capture and storage commercial-scale demonstration projects by 2015. Even though R&D funding mechanisms were identified to support the projects, the collapse of the EU Emissions Trading Scheme carbon price, industry reluctance, a lack of education, and moral hazard concerns led to the cancellation of the effort by 2015 (Geden, 2018). This example illustrates several of the policy issues identified in this analysis, but it should be noted that this particular EU effort was specific to CCS technologies which can be more “politically tainted” compared to DAC, given some of the reasons above. This also exemplifies the often-blurred line between DAC and CCS technologies. The researchers point out that DAC might offer a societally uncontroversial long-term prospect. Since 2015, the EU has set emissions targets that specifically cite CDR as a potential solution, but do not specifically distinguish between natural and technological CDR solutions. The targets also do not offer any specific policies that cite carbon dioxide removal or commitments. The EU Innovation Fund and specific member states, like Switzerland, Germany, and Ireland, do fund research and development for CDR and CCS pilot projects, which are focused primarily on natural carbon dioxide removal solutions, but not on a large scale. However, in Australia, nature-based CDR policies are widespread. Tree planting initiatives, efforts to improve grazing practices, and soil carbon sequestration can be found in many parts of the country. These initiatives are funded primarily through the Climate Solutions/Emissions Reduction Fund (ERF) which evolved out of Australia's short-lived carbon pricing framework. Researchers note that the collapse of the scheme and resulting ERF led to public skepticism of climate action. A well-financed and influential fossil fuel industry campaign also led to an “industry-first” and “climate-later” approach to CDR (Schenuit, 2021).

This paper assesses carbon dioxide removal policy implications in the Inflation Reduction Act at length, which demonstrates the widespread lack of CDR and DAC-specific policies and governance structures, including roles and responsibilities, enforcement, and norms in the CDR sector. The United States largely relies on broad emissions reduction targets and a market-based approach to sector-by-sector reductions. Researchers point out the importance of separating negative emissions targets (to which CDR would contribute), from existing and future targets for emissions reduction and note that the lack of distinction has hampered climate policy. McLaren (2019) explains it best, stating “separation would help minimize the negative impacts that promises and deployments of negative emissions could have on emissions reduction, arising from effects such as temporal trade-offs, excessive offsetting, and technological lock-in. Benefits for international, national, local, organizational, and sectoral planning would arise from greater clarity over the role and timing of negative emissions alongside accelerated emissions reduction”.

Compared to its European and Australian counterparts, the United States features both nature-based and technological CDR prominently in climate policy. The 45Q tax credit, first adopted in 2009 and enhanced in the IRA, as well as the 2018 Farm Bill which supports various nature-based CDR solutions, are just a few examples where CDR enjoys bipartisan support. However, nearly all the policies focus on simply incentivizing the development of CDR solutions, and are limited in what they say about monitoring, evaluation, and substantiation of any CDR claims (Schenuit, 2021). The Center for Climate and Energy Solutions notes that life cycle analysis and environmental monitoring is necessary to foster public trust and long-term support for CDR: “It is critical to establish rigorous and credible life cycle analyses for a variety of removal solutions. Real-world impacts also must be tracked, which means monitoring, reporting, and verification will be critical” (Abouelnaga, 2021). As part of the bi-partisan Infrastructure Law passed in 2022, the U.S. Department of Energy released notices of intent for Regional Direct Air Capture Hubs that will support four large-scale hubs that each comprise a network of carbon CDR projects to help address the impacts of climate change, invest in jobs, and prioritize community engagement and environmental justice (Department of Energy, 2022). Once implemented, these hubs will be useful case studies of potential CDR governance models.

Overall, the literature on DAC-specific CDR case studies is extremely limited, underscoring the emerging nature of the technology and the potential for wide-scale socioeconomic impact given the recent influx in investment. An assessment shows that direct DAC and CDR-policy instruments and governance frameworks are limited or non-existent, general greenhouse gas emissions targets are relatively abundant, but negative CDR emissions targets are lacking, and a general lack of education or skepticism about CDR and DAC prevails. A science and technology policy framework matrix can be leveraged to assess various considerations across legal, standards/regulation, safety, equal access/benefit, sustainability, and resiliency paradigms. These topics can be further broken down into specific issues, priority/impact, and assign specific policy criteria. A non-exhaustive set of additional policy considerations are summarized below:

Legal: A variety of state and Federal regulatory regimes can complicate the siting and development of DAC technologies and facilities. Depending on the kind of DAC technology, legal and liability issues regarding impacts on subsurface water and minerals associated with enhanced oil recovery, and the liability for adverse CO₂ related impacts should be considered. Property rights considerations and siting legality issues should also be considered.

Legislative: The IRA provides billions in tax incentives for the massive deployment of carbon capture technologies, but lacks monitoring and verification mandates to substantiate claims. Some members of Congress are proposing the expedited review and approval for energy and climate technology projects (limiting the National Environmental Policy Act) that are deemed a national priority. This legislation has faced major opposition, but permitting reform should be considered to expedite some projects like electric transmission lines and carbon capture.

Standards and Regulations: Some mainstream environmental organizations argue that current standards and regulations regarding CDR are outdated and do not consider the accelerated deployment of CDR technologies. The White House Council on Environmental Quality (CEQ) has been starting to issue new standards and regulations for carbon capture technologies. Some U.S. federal regulations only require the storage of CO₂ for 50 years to qualify for subsidies.

Sustainability: Rather than replacing fossil fuels, some argue that carbon capture technology prolongs our dependence on them. Currently, most of the captured carbon is used to pump more oil out of the ground. CDR does not capture other harmful pollution, such as fine particulate matter (PM_{2.5}). Some environmental organizations argue that CDR is not consistent with the principles of environmental justice; infrastructure buildout would impose new pollution and safety hazards on Black, Brown, and Indigenous communities already suffering the disproportionate and deadly impacts of environmental racism.

Resiliency: Extending the life of fossil fuel plants would have positive impacts on regional employment and for CDR, though it would depress potential economic and employment gains from the renewable energy that would have otherwise been installed. On the other hand, investments in CDR that sequester CO₂ permanently could also prove to be a boon for a new “green economy.”

Policy Alternatives

Multiple CDR and DAC technology policy pathways are proposed. A set of 4 policy pathways is assessed by examining the cost, political and economic feasibility, and impact and effectiveness of all 4 options. Policymakers should consider cost in any framework in addition to the political and economic viability of a pathway. These criteria can help determine the feasibility of the policy pathway, relative to the political landscape and market conditions to support CDR. Impact and effectiveness assess how well the policy pathway would contribute to negative CpO₂ emissions.

Given the detailed scope of the CDR issue and relevant policy considerations, it can be assumed that all pathways below include a minimum set of criteria critical to the success of CDR and DAC, including robust monitoring and verification frameworks to substantiate the CDR claims. Additionally, a central governance framework to support proper siting and stakeholder engagement, and an informed policymaker community that is

knowledgeable about CDR and associated technologies is required. CDR-specific emissions targets refer to policies that specifically cite negative emissions targets from technologies like DAC. Policies that incentivize action, rather than mandate, include tax breaks and direct subsidies for research and development (carrots). Policies that simply mandate action include carbon taxes and penalties for unsubstantiated claims or missed emissions targets (sticks).

Option	Description	Cost (1-5) 1: Most Expensive 5: Least Expensive	Political and Economic Feasibility (1-5) 1: Least Feasible 5: Most Feasible	Impact and Effectiveness (1-5) 1: Least Effective 5: Most Effective
#1	CDR-specific emissions targets with carrots	2	3	4
#2	CDR-specific emissions targets with sticks	4	2	5
#3	<u>No</u> CDR-specific emissions targets with carrots	2	5	3.5
#4	<u>No</u> CDR-specific emissions targets with sticks	4	2	3

Policy Recommendations

Policies that establish emissions reduction targets tied to carbon dioxide removal via incentives and mandates (Options #1 and #2) would prove to be the most impactful. Policymakers should consider how to build upon the carrots offered in the IRA but explore sticks like a carbon tax, and eventually set CDR-specific negative emissions targets to prolong the interest in and commitment to CDR and DAC specifically as a large-scale climate solution. Currently, the United States is on the policy pathway of Option #3. Note again that for any successful large-scale deployment of CDR and DAC-like technology, policymakers must develop a robust monitoring and verification framework to substantiate the CDR claims. Policies must also include a central governance framework to support proper siting and stakeholder engagement along the lines of environmental justice and educate the policymaker community, so they are knowledgeable about CDR and associated technologies. A logical sequence of events to deploy successful CDR policies is as follows:

1. **Education and outreach:** deploy efforts to inform policymakers and the public regarding CDR to better understand its potential and the difference between CDR and CCS.
2. **Deploy robust frameworks for siting and stakeholder engagement:** the goal should be a systemic approach to CDR deployment; call for a National CDR strategy and standards from entities such as the White House Office of Science and Technology Policy; establish a national CDR office responsible for developing a siting framework that brings together environmental justice advocates and communities.
3. **Develop monitoring and evaluation frameworks and mechanisms:** ensure that companies can prove and substantiate any CDR claims; develop technological solutions and frameworks to monitor long-term storage.
4. **Regularly monitor and modify the 45Q model and assess its efficacy:** incentivize smaller startups focused on permanent CO₂ sequestration technologies so they can compete with oil and gas companies and fund research and development for CDR technologies in parallel to 45Q. Companies that benefit from CDR tax breaks should divert a portion of their revenues to historically marginalized communities. Policymakers should deploy tax breaks only when claims are substantiated.
5. **Explore setting negative emissions targets to sustain CDR investments and importance:** long-term national commitments should cite CDR to ensure its relevance.

6. **Explore setting a price/tax on CO₂:** a national or international tax on carbon would force firms to internalize the cost of carbon emitted during production, thus incentivizing CDR long term.

CO₂ removal technologies like direct air capture hold enormous potential as solutions to slow climate change but the United States is on the precipice of either a major policy win or policy failure. CO₂ removal policies are extremely limited, and a comprehensive analysis of frameworks is difficult to ascertain. However, there are clear and promising approaches to developing a framework that will lead to a policy win that decision-makers must weigh. A systematic approach to CDR as referenced above is required if the United States wants to capitalize on the benefits of CDR and help slow the rate and impact of climate-related losses and damages to nature and people.

References

- Abouelnaga, M. (2021, June 21). *Carbon Dioxide Removal: Pathways and Policy Needs*. Center for Climate and Energy Solutions. <https://www.c2es.org/document/carbon-dioxide-removal-pathways-and-policy-needs/>
- Batres, M., et al. (2021, July 17). *Environmental and Climate Justice and Technological Carbon Removal*. The Electricity Journal. <https://www.sciencedirect.com/science/article/pii/S1040619021000932>
- Clear Air Task Force. (2022, August 19). *Carbon Capture Provisions in the Inflation Reduction Act of 2022*. Clean Air Task Force. Carbon Capture Provisions in the Inflation Reduction Act of 2022 – Clean Air Task Force (catf.us)
- Department of Energy. (2022, May 19). *Biden Administration Launches \$3.5 Billion Program to Capture Carbon Pollution from the Air*. Department of Energy Newsroom. <https://www.energy.gov/articles/biden-administration-launches-35-billion-program-%0bcapture-carbon-pollution-air-0>
- Department of Energy. (2022, December 7). *Carbon dioxide removal program*. National Energy Technology Lab. <https://netl.doe.gov/carbon-dioxide-removal>
- Department of Treasury. (2023, February 13). *Treasury, Energy Release Guidance on Inflation Reduction Act Programs to Incentivize Investments in Underserved Communities, Hard-Hit Coal Communities*. Treasury Department. https://home.treasury.gov/news/pressreleases/jy1269?utm_source=newsletter&utm_medium=email&utm_campaign=wp_climate202&wpisrc=nl_climate202
- Fuss, S., Lamb, W. F., Callaghan, M. W., Hilaire, J., Creutzig, F., Amann, T., Beringer, T., Garcia, W. O., Hartmann, J., & Khanna, T. (2018). Negative Emissions—Part 2: Costs, Potentials and Side Effects. *Environmental Research Letters*, 13(6). <https://iopscience.iop.org/article/10.1088/1748-9326/aabf9f/meta>
- Geden, O., Scott, P., & Palmer, J. (2018). Integrating carbon dioxide removal into EU climate policy: Prospects for a paradigm shift. *WIREs Climate Change*, 9(4). <https://doi.org/10.1002/wcc.521>
- Global Thermostat. (2022). *About Global Thermostat*. Global Thermostat. <https://globalthermostat.com/about/>
- Institute for Carbon Removal Law and Policy (2020). *Explaining Carbon Removal*. American University. <https://www.american.edu/sis/centers/carbon-removal/fact-sheets.cfm>
- International Energy Agency. (2008). *CO₂ Capture and storage: A Key Carbon Abatement Option*. International Energy Agency. <https://www.iea.org/reports/co2-capture-and-storage-a-key-carbon-abatement-option>
- Intergovernmental Panel on Climate Change (IPCC, 2022). *Climate Change 2022: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Langsdorf, S. Löschke, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press. Cambridge University Press, Cambridge, UK and New York, NY, USA, 3056 pp. doi:10.1017/9781009325844
- McLaren, Duncan P., et al. (2019, August 7). *Beyond 'Net-Zero': A Case for Separate Targets for Emissions Reduction and Negative Emissions*. *Frontiers in Climate*. <https://www.frontiersin.org/articles/10.3389/fclim.2019.00004/full>
- Princeton (2022). *Rapid Energy Policy Evaluation & Analysis Toolkit*. REPEAT. <https://repeatproject.org/>
- Schenuit, Felix, et al. (2021, February 2). *Carbon Dioxide Removal Policy in the Making: Assessing Developments in 9 OECD Cases*. *Frontiers*. <https://www.frontiersin.org/articles/10.3389/fclim.2021.638805/full>

- Shieber, J. (2022, September 6). *For the Direct Air Capture Coalition, There's No Time to Waste in the Push to Permanently Remove CO2*. FootPrint Coalition. <https://www.footprintcoalition.com/post/for-the-direct-air-capture-coalition-there-s-no-time-to-waste-in-the-push-to-permanently-remove-CO2>
- Temple, J. (2022, August 25). *Why the Carbon Capture Subsidies in the Climate Bill Are Good News for Emissions*. MIT Technology Review. <https://www.technologyreview.com/2022/08/25/1058591/why-the-carbon-capture-subsidies-in-the-climate-bill-are-good-news-for-emissions/>
- Trendafilova, P. (2022, August 22). *The Top 10 Carbon Capture Companies in 2022*. Carbon Herald. <https://carbonherald.com/top-10-carbon-capture-companies/>

SUSTAINABLY FUNDING WILDLIFE CONSERVATIONISM

Alan Goodman

Abstract

The United States (U.S.) has been funding wildlife conservationism through a pay to consume model for nearly a century. Sportsmen, such as hunters and fishers, pay fees and taxes that support state wildlife agencies in exchange for harvesting game. This pay to consume model has been successful in bringing endangered species back from the brink of extinction with many animals thriving once again. While U.S. wildlife conservationism has been an international success story, a funding crisis is looming. Externalities such as pollution, development, climate change, pressure on non-game species, and a lower number of sportsmen have seen a rise in demand for state wildlife agencies. Collectively, the U.S. states are facing a \$1.3 billion funding gap for their state wildlife agencies that fees and taxes levied on sportsmen can no longer fulfill.

While sportsmen have been paying to use the public good that is wildlife, other outdoor enthusiasts have been freeriding; enjoying wildlife without contributing to its conservation. The \$374 billion outdoor recreation industry has exploded in recent years and represents an untapped resource for wildlife conservationism. Levying a state level wildlife conservation tax on the purchase of recreational outdoor equipment would reduce the free rider problem providing the necessary funds to fill the states' \$1.3 billion-dollar shortfall.

Introduction

Nearly 60 percent of state conservation funding comes from fees and taxes on outdoor sporting equipment and permits used by outdoorsmen (Peterson, 2021). The equipment includes a wide range of gear such as firearms, ammunition, waders, and fishing tackle. Each state uses taxes and fees as a way to fund and bring key species back from the brink of extermination and protect habitats that are in danger of extinction (Peterson, 2021).

Today's system of fees and taxation began in the late nineteenth century when the North American Model of Conservation and the North American System of Conservation Funding were implemented. Taxation of sportsmen was implemented at a time when many Americans were hunting and fishing regularly.

Today, roughly five percent of Americans hunt or fish regularly, however, those numbers are declining (Mehmood, 2003). Lower sportsmen hunters can lessen state revenue and can reduce funds for conservation programs.

States are scrambling to find ways to supplement conservation funding in the face of lower numbers of sportsmen and the rising cost of conservation. States are left with few options. One option is to increase conservation funding. Thus far, any sustainable funding source that is more than a band-aid solution has yet to prove successful. To continue sustainable funding for conservation programs, states should implement a tax on all outdoor recreation equipment, which is like taxes that are currently levied on hunting and fishing equipment.

Conservationism has a broad definition that includes reducing pollution, preserving sensitive ecosystems, and promoting a sustainable agricultural process. The conservationism that American sportsmen fund is wildlife conservationism, preserving, and promoting healthy populations and habitats for the nation's fish and animals. Today, sportsmen fund wildlife conservationism because, during the late nineteenth century, hunters, trappers, fishermen, and whalers decimated wildlife populations across the North American continent. The decimation of wildlife resources is a prime example of the tragedy of the commons, i.e., a theory that posits publicly available resources leads to overconsumption and drives the same resources to the brink of extinction (Heffelfinger, 2013).

At the beginning of the 20th century, American conservationists began to see the long-term effects of the overuse of wild resources. To preserve wildlife, conservationists established the North American Model of Conservationism. The model is an unofficial framework that guides the laws and policies of wildlife conservationists in the United States, Canada, and Mexico. The model consists of seven principles:

1. Wildlife resources are conserved and held in trust by all citizens.
2. Commerce in dead wildlife is eliminated.

3. Wildlife is allocated according to the democratic rule of law.
4. Wildlife may only be killed for a legitimate, non-frivolous purpose.
5. Wildlife is an international resource.
6. Every person has an equal opportunity to participate in hunting and fishing under the law.
7. Scientific management is the proper means for wildlife conservation.

Today, Americans take these principles for granted. However, these principles are the guiding arrow that drives the preservation of wildlife across North America (Association of Fish & Wildlife Agencies, n.d.).

Creating and enforcing wildlife policies in accordance with the principles mentioned above, of course, requires funding. Eliminating the trade of dead wildlife essentially ended an entire industry that could have been taxed. In order to fill this funding gap, the United States and its neighbors developed a pay-to-consume system known as the North American System of Conservation Funding. Under this funding system, hunters pay to utilize publicly owned wildlife resources through the issuing of licenses, charging fees, and paying taxes on sporting equipment.

The federal government subsidizes wildlife conservation, but most conservation funding is at the state level. The federal government dictates how national excise taxes are divided up amongst the states via matching grants (Lance, n.d.). The North American System of Conservation Funding also plays a vital role in managing wildlife. Limiting the number and types of licenses is one of the primary ways that states use to regulate how wildlife is harvested. The North American Model uses the issuance of licenses as a method of monitoring wildlife harvesting (Heffelfinger, 2013).

Currently, individual states have many of their own funding methods. The earliest national-level funding was the Pittman-Robertson Act of 1937. The act co-opted an existing excise tax on firearms and allocated the revenue to state wildlife agencies. The legislation levies a 10 percent excise tax on firearms, ammunition, and archery equipment (Crafton, 2019). The program then provides matching grants for state wildlife restoration projects (Crafton, 2019).

Following the Pittman-Robertson Act, the 1950 Dingell-Johnson Act leveled a similar three percent to ten percent excise tax on fishing tackle and boating equipment. In 1984, marine fuel was added to the act (Vincent, 2019). The Dingell-Johnson Act provides states with matching grants based on geographical area and the number of fishing licenses issued (SOURCE). These grants are used to fund research, access, maintenance, land acquisition, and the operation of state fisheries (Washington Department of Fish and Wildlife, 2021).

With all the various funding sources combined, states take in a collective \$23 billion for conservationism (Peterson, 2021). Around \$612 million from the collected funds are from the sale of hunting licenses, fishing licenses, and fees (Heffelfinger, 2013). An astounding \$313 million are taken in through private donations by hunters (Heffelfinger, 2013). Most donations are from the conservation advocacy groups such as Backcountry Hunters and Anglers or Ducks Unlimited (Heffelfinger, 2013).

Thus far, the North American Models of Conservationism and the North American System of Conservation Funding have proven wildly successful in preserving American wildlife. The models have raised large amounts of money to manage wildlife populations and preserve habitats. Conservation funding was sustainable throughout the 20th century as a pay to consume system. However, the system's sustainability has come into question in recent years as the number of American hunters and anglers has decreased nationwide. It is difficult to accurately measure the exact number of sportsmen because of the varying ways different states issue licenses.

An Alabama study found the number of hunters decreased by 23 percent from 1979 to 2000 (Mehmood, 2003). The researchers found that raising the prices of hunting licenses assisted Alabama in bringing in the same amount of revenue from 1979, making the relationship between price and the sale of licenses inelastic. However, within that 21-year period, inflation and rising operating costs meant that every dollar taken in from license sales could not go as far as it did 21 years earlier (Mehmood, 2003).

A decline in hunting licenses reflects a decrease in sportsmen buying sporting equipment. Therefore, a drop in the purchase and manufacturing of items taxed for conservation. The state of Oregon is facing an \$86.9 million funding shortfall for wildlife conservation because the North American System of Conservation Funding can no longer support the Oregon Department of Fish and Wildlife (Musgrave, 2019). Oregon is putting programs

on the back burner because of a reduction in conservation revenue. These include wildlife research, data management, expanding hunting opportunities, and \$9.6 million dollars in deferred maintenance (Musgrave, 2019).

A few contributing factors have led to a decrease in the numbers of hunters and fishermen. A lack of interest in hunting has followed a demographic shift across the country (Larson, 2021). With the increase in urban and suburban populations, there is less access to areas to hunt and more people who have not grown-up experiencing hunting and fishing culture (Larson, 2021). The acts of hunting and fishing themselves are resource-intensive and require special knowledge. An individual needs access to land or water, a weapon or tackle, and specialized gear. Sportsmen, in general, need to gain detailed knowledge about the game they pursue, hunting and boating safety, local laws and regulations, and general fieldcraft. The equipment and knowledge required can be cost-prohibitive for new sportsmen (Larson, 2021).

The high barrier to entry and information asymmetry have skewed the majority of sportsmen into an older demographic. There has been a significant decrease in American hunters born after the 1980s (Larson, 2021). Those older sportsmen have often accumulated the resources to hunt and fish and had the time and education to gain the appropriate knowledge. An older demographic shift combined with fewer new sportsmen means that the states are headed into a conservation funding crisis as sportsmen age out of the pay-to-consume model (Larson, 2021).

Simultaneously, producing new hunters and fishermen while managing delicate habitats also presents a dilemma for the respective wildlife agencies. States regulate the number of sportsmen, place limits on game harvested, and manage habitat based on the needs of their respective ecosystems (Cole, 2018). Introducing more sportsmen for monetary gain rather than wildlife management could be more detrimental than helpful to wildlife (Cole, 2018).

Most states have instituted hunter education programs to increase the numbers of sportsmen and thus conservation revenue. Hunter education programs have two categories. The first category is youth hunter education programs that target potential hunters under the age of 18 by pairing them up with experienced hunters. These programs are often accompanied by special youth-only hunting days during the hunting season. The other category of hunter-education programs is those directed toward marginalized communities. These programs usually introduce adults to hunting who would have otherwise never been exposed to it.

The new 2019 Pittman-Robertson Fund for Tomorrow's Needs Act is an effort to modernize the original Pittman-Robertson Act. It allows revenue from firearms excise taxes to be used for hunter education programs. While these programs have a degree of success, the number of new hunters is only a drop in the bucket and does not come near the amount needed to fill the fiscal gap (Larson, 2021).

To bridge the deficit between revenue collected by sportsmen and the cost of conservationism, states will have to look for a funding source outside of the hunters and fishermen. There is already a precedent for this, as not everyone who pays an excise tax for conservation is a hunter or fisherman. Under the Pittman-Robertson Act, all firearms, ammunition, and archery equipment is taxed for state conservationism, regardless of the item's intended use (Larson, 2021).

Currently, 80 percent of firearms in use are purchased for purposes other than hunting, but they are still taxed in the name of wildlife conservationism (Larson, 2021). Under the Dingell-Johnson Act, fishing tackle is the only item taxed specifically for sportsmen i.e., boaters of all kinds are contributing taxes that pay for wildlife conservation (Vincent, 2019). While marksmen and boaters have contributed to wildlife conservation without directly using the resource, other groups have also been indirectly contributing. The energy sector is often taxed as a way of contributing back to the public for resources extracted.

In 2019 Congress permanently authorized funding for the Land and Water Conservation Fund (LWCF); the bill was first passed in 1965. The 2019 bill authorized the use of revenue from oil and gas leases in federally controlled waters to fund the LWCF with up to \$900 million annually (Dunning, 2022). The LWCF provides grants across all levels of government to acquire land, water, or easements that all Americans can use; primarily for recreation and the protection of natural resources (Dunning, 2022). Many of these lands come in the form of city parks, historic sites, and wildlife refuges (Dunning, 2022).

The LWCF is often lauded as America's most successful conservation program (Dunning, 2022). However, it does not provide the funding for states to manage their wildlife themselves or administer their

agencies charged with overseeing wildlife resources. States can tax energy revenue for conservationism, but they do not have as much leeway to tax energy as the federal government (SOURCE). States have more competitive pressures placed on them when attracting job-producing industries, like the energy sector. Adding disincentives for the energy industry through additional taxes could cause jobs to leave a state and reduce tax revenue already being collected.

States have tried a few other options to increase wildlife conservation revenue. Entrance fees for public game lands and boat ramps are an option for raising conservation revenue, but entrance fees to public lands have historically proven unpopular. When the National Park Service proposed raising entrance fees, there was huge public backlash tabling the proposal (Walls, 2021). Furthermore, those entrance fees would potentially have to be in the hundreds of dollars if they were to supplement the National Park Services' conservation funding (Walls, 2021).

As early as 1976, Missouri adopted a state constitutional amendment, a conservation sales tax. Missouri voters agreed to adopt a 1/8th of 1 percent sales tax on all goods sold in the state and proceeds would go directly to the Missouri Department of Conservation (Duda, 2021). Arkansas voted to pass a similar sales tax in 1996 and at least ten other states followed suit by 2021 (Duda, 2021). While every additional dollar counts, the revenue from these small sales taxes is too small to meet the rising costs of wildlife conservation (Duda, 2021).

Congress has recognized the impending conservation crisis and has taken some action to assist. In 2000, The State and Tribal Wildlife Grant Program was enacted. Through the United States Fish and Wildlife Service, \$1 billion was divided among 56 states, territories, and the District of Columbia for wildlife conservation (U.S. Fish and Wildlife Service, n.d.). One third of funding was based on a state's landmass and two thirds of funding was determined by a state's population (The Wildlife Society, 2017). In addition to the \$1 billion, the 2016 Blue Ribbon Panel on Sustaining Wildlife Resources recommended increasing to \$1.3 billion annually to close the states' collective funding gaps (The Wildlife Society, 2017).

To meet the recommended \$1.3 billion-dollar target, the Recovering America's Wildlife Act was introduced in 2018 but has not passed the U.S. Senate. The Recovering America's Wildlife Act proposes \$1.3 billion from the Department of the Interior and supplemented by fee revenue generated by environmental violations (Senate Committee on Environment and Public Works, 2021). The \$1.3 billion would be allocated to fund hunter education and recreational shooter programs through 25 percent matching grants (U.S. Government Publishing Office, 2018).

Similarly, failed federal legislation includes the Hunting Heritage and Environmental Legacy Preservation Act, or the HELP Act. Introduced in 2017, the HELP act proposed \$100 million for specific conservation programs, such as gray wolf management and reauthorization of the Chesapeake Bay Initiative Act (MENA Report, 2017). A common theme among these shelved bills is funding for non-game species.

The North American System of Wildlife Conservation Funding intended to reverse the negative impacts of hunters and fishermen on the game species they pursued. Externalities outside of hunting and fishing now have more significant impacts than sportsmen on a wide variety of animals. The North American System of Wildlife Conservation Funding cannot keep up with the management of non-game species that is now required due to other externalities like pollution, climate change, and development.

With congressional funding coming up short in the face of a falling number of sportsmen and an estimated \$1.3 billion-dollar funding gap, states must determine how to fund wildlife conservation domestically. Federal support is too slow for states to wait; the conservation funding crisis is approaching rapidly. Federal funding is also less flexible than the revenue states are raising themselves. Every state has unique conservation needs, for instance, habitats and species variation.

Today sportsmen are no longer the primary demographic that enjoys the outdoors. The outdoor recreation industry has grown exponentially since the North American System of Wildlife Conservation Funding was introduced. Cyclists, hikers, campers, kayakers, and other outdoor recreationists enjoy the same lands and wildlife as sportsmen do without paying to consume the wild resources.

In 2021, the National Park Service reported 297 million recreational visits across the country (National Park Service, 2022). It also reported similar numbers, with 168 million visits to national forests in 2020 for recreational purposes (Forest Service, 2020). These increases in visitation have led to some public lands and wildlife habitats experiencing adverse effects of overcrowding such as erosion and new trails through habitats

where humans can cause destruction (Timmons, 2018). Sportsmen have been targeted for taxation based on the use and destruction of a natural resource, and other outdoor recreationists have not been targeted despite their own wildlife impacts.

Recreational visits across the country's wild spaces often require the use of outdoor recreational equipment. The equipment, of course, is not only limited to being used on national public lands but has broad applications across the outdoor industry. The U.S. Department of Commerce (2021) estimates the entire outdoor recreation economy is worth \$374 billion, constituting 1.8 percent of the United States' gross domestic product.

Outdoor recreation equipment is also broadly defined. Gore-Tex jackets, popular everyday coats, fall into the same category of outdoor recreation equipment as expensive mountain bikes and lightweight camping stoves (Gross, 2018). What's more, outdoor recreational equipment can be wasteful. Consumers who buy and discard equipment create waste and pollution, which contributes to factors that result in the loss of wildlife habitat. Taxing outdoor recreational equipment can help recover the damage caused by manufacturing gear (Gross, 2018).

A sales tax on outdoor recreation equipment represents an opportunity for states to close the gap between current conservation funding and future conservation funding needs. Because of the retail revenue outdoor recreation brings in, there have been calls for an outdoor equipment tax, sometimes called an REI tax (after the equipment retailer), a backpack tax, or an outdoor legacy fund (Peterson, 2021).

An environmental nonprofit, Resources for the Future, estimates a five percent sales tax on outdoor recreational equipment could generate \$4.6 billion in annual revenue (Walls, 2021). A five percent sales tax on outdoor recreation equipment would average a \$12 annual tax on American citizens (Walls, 2021). A five percent tax is half the tax that is currently being imposed on firearms and fishing tackle, which averages to ten percent. Excise taxes from the Pittman-Robertson Act and Dingell-Johnson Act currently generate \$1 billion annually (Walls, 2021). Generating more than four times the current revenue would close the estimated \$1.3 billion-dollar deficit in wildlife conservation funding with a surplus to source proactive conservation programs (Walls, 2021).

A few forms of outdoor recreation equipment taxes have been proposed. First is another federal excise tax. This tax would ensure that all outdoor recreation equipment is taxed uniformly across the country, reducing the motivation for states to compete for business with tax incentives (Walls, 2021). However, the tax would restrict states to utilize those conservation funds to their preference. Funds would also be issued to the states in the form of grants that have traditionally been matching grants. A state would have to raise initial funds to receive a matching federal grant.

Another form of outdoor recreation equipment taxation is to divert funds from already existing taxes for wildlife conservation. Georgia, Texas, and Virginia have already implemented these types of taxes (Buggia, n.d.).

The 2018 Georgia Outdoor Stewardship Act was enacted after Georgians voted to amend their constitution. Nearly 65 percent of all tax revenue from outdoor recreation equipment sold in Georgia is redirected to conservationism. The Georgia Outdoor Stewardship Act funds clean water programs and programs to protect game, wildlife, fisheries, and some outdoor recreation resources in grants to smaller municipalities (Georgia Conservancy, n.d.).

The 2019 Sporting Goods Sales Tax in Texas, derived from a 1994 conservation tax, taxed 50 cents for every one thousand cigarettes sold in the state, which funded the Texas Historical Commission, as well as the Texas Parks and Wildlife Department (Texas Legislative Budget Board Staff, 2016). From 1994 to 2018, a fixed amount of sales tax revenue from outdoor recreation equipment was allocated to the Texas Historical Commission and Parks & Wildlife Department (Texas Legislative Budget Board Staff, 2016). Texas levies a 6.25 percent sales tax on all retail goods (Texas Legislative Budget Board Staff, 2016).

Since 2019, 94 percent of that sales tax levied on outdoor recreation equipment funds the Texas Historical Commission and the Texas Parks and Wildlife Department (Pohl, 2019). The tax generates up to \$168 million a year for conservationism (Buggia, n.d.). 71 percent of the Sporting Goods Sales Tax revenue is used to pay for administrative operations, with 19 percent of funds being used on capital improvements (Texas Legislative Budget Board, 2018). The remaining funds are used for grants to local municipalities (Texas Legislative Budget Board, 2018).

In 2000, Virginia passed an additional tax on hunting, fishing, and wildlife-watching equipment. This tax allocates two percent of state sales tax levied on hunting, fishing, and wildlife-watching equipment to the Virginia

Department of Game and Inland Fisheries (Virginia Legislative Information System, 2000). The department divides the revenue into two funds. The first is a wildlife protection fund used for wildlife management and the second fund is used to directly finance capital investment by the department (Virginia Legislative Information System, 2000). The tax provides up to \$13 million annually (Virginia Legislative Information System, 2000).

The current state tax allocation to wildlife conservation is an excellent example of states levying taxes and utilizing funds as they see fit. All three examples, as mentioned earlier, used a similar mechanism to generate revenue but varied how they used those funds between grants, administrative costs, and investments in assets managed by their wildlife agencies. However, allocating a portion of an already existing sales tax to conservation removes tax revenue from other government services. An additional sales tax, or surcharge, on outdoor recreational equipment, will allow states to fund conservationism without affecting other state agencies and programs. Additionally, to utilize the current federal funding and excise taxes, states must match the grant with at least 25 percent of the funds. A sales tax controlled by the state would allow them to raise funds independent of other government funding sources to match wildlife conservation grants.

However, one of the main concerns regarding an additional outdoor recreational equipment tax is that it may turn away consumers. Outdoor retailer REI's Director of Community and Government Affairs believes that an additional tax would dissuade consumers from purchases they would otherwise make from the outdoor recreation industry as demand for recreational equipment is highly elastic (Peterson, 2021). Outdoor retailers already pay \$125 million annually in combined taxes at all levels (Peterson, 2021).

Resources for the Future estimate a five percent tax on outdoor recreational equipment would result in a 1.2 percent reduction in demand for outdoor gear (Walls, 2021). However, some retailers believe that the added charge would go unnoticed when many consumers are already comparing prices between expensive items and have primed themselves to make a large purchase (Peterson, 2021). The outdoor industry is also very competitive and varied, giving consumers a diverse number of retail options (Walls, 2021). A 2012 survey of North Carolina residents found that North Carolinians broadly agreed that more funding was needed for wildlife conservation. The residents also felt conservation should still be funded through a pay-to-consume system, and 59 percent of respondents favored a tax on outdoor recreational equipment (Dalrymple, 2012).

More concerning than a slight price increase on expensive outdoor gear is that similar to all sales taxes, a tax on outdoor recreation equipment is regressive. As such, lower-income earners would be more affected by the high-income earner. The tax's regressive nature becomes more concerning when considering the broad definition of outdoor recreational equipment.

Products that are commonly used across all demographics, such as waterproof jackets, coolers, and school backpacks, could all potentially be subject to this tax. Bicycles are a prime example of objects used for both outdoor recreation and everyday uses that would be taxed. A surcharge on bicycles could limit access to transportation for those who cannot afford or access another kind of transport.

On average, individuals in the highest quintile could pay 0.017 percent of their annual income on outdoor recreational equipment taxes, while those in the lowest quintile could pay 0.034 percent of their annual income to the tax. The tax ultimately has a very low effect across all quintiles despite these drawbacks. The potential income generated outweighs other funding options that would have a more significant effect of turning away a potential tax base with high fees (Walls, 2021).

With a state-level outdoor recreational equipment tax, different recreational activities would be disproportionately affected in each state depending on an activity's popularity, season, and geography. The Sporting Goods Sales Tax disproportionately affects a few common activities in Texas. Nine percent of all the revenue collected is from golf equipment, another nine percent from fishing tackle, 17 percent from exercise equipment, 18 percent from hunting gear, and 19 percent from cycling. The rest of the income collected is the combined revenue from all other outdoor recreational gear (Texas Legislative Budget Board, 2018). Similar patterns will most likely show up with different activities per state. For example, skis and snowboards may contribute an outsized amount of revenue in Colorado, whereas surfboards may pay dividends for Hawaiian conservation.

Despite few disadvantages of an outdoor recreational equipment tax, the effects on most Americans would be marginal. Americans have shown a willingness to care for the natural resources that they enjoy. The U.S. has already established a model of wildlife conservation that has been the envy of the world through the

twentieth century. It established a pay-to-consume system, one that allowed states to transform the people decimating a natural resource into those conserving and restoring it.

While hunters and anglers were turned into conservationists, other externalities began to take a toll on American wildlife. Development, pollution, climate change, and inflation will now take a quicker toll on wildlife than sportsmen-funded conservation programs can match. Today, more Americans than ever are experiencing the outdoors and purchasing the appropriate gear. As wildlife is a pivotal part of the American outdoors, levying a tax on outdoor recreational equipment would sustainably fund wildlife conservation in the same tradition of paying to consume a natural resource.

States face a \$1.3 billion gap in conservation funding. As such, revenue from state taxes on outdoor equipment sales would take advantage of a considerable portion of the economy, specifically those dedicated to the very resources states are charged with protecting while having a minimal negative effect on the average American's wallet.

References

- Association of Fish & Wildlife Agencies. (n.d.). *North American Model of Wildlife Conservation*. Association of Fish & Wildlife Agencies: <https://www.fishwildlife.org/landing/north-american-model-wildlife-conservation#:~:text=The%20North%20American%20Model%20of,sound%20science%20and%20active%20management>
- Buggia, N. (n.d.). *Dedicated Sales Tax on Outdoor Gear*. Congressional Sportsmen's Foundation. <https://congressionalsportsmen.org/policies/state/dedicated-sales-tax-on-outdoor-gear>
- C. Jane Dalrymple, M. Nils Peterson, David T. Cobb, Erin O. Sills, Howard D. Bondell, & D. Joseph Dalrymple. (2012). Estimating Public Willingness to Fund Nongame Conservation Through State Tax Initiatives. *Wildlife Society Bulletin* (2011), 36(3), 483–491.
- Cole, N. W. (2018, December). Values of consumptive outdoor-recreation participants. *Lincoln, Nebraska: The Graduate College at the University of Nebraska*. 211.
- Crafton, R. E. (2019). *Pittman-Robertson Wildlife Restoration Act: Understanding Apportionments for States and Territories*. Washington DC: Congressional Research Service. <https://sgp.fas.org/crs/misc/R45667.pdf>
- Duda, M.D., Beppler, T., Austen, D.S., Organ, J.F. (2021). The precarious position of wildlife conservation funding in the United States. *Human Dimensions of Wildlife*, 164-172.
- Dunning, K. H. (2022). Unlikely conservation policy making in a polarized Congress: A multiple streams analysis of “America's most successful conservation program”. *Politics and Policy*, 93-118.
- Forest service. (2020). *U.S. Forest Service National Visitor Use Monitoring Survey Results National Summary Report Data collected FY 2016 through FY 2020*. United States Department of Agriculture.
- Georgia Conservancy. (n.d.). *Georgia Outdoor Stewardship Act*. Georgia Conservancy. <https://www.georgiaconservancy.org/gosa>
- Gross, R. (2018). From Buckskin to Gore-Tex: Consumption as a Path to Mastery in Twentieth-Century American Wilderness Recreation. *Enterprise & Society*, 826-835.
- Heffelfinger, J. R., Geist, V., & Wishart, W. (2013). The role of hunting in North American wildlife conservation. *International Journal of Environmental Studies*, 399-413.
- Lance, M. (n.d.). *American System of Conservation Funding*. Retrieved from Congressional Sportsman Foundation: <https://congressionalsportsmen.org/policies/state/ascf>
- Larson, L. R. (2021). The Future of Wildlife Conservation Funding: What options do U.S. College Students Support? *Conservation Science and Practice*.
- MENA Report. (2017). *United States: EPW Hearing Statement: The Hunting Heritage and Environmental Legacy Preservation (HELP) for Wildlife Act*. London: MENA Report.
- Musgrave, R. (2019). *Fish and Wildlife Conservation: Agency Relevance & Fundings*. Middlebury: National Caucus of Environmental Legislators.
- National Park Service, (2022, February 16). *Most famous national parks set visitation records in 2021*. Retrieved from Office of Communications: <https://www.nps.gov/orgs/1207/most-famous-national-parks-set-visitation-records-in-2021.html>

- Peterson, C. (2021, August 10). *Is it finally time for the backpack tax?* Retrieved from Outside Business Journal: <https://www.outsidebusinessjournal.com/issues/policy-and-government/public-lands/is-it-finally-time-for-the-backpack-tax/>
- Pohl, K., Lawson, M. (2019). *STATE FUNDING PROGRAMS FOR OUTDOOR RECREATION: Texas Sporting Goods Sales Tax*. Boulder: Outdoor Industry Association.
- Sayed Mehmood, D. Z. (2003). Factors Associated with Declining Hunting License Sales in Alabama. *Human Dimensions of Wildlife*, 243-262.
- Senate Committee on Environment and Public Works. (2021, Dec 8). *Environment and Public Works*. Congress.gov. <https://www.congress.gov/bill/117thcongress/senatebill/2372#:~:text=This%20bill%20provides%20funding%20for,conservation%20education%20and%20recreation%20projects>
- Texas Legislative Budget Board. (2018). *Sporting Goods Sale tax Summary*. Austin: Texas Legislative Budget Board.
- Texas Legislative Budget Board Staff. (2016). *Sporting Goods Sales Tax Allocation*. Austin: Texas Legislative Budget Board Staff.
- The National Caucus of Environmental Legislators. (n.d.). *Conservation Funding*. The National Caucus of Environmental Legislators. <https://www.ncelenviro.org/resources/conservation-funding-policy-options/>
- The Wildlife Society. (2017). *State and Tribal Wildlife Grant Program*. The Wildlife Society.
- Timmons, A. L. (2018). TOO MUCH OF A GOOD THING: OVERCROWDING AT AMERICA'S NATIONAL PARKS. *Notre Dame Law Review*.
- U.S. Department of Commerce. (2021, November 9). *Outdoor Recreation*. Bureau of Economic Analysis. <https://www.bea.gov/data/special-topics/outdoor-recreation>
- U.S. Fish and Wildlife Service. (n.d.). *State Wildlife Grants*. U.S. Fish and Wildlife Service. <https://www.fws.gov/program/state-wildlife-grants>
- U.S. Government Publishing Office. (2018). EXAMINING FUNDING NEEDS FOR WILDLIFE CONSERVATION, RECOVERY, AND MANAGEMENT. *HEARING BEFORE THE COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE ONE HUNDRED FIFTEENTH CONGRESS SECOND SESSION*. Washington DC: U.S. Government Publishing Office.
- Vincent, C.H., Comay, L.B., & Crafron, R.W. (2019, November 5). Federal Land Management Agencies' Mandatory Appropriations Accounts. *Congressional Research Service*, (R45994), 42.
- Virginia Legislative Information System. (2000). *HB 38 Tax on hunting, fishing and wildlife equipment*. Virginia Legislative Information System. <https://lis.virginia.gov/cgi-bin/legp604.exe?981+sum+HB38>
- Walls, M., Ashenfarb, M. (2021). Efficiency and Equity of an Outdoor Recreation Equipment Tax to Fund Public Lands. *Land Economics*.
- Washington Department of Fish and Wildlife. (2021). *Dingell-Johnson Act*. Washington Department of Fish and Wildlife. <https://wdfw.wa.gov/fishing/management/dingell-johnson>

THE PROCESS OF AND APPROACH TO ENERGY TECHNOLOGY INNOVATIONS

I-Lin Lin

Abstract

As the climate crisis accelerates, energy technology innovations will define many important industries for decades to come. Innovative energy technologies not only have the potential to reduce carbon emissions at scale but also have substantial economic opportunities; however, innovation efforts have been slow and insufficient. The U.S. government needs to adopt a robust strategy to encourage technological innovation breakthroughs in the private sector that serves national energy policy. This memo provides an overview of the mechanisms of energy technology innovation and offers three main recommendations for accelerating the rate of energy technology innovation.

The Process of Energy Technology Innovation

Energy technology innovation is defined as “the set of processes leading to new or improved energy technologies that can augment energy resources; enhance the quality of energy services; and reduce the economic, environmental, or political costs associated with energy supply and use” (Gallagher et al., 2006). Figure 1 illustrates the five essential components, including RD&D (research and development, demonstration), (niche) market formation, and diffusion (Gallagher et al., 2012; Grubler et al., 2012).

- R&D refers to knowledge generation from basic or fundamental research that develops new or improves existing knowledge.
- Demonstration refers to the construction of technology prototypes to demonstrate feasibility.
- Market formation (early commercialization, niche markets) is the effort to create, protect or support niches for innovations to enter the market.
- Diffusion is the widespread adoption of technological innovation throughout the market.

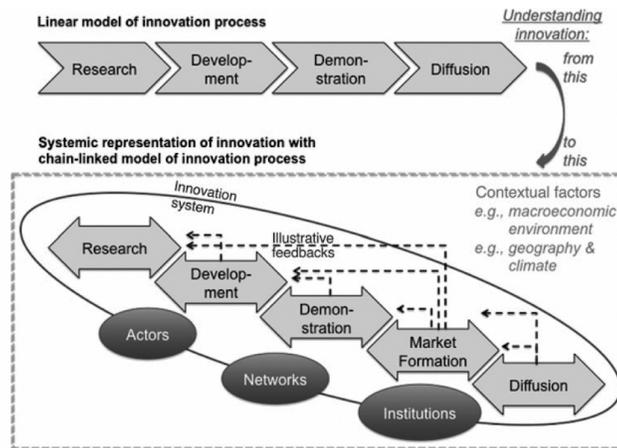


Figure 1. Innovation process (From Gallagher et al., 2012)

Transitioning from the traditional linear and sequential understanding of the innovation pipeline, energy technology innovation presents a systemic, chain-linked model with interdependent and interactive phases. The innovation system in the energy sector is a collective action involving dynamic knowledge feedback loops between stages and multiple actors and institutions, with the importance of actors and institutions varying over the life cycle of innovation. Contextual factors and corresponding incentive structure, such as geography, climate, and government policy that stimulates demand and supply, influence innovation processes (Gallagher et al., 2012). The process of energy technology innovation has three distinct features (Fri, 2006; Gallagher et al., 2012):

Technological innovation occurs primarily in the private sector, but government involvement is necessary: The energy innovation process is virtually a private sector activity, with the government playing a supporting but vital role. The public-good nature of knowledge generation, the high cost of facilities, the uncertainty of payoffs, and slow turnover time lead to underinvestment in R&D and discourage private firms from investing in certain areas. Therefore, government presence throughout the innovation pipeline is needed to overcome the private sector's lack of capital and unwillingness, mitigate the uncertainty and risks associated with new technologies, and avoid technological lock-in.

Combinations of technologies and the learning processes: Technological innovation in the energy sector is not linear and goes beyond R&D. It is typically incremental and cumulative, with the exception of radical and disruptive innovation breakthroughs, like solar photovoltaic. Innovation is assimilative, combining existing technologies and concepts from diverse sources. Knowledge spillovers (transfers) between various sectors, fields, and countries are essential to facilitate growth and productivity, though the effect is constrained by geographic factors. Furthermore, the actors across the stages are responsive to experience and adaptive to changing conditions. The learning process is the collective effort of producers (learning-by-doing) and end-users (learning-by-using), which are critical to creating new technologies, improving technological performance, and reducing costs.

Economies of scale: Large production can improve payoffs to investments in standardization and automation and may achieve cost reduction. Economies of scale can occur at different levels, including the unit level of technology, manufacturing plants, and the industry level. In addition to consistent and stable policies that stimulate market demands, such as subsidies or public procurements, technology standardization is also an important factor.

Approach

Research identifies the drivers for innovation as new knowledge, knowledge depreciation, economies of scale, sectoral linkages and spillovers, and increasing returns (Gallagher et al., 2012). A series of barriers also exist that prevent R&D from successfully progressing to demonstration, and then to diffusion, which is referred to as the "valley of death" (Gallagher et al., 2006). Governments can utilize various policies to shape behavior and enable technological innovation to achieve a pace and scale that can address climate change. The public policy goals are to induce technological innovations in the private sector that serve national energy policy, remove market barriers, and support the entry of new technologies. The following highlights three main recommendations to accelerate the rate of energy technology innovations.

Approach 1: Technology-push innovation policies

Technology-push policies seek to increase the supply of novel technologies by reducing the private cost of R&D. Long-term public R&D expenditures, such as government-sponsored R&D or tax credits for R&D investment, are essential for the creation of new technology because it has high direct returns and can encourage private investment (Pereira, 2001). However, increasing R&D funding alone will yield limited impact. Governments can accelerate the rate of energy technology innovation by supporting the enhancement or building of innovative infrastructure, as incumbent energy entities usually show reluctance to overhaul existing infrastructure. Policies that also boost innovation supply include intellectual property protection, laboratory and testing infrastructure, cross-sectoral collaboration, training and skills development, enhancing the capacity for formal and informal knowledge exchange, technology road maps, and financial incentives (Gallagher et al., 2012).

Approach 2: Demand-pull innovation policies

Demand-pull policies seek to change market conditions, steer the actors to invest in specific innovations to satisfy unfulfilled needs, and make adopters receptive to new technological solutions (Nemet, 2009). That is, the pull policies create or shape early markets for emerging technologies and help promising technologies achieve economies of scale and maturity for widespread market diffusion. In particular, the diffusion stage faces obstacles

such as transaction costs, market failures like underpricing environmental externalities, the proprietary nature of technology, and resistance and inertia.

Policies that bolster the demand for innovation include demonstration projects, public procurement, and market niche creation. The most direct path for the government to create the first market is targeting public procurement, which will embolden private actors to scale up the technology and produce a self-sustaining market. The federal government can also create the initial market by sponsoring competitions that efficiently mobilize private entities to invest in new technology. The government can also intervene using market incentives such as environmental taxes, feed-in tariffs, technology portfolio standards, and regulations (Gallagher et al., 2012). Adopting demand-pull policies will require cross-agency coordination and a coherent strategy.

Approach 3: Innovation through regulation

Stringent performance standards can play a valuable role in not only reducing emissions but also spurring technology innovation. In contrast, technology standards discourage innovation because there are no real financial incentives to adopt new technologies to exceed control targets (Fiorino & Ahluwalia, 2020). A performance standard is a policy tool that sets a meaningful and enforceable performance goal, such as a reduced emission rate, without specifying how it should be achieved (Fiorino & Ahluwalia, 2020).

First, the combination of stringency, flexibility, and predictability fosters an innovation-friendly environment. By granting discretion to the regulated organizations on technology choices, performance standards drive innovation because the actors would be encouraged to introduce novel technology to reduce costs through wider market diffusion. Moreover, when complemented by implementation and enforcement, performance standards are more likely to sustain and effectively stimulate innovation. Last, high monitoring and verification capabilities are required because the performance standard provides less prescription and allows greater discretion. However, emission trading is considered a practical tool because of the enhanced capability of continuous emission monitoring.

Conclusion

Shepherding technology innovation from conception to commercialization will require holistic policy designs that encompass the complete innovation lifecycle instead of focusing on isolating components. Additionally, the government can create a portfolio of policies that complement each other. For example, technology-push and demand-pull policies are complements instead of substitutes, and performance standards are found to work well with market-based incentives. Last, to facilitate a technology-inducing environment, the government needs to ensure the alignment of incentives within and across the innovation system(s), as well as the consistency and stability between regulatory and institutional innovation environments.

References

- Fiorino, D. J., & Ahluwalia, M. (2020). Regulating by performance, not prescription: the use of performance standards in environmental policy. In *Handbook of US Environmental Policy* (pp. 217-230). Edward Elgar Publishing.
- Fri, R. W. (2006). From Energy Wish Lists to Technological Realities. *Issues in Science and Technology*, 23(1), 63-68.
- Grubler, A., Aguayo, F., Gallagher, K., Hekkert, M., Jiang, K., Mytelka, L., . . . Srivastava, L. (2012). Policies for the Energy Technology Innovation System (ETIS). In Global Energy Assessment Writing Team (Author), *Global Energy Assessment: Toward a Sustainable Future* (pp. 1665-1744). Cambridge: Cambridge University Press. oi:10.1017/CBO9780511793677.030
- Gallagher, K. S., Grubler, A., Kuhl, L., Nemet, G., & Wilson, C. (2012). The energy technology innovation system. *Annual review of environment and resources*, 37, 137-162.
- Gallagher, K. S., Holdren, J. P., & Sagar, A. D. (2006). Energy-technology innovation. *Annu. Rev. Environ. Resour.*, 31, 193-237.
- Nemet, G. F. (2009). Demand-pull, technology-push, and government-led incentives for non-incremental technical change. *Research policy*, 38(5), 700-709.
- Pereira, A. M. (2001). On the effects of public investment on private investment: what crowds in what?. *Public Finance Review*, 29(1), 3-2

GENDER POLICY

REVIEWING THE UNIFORM CODE OF MILITARY JUSTICE IN SEX CRIME POLICIES

Sarah Bartholomew

Abstract

The Sexual Assault Prevention and Response Offices (SAPRO) within the Pentagon remain the cornerstone of policy creation regarding offenders and victims of sex crimes in the military. Unfortunately, the military houses a culture which, actively and passively, permits attitudes and behaviors that erode the resilience, resolve, and strength of its service members. SAPRO and military leadership face weakened mission readiness, distrust in leadership, and disorder due to an increase in sex crimes and inadequate related training and legal protection. This article summarizes military sex crime trends, identifies its causes, and explains the breadth of its consequences. The article will also briefly discuss proposed solutions and related policy goals.

Introduction

Despite decades of research, misconceptions about sexual violence in the military remain. Pentagon officials and advocacy groups remain in disagreement about whether sexual assaults are isolated instances of violence or if these actions represent a trend in certain environments (such as on bases or in military occupational specialties). In the face of disagreement over data implications, new policies and programs are being implemented, including a year-long pilot program introduced in 2021 (Army.mil). The factors associated with the trend of sexual violence enumerated below, illustrate the present risk for female service members, limited legal education for victims, and problematic protections for offenders.

Symptoms

Research and Initiatives

The number of sexual assault reports has increased annually, across bases and branches, leading to concern regarding the efficacy of Sexual Assault Prevention and Response (SAPR) training and unit climates (Sapr.mil, 2021). Some military leaders claim the increase in reports indicates an increase in confidence in the legal system. However, as federal research and civilian scholarship indicate, this is not a leading factor. Despite the military size increase, the percentage of female service members remains relatively the same, but the population of victims continues to grow (Military OneSource, 2021; Sapr.mil, 2021). As of July 2021, “1 in 16 women in the military have experienced sexual assault, and 1 in 4 have experienced sexual harassment” (Acosta, 2021). Female service members are more likely to encounter repeated, unwarranted attempts to establish romantic or sexual relationships, as well as inappropriate sexual comments about their appearance. In most instances, the unwanted attention comes from enlisted male soldiers, who make up about 81 percent of the military (Calkins et.al, 2021). This percentage increases based on combat job category (infantry, explosive ordnance disposal, field artillery, cavalry, air defense artillery, equipment maintenance and repair, and Corps of Engineers) (Diversity.Defense.gov, n.d).

The aforementioned pilot program’s goal is to promote awareness of the reporting process and protections for victims (Army Public Affairs, 2021). However, despite research identifying the most at-risk military bases, pilot programs have not been introduced to any of the at-risk bases. The female soldiers stationed at Fort Hood and Fort Bliss face the highest risk of sexual assault, with the risk to those at Ford Hood nearly a third higher than the average risk faced by all women in the Army (Miriam, 2021). Fort Campbell and Fort Carson are also high-risk installations, but neither bases are sites for the pilot program (Matthews, 2021). This suggests the findings at installations will not be representative of the conditions of high-risk installations. At worst, the new recommendations will fall short, and soldiers will remain vulnerable.

Further exacerbating the issues within the workplace and barracks is the anonymity afforded to offenders. Anonymity is dangerous for all service members, especially high-risk soldiers. There is protection for offenders, as they are not mandated to disclose criminal history. This places the burden of relocation on victims. Unit-level leadership may be aware of the crimes, but also may maintain positive relationships with offenders and dismiss past or present offenses committed by the offender or mischaracterize the nature of a crime so as to avoid doling

out a penalty that is appropriate. This is seen in the case of Sergeant First Class Gregory McQueen, who formed and operated a prostitution ring in Fort Hood, Texas (Nestel, 2017). SFC McQueen was his battalion's SHARP coordinator. After he was convicted, he was removed from his leadership position in SHARP, not for abusing his authority and coercing young soldiers into sexual activity, but for being "unorganized" and seemingly not caring "about the mission of training soldiers on SHARP issues" (Nestel, 2017). The skirting of the legal system makes criminals appear less violent and perpetuates a climate accepting of sexual violence. It is crucial to thoroughly investigate why these behaviors persist and to what degree military leadership plays a role.

Legal Support

In an audit conducted by the Attorney General of the Department of Defense (DoD), it was found that in 77 of 82 cases, officials did not ask victims, or did not document that they asked victims, about their preference for prosecution (Inspector General, 2019). By restricting access to the provision of prosecutorial rights, victims were unaware their experiences qualified for a trial. It is possible victims were dismissed, leading them to believe their case was not worth pursuing. When legal options are not presented, proper investigations may not be carried out, leaving offenders unpenalized. Many soldiers are unaware of their legal rights, and company-level leaders, who have the knowledge and responsibility to educate victims, are not providing the necessary support to victims.

Consequences: For Victims

After surviving sexual assault or experiencing retaliation for filing a report, victims often feel betrayed by the military institution. Veterans feel that the military institution failed to prevent the sexual trauma from occurring, that it was difficult to report the experience, and that of those that did report, some experienced retaliation and demotion (Rosellini, 2017). Even perceived betrayal has left service members with thoughts of suicide, depression, and post-traumatic stress disorder symptoms (Bahraini et. al, 2016). Victims who lose faith in the military system may find they have little reason to abide by the law which failed them, and they may end up committing infractions that result in demotion.

The demoralizing impacts of sex crimes in the military led to a sharp decline in soldier retention. Exposure to sexual assault in the military doubled the odds that a service member would leave the military within 28 months of the incident. As of 2021, sexual assaults were associated with 2,000 more separations than would normally be expected, and another 8,000 separations were associated with sexual harassment (Morral, 2021). Moreover, victims find themselves at a disadvantage regarding the next steps when they do not report a sex crime. While they may pursue behavioral health or medical support on base, there is difficulty in securing continued assistance upon military separation for military sexual trauma; without a paper trail or witness testimony, victims cannot receive financial support to pursue therapy or medical aid. This leaves victims, in or out of the military, without support, and waning hope for what comes next.

Consequences: For Offenders

When promoted or relocated for duty, offenders further spread their behaviors and can recruit subordinates to engage in their toxic behavior, such as in the case of Sgt. 1st Class Gregory McQueen. A community forms around inexcusable behavior, and when unit leadership is tasked with charging a soldier for sexual crimes, judgments form. Lower rates of convictions can skew the statistics surrounding sexual assault in the military and lead to misinformation surrounding an important issue.

The convicted aggressors who face dismissal from the military encounter multiple categories of discharge: honorable, general under honorable conditions, other than honorable, bad conduct discharge, and dishonorable discharge. The second to most incriminating charge is issued by special or general court-martial, but this discharge is not always inquired about by civilian employers or job applications. As such, a service member can receive an undisclosed criminal conviction, whereas civilian offenders of the same crime would be directly affected by way of their background check. Lack of repercussions is another way offenders benefit from lack of prosecution, yet it is also a cause of the issue. If potential offenders are aware they can have sustained careers after committing sex crimes, there is limited fear of consequences for their actions. As a result, cyclical patterns of offenses can form and even continue past one's time in service.

Causes: Within the Military

Further exacerbating the issue is the irregular and disproportionate allotment of attention and resources to the issue from the military at large. Annual SHARP training does not employ best practices, as it focuses on increasing awareness of the issue rather than building skills. Second, there are no professionals—military or civilians—tasked with implementing and assessing SHARP prevention training or the local success of policy measures (Acosta et. al, 2021). Third, fear of retaliation discourages victims from reporting sex crimes, which allows perpetrators to remain unpunished and at will to repeat their behavior. Soldiers tend to believe that retaliation will be at its highest when an official report is filed (Farris et. al, 2021). However, silence does not inhibit retaliation; a victim remains at risk if an offender feels threatened by the possibility of victim reporting. A culture of fear leaves the at-risk population at a greater risk of vulnerability and signals the need for immediate prioritization of military training in SHARP-related issues.

Causes: The Military and Civilian World

With a focus on mission readiness, the military is less inclined to pause and restructure its operational procedures to best promote the health and wellness of soldiers – even during peacetime status. It presents as ignoring a persistent issue, which further allows the issue to spread as soldiers relocate. Further, with the military operating predominantly outside the average civilian’s awareness, there is confusion about the prevalence of sexual assault. As many as 81 percent of Americans consider sexual assault in the military “an extremely or very important issue,” but the same population denies that the issue of sexual assault “is a bigger problem in the military than outside it” (Drake, 2013). With most of the civilian population drawing comparisons between military and civilian trends in sex crimes, it is clear there is a lack of understanding of how drastically different environments, cultures, and gender imbalances impact the rate and nature of sex crimes. With a poorly informed public and the military focused on mission readiness, the necessary pressure to create change is irregular, and progressive policy is slow to form. Sexual harassment was not a designated crime in the military until 2022, and measures to protect those who report crimes have only been in place since 2019 (Shane III, 2019). Policy changes have been instrumental, but additional solutions are necessary in order to increase awareness and efforts directed at this issue.

Proposed Solutions and Policy Goals

Military leaders and on-base providers should be trained to notice changes in behaviors and mannerisms that may be expressed by victims, such as previously successful soldiers now approaching demotion, seeming withdrawn, or seeking behavioral health support but do not seem to be healing within their environment. It is vital for leaders to intervene and understand the climate of their unit in order to foster a respectful work environment for all. Although leaders may not have the same training as SHARP representatives, leaders spend far more time with their service members and will be able to make connections with the appropriate support.

It is also imperative officials informing policy actively reduce ambiguity in military policy. This gives service members the opportunity to make informed decisions and receive a fair judicial process. To support informed policymaking, third-party research organizations need consistent funding to conduct expansive sociological studies of the climate within the military, such as large-scale attitudinal research. Granting researchers the opportunity to immerse themselves in military life to review legal action and training efficacy in real time is paramount. Perhaps from these studies, behavioral training may become more culture-specific and simplified to be easily digested and discussed.

Lastly, education in military justice ought to be provided and paired with stronger enforcement mechanisms for violations of military law. Recruits, both enlisted and commissioned, should be well-versed in punitive measures and legal resources. Just as there is onboarding training for installation services and family support systems, all service members should be made aware of their rights and protections, so that legal jargon will not constitute a barrier once a service member needs to seek assistance. As much emphasis is placed on having an effective military, such emphasis and support should be dedicated to the quality of life for its service members. Continued advocacy is essential and will contribute to mission readiness and service support when needed most.

References

- Acosta, J. (2021, July 19). *Sexual Assault, Harassment Likely to Persist in U.S. Military Without Bold Action*. Rand.org. <https://www.rand.org/news/press/2021/07/19.html>
- Acosta, J., et al. (2021). *Countering Sexual Assault and Sexual Harassment in the U.S. Military*. Rand.org https://www.rand.org/pubs/research_reports/RRA1318-1.html
- Appendix B: *Statistical Data on Sexual Assault*. U.S. Department of Defense, 2020, https://www.sapr.mil/sites/default/files/Appendix_B_Statistical_Data_On_Sexual_Assault_FY2020.pdf
- Bahraini, N., Matarazzo, B. Monteith, L., Smith, C. & Soberay, K. A. (2016). Perceptions of Institutional Betrayal Predict Suicidal Self-Directed Violence Among Veterans Exposed to Military Sexual Trauma. *Journal of Clinical Psychology*, 72(7), 1-13.
- Calkins, A. et al. (2021, August 2). *Sexual Harassment and Gender Discrimination in the Active-Component Army*. Rand.org. https://www.rand.org/pubs/research_reports/RRA1385-1.html
- Congressional Research Service. (2021, February 26). *Military Sexual Assault: A Framework for Congressional Oversight*. Crsreports.congress.gov. <https://crsreports.congress.gov/product/pdf/R/R44944/6>
- Farris, C., et al. (2021, March 29). *Perceived Retaliation Against Military Sexual Assault Victims*. Rand.org. https://www.rand.org/pubs/research_reports/RR2380.html
- H.R.3224 - I Am Vanessa Guillén Act of 2021. H.R.3224 - I am Vanessa Guillén Act of 2021.
- Inspector General. (2019, March 20). *Audit of DoD Efforts to Consult with Victims of Sexual Assault Committed by Military Personnel in the United States Regarding the Victim's Preference for Prosecution*. U.S. Department of Defense, <https://permanent.fdlp.gov/gpo153689/DODIG-2019-064.PDF>
- Matthews, M., et al. (2021, June 18). *Sexual Assault and Sexual Harassment in the U.S. Army*. Rand.org. https://www.rand.org/pubs/research_briefs/RBA1013-1.html
- Matthews, M. (2021, June 18). *Risk of Sexual Assault in Army Varies Widely Across Bases, Units, and Occupational Specialties*. Rand.org. <https://www.rand.org/news/press/2021/06/18.html>
- Military One Source. (n.d.). *Military Community Demographics*. <https://www.google.com/url?q=https://www.militaryonesource.mil/data-research-and-statistics/military-communitydemographics/&sa=D&source=docs&ust=1676502723902839&usg=AOvVaw0lC8xJuGK51xb848Z3RbZ1>
- Morral, A. (2021, February 8). *Odds of Leaving Military Double After Sexual Assault*. Rand.org. <https://www.rand.org/news/press/2021/02/08.html>
- Nestel, M. (2017, April 14). *Inside Fort Hood's Prostitution Ring*. TheDailyBeast. <https://www.thedailybeast.com/inside-fort-hoods-prostitution-ring>
- Rosellini, A. J., Street, A. E., Ursano, R. J., Chiu, W. T., Heeringa, S. G., Monahan, J., Naifeh, J. A., Petukhova, M. V., Reis, B. Y., Sampson, N. A., Bliese, P. D., Stein, M. B., Zaslavsky, A. M., & Kessler, R. C. (2017). Sexual Assault Victimization and Mental Health Treatment, Suicide Attempts, and Career Outcomes Among Women in the US Army. *American Journal of Public Health*, 107(5), 732-739.
- “S.1495 - Combating Military Sexual Assault Act.” Congress.gov, <https://www.congress.gov/bill/116th-congress/senate-bill/1495>
- Shane III, L. (2019, May 2). *Defense Department to Make Sexual Harassment a Crime*. MilitaryTimes.com. <https://www.militarytimes.com/news/pentagon-congress/2019/05/02/defense-department-to-make-sexual-harassment-a-crime/>
- Total Force Military Demographics (n.d.). Office of Diversity Management and Equal Opportunity, <https://diversity.defense.gov/LinkClick.aspx?fileticket=gxMVqhkaHh8=&portalid=51>
- U.S. Army Public Affairs. (2021, October 6). *Army Launches Fusion Directorate Pilot Designed to Improve Services for Sexual Assault Victims: Six Installations and the Army Reserve Will Participate in the Year-Long Pilot*. Army. <https://www.army.mil/article/250941>

THE EFFECT OF PERPETRATOR TREATMENT PROGRAMS ON REDUCING INTIMATE PARTNER VIOLENCE RECIDIVISM

Melissa Kilmer

Abstract

Perpetrator treatment programs have been a commonly proposed method to reduce Intimate Partner Violence (IPV) recidivism in the U.S. However, approaches and implementation of such treatments can vary greatly program to program, leading to differences in program effectiveness. Given the high prevalence of IPV in the United States, it is crucial both scholars and policymakers implement viable strategies to reduce IPV recidivism. The present article provides a critical review of existing literature on the effectiveness of various treatment types in reducing IPV recidivism among perpetrators. This article assesses the current state of literature on this topic and identifies gaps that have not yet been examined. Methodological issues such as sampling, operationalization of key variables, and discrepancies in program implementation are highlighted as major concerns within this area of research. Recommendations are offered to advance discussions of IPV treatment programs.

Introduction

The Center for Disease Control and Prevention (CDC) defines intimate partner violence (IPV) as physical violence, sexual violence, or stalking by a former or current intimate partner. The National Intimate Partner and Sexual Violence Survey (NISVS) estimates that approximately 41% of U.S. women and 26% of U.S. men have experienced some form of IPV during their lifetime (CDC, 2022). Although individuals of all demographics and identities experience IPV, women are disproportionately affected (Miller & McCaw, 2019). Moreover, IPV has high rates of recidivism among perpetrators, leaving survivors vulnerable to repeated abuse (Stover, 2005).

Perpetrator treatment programs have become a common solution in attempts to lower the prevalence of IPV-related recidivism in the U.S. Although programs utilize varying methodologies, all programs share the same goal: provide treatment to previous perpetrators of IPV and reduce the likelihood of recidivism. This paper offers a thorough review of the current literature on IPV treatment programs. Based on existing research in the field, future directions and recommendations for both policy and research are offered to discuss the effectiveness of these programs in reducing recidivism.

Common IPV Treatment Programs

Over the last few decades, scholars and practitioners have aimed to develop IPV intervention programs to reduce recidivism among IPV perpetrators (Day et al., 2009). Advocacy movements for the protection of women and children have heightened the focus on such interventions (Chalk, 2000; Gondolf, 2002). A wide range of treatment programs have been studied and implemented around the world. This review will summarize findings on three commonly used programs: Psycho-Educational, Cognitive and Emotional Therapy, and Goal-Directed Treatment and Solution-Focused Brief Therapy (SFBT). Treatments incorporating the Risk-Needs-Responsivity (RNR) framework will also be discussed as an individualized approach that may increase the effectiveness of such programs.

Overall, programs vary greatly in their core understandings of IPV and in their attempts to treat perpetrators (Day et al., 2009). Despite increasing interest and advocacy for IPV perpetrator treatment programs among researchers and policymakers alike, research has not consistently found these programs significantly reduce IPV recidivism (Babcock et al., 2004; Kingsnorth, 2006). Rather, studies have been inconsistent in their findings, leading scholars, and policymakers to question program effectiveness (Day et al., 2009).

Psycho-Educational Treatment Programs

Psycho-educational treatment programs focus on illuminating the issue of masculinity and gendered power in society (Day et al., 2009). They are grounded in the Duluth Model, which emphasizes educating perpetrators on gendered power and control imbalances in our society. Incorporating the Duluth Model with

psychoeducation attempts to teach perpetrators about the presence of gendered power imbalances in society, such as physical and sexual encounters or everyday interactions between men and other genders. Through further education, the program aims to give men the skills to change the way they approach interactions with female partners.

Given the gendered nature of this model, psycho-educational treatment programs are almost exclusively offered to men with female partners – many of whom have been incarcerated due to IPV-related crimes. Group sessions are used to discuss behaviors, attitudes, and common control tactics used by perpetrators in an attempt to demonstrate the abusive nature of past actions. Awareness of power imbalances between men and their female partners in past actions can then promote more positive communication and behavior moving forward (Tollefson & Gross, 2008). However, critics of this treatment program claim it is too confrontational in shaming men for what they did wrong (Gondolf, 2002). These critics argue that such a direct approach may make men less likely to participate or take the program seriously if they feel shamed for their past actions. Nevertheless, psycho-educational treatment models remain popular today, continuing to educate men on behaviors that may lie within a framework of gendered imbalance.

Some studies on psycho-educational programs have found statistically significant reductions in the likelihood of reoffending (Gondolf, 2004; Hasisi et al., 2016; Taylor, et al., 2001). In one court-mandated Duluth intervention program, police involvement for domestic violence was significantly reduced among those who completed the treatment (Babcock and Steiner, 1999). Herman and colleagues (2014) found that physical and emotional aggression measures were significantly lower immediately after the intervention; however, these results did not hold up after a 6-month follow-up period. About one-third of perpetrators from the sample reoffended at some point after program completion, suggesting that long-term impacts on recidivism may not be sustained (Herman et al., 2014). Still, others have found no significant effects between psycho-educational programs and recidivism rates of IPV (Feder & Dugan, 2002; Gordon & Moriarty, 2003; Haggård et al., 2017). For example, studies examining the Integrated Domestic Abuse Program (IDAP) and the Minnesota Domestic Violence Intervention Pilot Program (DVIPP) both found nonsignificant reductions in recidivism rates between treated and non-treated groups (Haggård et al., 2017; McNeeley, 2021). Thus, research on the psycho-educational approach has produced conflicting findings, lowering confidence among scholars in such programs' effectiveness once the literature is looked at as a whole.

Cognitive and Emotional Therapies

Cognitive behavioral therapy (CBT) aims to address individual patterns of thinking and behavior that may contribute to IPV. This treatment program utilizes a personal deficit model that frames IPV as a behavioral problem related to a lack of skills or self-control (Pascual-Leone et al., 2011). CBT focuses on improving emotional intelligence (e.g., awareness and regulation of emotions) and problematic behaviors via tools such as anger management and skills-based programs. However, programs have been criticized for lacking in psychoeducation, which teaches men why their behaviors may perpetuate gender imbalances in society (Day et al., 2009). Emotion-focused therapy (EFT) is a similar form of individualized treatment, which attempts to understand how emotional issues may impact recidivism. However, this approach focuses more on early life experiences that may have affected emotional functioning (e.g., abuse as a child) rather than current behavioral issues (Pascual-Leone et al., 2011). The goal is to help individuals address traumatic experiences from their childhood in order to better understand and improve their behaviors today.

Research on CBT has found inconsistent effects on recidivism. Some studies have found significant reductions in recidivism rates among those who completed CBT treatment programs (Morrel et al., 2003; Nasset et al., 2020). Other studies have failed to find significant findings (Babcock et al., 2004; Dunford, 2000; Waller, 2016). Research has also explored treatment effects of a variety of CBT-related programs. For instance, CBT programs incorporating substance abuse treatments have been found to be more effective (Fernández-Montalvo, et al., 2019; Satyanarayana et al., 2016; Taft et al., 2016). However, another study found that anger management interventions did not have a significant effect on recidivism rates (Howells et al., 2005). Future studies should explore which components of CBT contribute to lower recidivism rates among those who engage in IPV. Furthermore, EFT and similar emotion-focused group psychotherapy programs have also proven to be effective (Pascual-Leone et al., 2011). In one study, a treatment group of incarcerated men with a history of IPV had

significantly fewer assault and/or sexual assault offenses when compared to the untreated group 8 months post-study (Pascual-Leone et al., 2011). Since results have differed based on varying aspects of CBT and EFT, more research is needed to determine the extent of each program's efficacy.

Goal-Directed Treatment and Solution-Focused Brief Therapy

Both goal-directed treatment and Solution-Focused Brief Therapy (SFBT) programs are closely related in their shared focus on participants setting attainable goals. Goal-directed treatment programs emphasize the use of goal setting to provide participants with an object to work toward (Lee, et al., 2007). These goals are individually determined and utilized to gauge progress in solving problems that may increase propensity to reoffend. SFBT is similar in that it holds perpetrators accountable to creating solutions for problems that may have brought them to the program. Notably, SFBT concentrates on the participant's strengths and skills rather than focusing on their deficits (i.e. compared to CBT) (Bowen, et al., 2019). One important component of these treatment programs is that they require frequent positive feedback to help offenders track their progress. Such feedback is important in helping clients understand if they are progressing toward their goals (Lee, et al., 2007).

There is currently little empirical work on both goal-directed treatment and SFBT; however, both show promise as effective treatment programs. One study examining the usage of a solution-focused, goal-directed treatment program found that both goal specificity and greater confidence among participants in working toward their goals were related to lower recidivism rates (Lee, et al., 2007). More research is necessary to determine the benefits of goal-directed techniques and SFBT in IPV perpetrator treatment programs.

Including Risk-Needs-Responsivity in Treatment Programs

One approach to improving treatment programs is the inclusion of Risk-Needs-Responsivity (RNR) principles. RNR assesses individual risk factors and needs to provide a personalized treatment method. First, the risk principle states that criminal behavior can be predicted by assessing risk factors that may increase an individual's propensity to commit crime. The needs principle highlights that criminogenic needs must be targeted to reduce the individual's likelihood of re-offending in the future. The responsivity principle then offers potential modes of treatment for the offender (Latessa & Schweitzer, 2016).

The recent inclusion of RNR principles in some treatment programs has shifted research focus to determine the efficacy of Risk-Needs-Responsivity (RNR) principles. One study by Stewart and colleagues (2014) found that establishing treatment programs with RNR principles had positive effects: program participation among male perpetrators significantly reduced attitudes that supported violence against women. A meta-analysis conducted by Travers and colleagues (2021) found that programs incorporating all three of the RNR principles resulted in overall significant effects on recidivism during follow-up periods of one year or less. Thus, this area of treatment is worthy of further exploration to determine the additional effects of such interventions.

Limitations and Future Directions

Context and Environment

Few studies have examined the variety of contexts in which these programs may be implemented (e.g., prisons, community settings, etc.). Recently, work examining the effectiveness of psycho-educational programs in correctional settings has identified factors related to prison climate and how they negatively impact program effects, including program facilitator turnover, security concerns, and a lack of face-to-face time with victims (McNeeley, 2021). Thus, it is important to consider the environment in which the program is being offered, as it may impact effectiveness.

Methodology and Implementation

Methodological concerns and study design issues have also weakened the overall generalizability of findings in this area. First, samples tend to be small and heterogeneous – limiting the extent to which conclusions can be generalized to larger populations (Lee, et al., 2007; Pascual-Leone et al., 2011). Furthermore, many studies do not utilize a fully randomized experimental design, which can limit the strength of the findings (Babcock & Steiner, 1999; Shepard, et al., 2002).

Differences in the measurement and operationalization of variables such as recidivism may impact the effect sizes of relationships among variables. For instance, while some researchers choose to use official arrest reports (Mills et al., 2019; Morrel et al., 2003; Stewart et al., 2014; Uken, et al., 2007), others may use perpetrator and survivor/batterer self-reports (Cunha et al., 2022; Herman et al., 2014; Nettet et al., 2020; Satyanarayana et al., 2016; Waller, 2016). Although both measures are often limited by underreporting, studies have shown that official records constitute only a small portion of actual spousal assault rates (Haggård et al., 2017; Stewart et al., 2014). Due to such differences in operationalization, cross-study comparisons must be made carefully (Travers et al., 2021). To ensure the most accurate assessments of IPV rates, researchers must attempt to combine both official reports and self-reports as operationalized measures of IPV. For example, in one program evaluation, Gondolf (2002) incorporated self-reports from both program participants and their partners via open-ended questions about survivors' quality of life and experiences of abuse. In combining these qualitative measures with other quantifiable measures of IPV, researchers were able to obtain a more robust measure of abuse rates.

An additional implementation concern is program drift. Hollin (1995) describes the concept of program drift as programs that are delivered in a different manner from which they were initially intended. This leaves room for variations to occur across programs over time (Day et al., 2009; Gordon & Moriarty, 2003). For instance, Day and colleagues (2009) observed differing administration of the Duluth Model in group discussion sessions among IPV perpetrators. Certain aspects (e.g., male privilege) were heavily emphasized in some groups, while not mentioned at all in others. These differences in program administration may have a serious impact on program effectiveness.

Another concern of these interventions is attrition rates. Since program participation is often mandated by court sentences, male participants frequently view attendance as punishment associated with their incarceration (Gondolf, 2002). A meta-analysis conducted by Karakurt and colleagues (2019) found that drop-out rates among IPV treatment programs vary between 3 percent to 41 percent. Drop-out rates have been linked to a variety of factors, including age and previous convictions. For instance, younger program participants with previous convictions were more likely to drop out of treatment programs than older participants without previous convictions (Cunha et al., 2022). Such drop-out rates could contribute to the discrepancy among findings, as greater rates of participation and completion among these treatment programs may provide better data on program effectiveness.

Diversity in Treatment Populations

Researchers' reliance on a "one-size-fits-all" approach has led to a limited understanding of how treatment programs affect specific groups of individuals (Travers et al., 2021). IPV interventions are often directed toward men who have harmed their female partners. However, IPV does not always fit into this gendered stereotype. In fact, research has found that IPV occurs within the LGBTQ+ community at rates equal to or higher than the heterosexual community (Messinger, 2011; Walters & Lippy, 2016). Yet, the majority of existing research on IPV treatment programs has been limited in their samples; many gender and sexual identities are overlooked in IPV research (Subirana-Malaret, et al., 2019). To date, the most common samples in IPV studies are heterosexual White males (Cunha et al., 2022; Nettet et al., 2020; Taft et al., 2016).

Some studies have found that program effects may also differ by race, although these differences have not been thoroughly explored in the existing literature. One systematic review has suggested that Black males experience higher rates of attrition from IPV treatment programs compared to White males (Waller, 2016). Thus, programs may have varying effects for those of varying identities. This differentiation should be considered in future research endeavors to provide the most effective treatment for all program participants.

Future research should utilize larger, more representative samples to ensure the generalizability of findings. Researchers should ensure that studies encompass a variety of gender, racial, and sexual identities (other than heterosexual, cis-gender White males) that are often overlooked in current studies (Travers et al., 2021). Specifically, researchers should ensure program effectiveness for minoritized groups as well to maximize benefits to both program participants and victims of IPV. Considering how IPV occurs more frequently among LGBTQ+ individuals, future research should prioritize this group in additional studies (Messinger, 2011; Walters & Lippy, 2016). Marginalized individuals may also experience inequitable access to these programs, as effective programs

may not be available to them based on their location or identity. However, the current literature does not provide a substantial understanding of how availability may differ and should thus be explored.

Policy Implications

Given the review of the literature and discussion of future directions, policy implications should be considered to maximize reductions in IPV recidivism. The research on IPV treatment programs has yielded inconsistent results; for this reason, policymakers and researchers alike should practice caution prior to endorsing treatment programs. The following policy recommendations are made to improve the use of IPV treatment programs in the U.S.

First, policymakers should look to research to guide effective policy solutions. Although some studies have endorsed commonly implemented treatment types, it is important that policies also account for current research. Programs must be thoroughly reviewed for their efficacy; likewise, policies must be continuously open to revisions to ensure the best practices among treatment programs (Dutton & Corvo, 2006). For instance, policymakers may advocate for emerging approaches, such as goal-directed treatment and RNR principles, that show promise as effective programs in reducing recidivism. New research in the field will help guide policymakers to more effective solutions, but only if policy allows for such revisions.

Second, state and federal policies should use more concise guidelines for providers of IPV treatment programs. Little guidance and enforcement of previously existing guidelines has resulted in program drift (Gordon & Moriarty, 2003). Given that many programs have neglected to adhere to suggested guidelines, policies may need to utilize stricter guidelines to ensure standardized, uniform program administration that is effective in reducing IPV recidivism (Gordon & Moriarty, 2003).

Third, practitioners should be cautious of overgeneralizing when advocating for IPV perpetrator treatment programs. Emerging evidence has found program effects may vary depending on individual identities (Waller, 2016). In fact, a “one size fits all” approach is not the most effective in reducing IPV recidivism for everyone. Thus, policymakers should be aware of incorporating diverse treatment programs tailored to a variety of identities, including differences in gender, sexual orientation, and race. Allowing treatments to take on a more individualistic approach and accounting for diversity among participants can maximize program effectiveness for all involved.

Conclusion

IPV is a significant problem that affects almost half of the U.S. population (CDC, 2022). In order to reduce IPV, it is crucial that policymakers and practitioners identify and implement the most effective treatment programs to rehabilitate IPV perpetrators. IPV recidivism is a serious problem that requires effective solutions. Programs that are ineffective in reducing IPV and recidivism waste time, money, and resources; more importantly, they put people at risk of experiencing further harm. Significant gains have been made regarding the effectiveness of IPV perpetrator treatment programs. However, further research must be prioritized to address limitations in the existing literature and provide policymakers with guidance on effective programs. Policymakers should allow research findings to guide them to policy solutions and consider the establishment of stricter program guidelines. Scholars should ensure a more inclusive research approach and consider a variety of identities in the success of IPV treatment programs. Together, scholars and policymakers can strengthen existing and future IPV perpetrator treatment programs to ensure strides are made to eradicate IPV in our society.

References

- Babcock, J.C. & Steiner, R. (1999). The relationship between treatment, incarceration, and recidivism of battering: A program evaluation of Seattle’s coordinated community response to domestic violence. *Journal of Family Psychology*, 13 (1), 46-59. <https://doi.org/10.1037/0893-3200.13.1.46>
- Babcock, J. C., Green, C. E., & Robie, C. (2004). Does batterers’ treatment work? A meta-analytic review of domestic violence treatment. *Clinical Psychology Review*, 23(8), 1023-1053. <https://doi.org/10.1016/j.cpr.2002.07.001>
- Bowen, E., Walker, K., & Holdsworth, E. (2019). Applying a strengths-based psychoeducational model of rehabilitation to the treatment of intimate partner violence: Program theory and logic model. *International*

- Journal of Offender Therapy and Comparative Criminology*, 63(3), 500-517.
<https://doi.org/10.1177/0306624X18798223>
- Centers for Disease Control and Prevention. (2022, October 11). Fast facts: Preventing intimate partner violence. Centers for Disease Control and Prevention. Retrieved November 4, 2022, from <https://www.cdc.gov/violenceprevention/intimatepartnerviolence/fastfact.html>
- Chalk, R. (2000). Assessing family violence interventions: Linking programs to research-based strategies. *Journal of Aggression, Maltreatment, & Trauma*, 4(1), 29-53. https://doi.org/10.1300/J146v04n01_03
- Cunha, O., Silva, A., Cruz, A. R., de Castro Rodrigues, A., Braga, T., & Gonçalves, R. A. (2022). Dropout among perpetrators of intimate partner violence attending an intervention program. *Psychology, Crime, & Law*, 1-19. <https://doi.org/10.1080/1068316X.2022.2030337>
- Day, A., Chung, D., O'Leary, P., & Carson, E. (2009). Programs for men who perpetrate domestic violence: An examination of the issues underlying the effectiveness of intervention programs. *Journal of Family Violence*, 24(3), 203-212. <https://doi.org/10.1007/s10896-008-9221-4>
- Dunford, F. W. (2000). The San Diego Navy experiment: An assessment of interventions for men who assault their wives. *Journal of Consulting and Clinical Psychology*, 68(3), 468. <https://doi.org/10.1037/0022-006X.68.3.468>
- Dutton, D. G. & Corvo, K. (2006). Transforming a flawed policy: A call to revive psychology and science in domestic violence research and practice. *Aggression and Violent Behavior*, 11(5), 457-483. <https://doi.org/10.1016/j.avb.2006.01.007>
- Feder, L. & Dugan, L. (2002). A test of the efficacy of court-mandated counseling for domestic violence offenders: The Broward experiment. *Justice Quarterly*, 19(2), 343-375.
- Fernández-Montalvo, J., Arteaga, A., & López-Goñi, J. J. (2019). Treatment effectiveness of intimate partner violence perpetration among patients in a drug addiction program. *Psychology of Violence*, 9(2), 156-166. <https://doi.org/10.1037/vio0000184>
- Gondolf, E. W. (2002). Batterer intervention systems: Issues, outcomes, and recommendations. Sage.
- Gordon, J. A. & Moriarty, L. J. (2003). The effects of domestic violence batterer treatment on domestic violence recidivism: The Chesterfield County experience. *Criminal Justice and Behavior*, 30(1), 118-134. <https://doi.org/10.1177/009385480223916>
- Haggård, U., Freij, I., Danielsson, M., Wenander, D., & Långström, N. (2017). Effectiveness of the IDAP treatment program for male perpetrators of intimate partner violence: A controlled study of criminal recidivism. *Journal of Interpersonal Violence*, 32(7), 1027-1043. <https://doi.org/10.1177/0886260515586377>
- Hasisi, B., Shoham, E., Weisburd, D., Haviv, N., & Zelig, A. (2016). The “care package,” prison domestic violence programs, and recidivism: A quasi-experimental study. *Journal of Experimental Criminology*, 12(4), 563-586. <https://doi.org/10.1007/s11292-016-9266-y>
- Herman, K., Rotunda, R., Williamson, G., & Vodanovich, S. (2014). Outcomes from a Duluth model batterer intervention program at completion and long term follow-up. *Journal of Offender Rehabilitation*, 53(1), 1-18. <https://doi.org/10.1080/10509674.2013.861316>
- Hollin, C. R. (1995). The meaning and implications of “programme integrity”. In J. McGuire (Ed.), What works: Reducing reoffending: Guidelines from research and practice (pp. 195-208). John Wiley & Sons.
- Howells, K., Day, A., Williamson, P., Bubner, S., Jauncey, S., Parker, A., & Heseltine, K. (2005) Brief anger management programs with offenders: Outcomes and predictors of change. *Journal of Forensic Psychiatry and Psychology*, 16(2), 296-311. <https://doi.org/10.1080/14789940500096099>
- Karakurt, G., Koç, E., Çetinsaya, E. E., Ayluçtarhan, Z., & Bolen, S. (2019). Meta-analysis and systematic review for the treatment of perpetrators of intimate partner violence. *Neuroscience & Biobehavioral Reviews*, 105, 220-230.
- Kingsnorth, R. (2006). Intimate partner violence: Predictors of recidivism in a sample of arrestees. *Violence Against Women*, 12(10), 917-935. <https://doi.org/10.1177/1077801206293081>
- Latessa, E. J. & Schweitzer, M. (2016). Improving correctional supervision. In T.G. Blomberg, J.M. Brancalle, K.M. Beaver, & W.D. Bales (Eds.), *Advancing Criminology & Criminal Justice Policy* (pp. 237-248). Routledge.

- Lee, M. Y., Uken, A., & Sebold, J. (2007). Role of self-determined goals in predicting recidivism in domestic violence offenders. *Research on Social Work Practice, 17*(1), 30-41. <https://doi.org/10.1177/1049731506294375>
- McNeeley, S. (2021). Effectiveness of a prison-based treatment program for male perpetrators of intimate partner violence: A quasi-experimental study of criminal recidivism. *Journal of Interpersonal Violence, 36*(21-22), 10405-10430. <https://doi.org/10.1177/0886260519885641>
- Messinger, A. M. (2011). Invisible victims: Same-sex IPV in the national violence against women survey. *Journal of Interpersonal Violence, 26*(11), 2228-2243. <https://doi.org/10.1177/0886260510383023>
- Miller, E. & McCaw, B. (2019). Intimate partner violence. *New England Journal of Medicine, 380*(9), 850-857.
- Mills, L. G., Barocas, B., Butters, R. P., & Ariel, B. (2019). A randomized controlled trial of restorative justice-informed treatment for domestic violence crimes. *Nature Human Behaviour, 3*(12), 1284-1294. <https://doi.org/10.1038/s41562-019-0724-1>
- Morrel, T. M., Elliott, J. D., Murphy, C. M., & Taft, C. T. (2003). Cognitive behavioral and supportive group treatments for partner-violent men. *Behavior Therapy, 34*(1), 77-95. [https://doi.org/10.1016/S0005-7894\(03\)80023-0](https://doi.org/10.1016/S0005-7894(03)80023-0)
- Nesset, M. B., Lara-Cabrera, M. L., Bjørngaard, J. H., Whittington, R., & Palmstierna, T. (2020). Cognitive behavioural group therapy versus mindfulness-based stress reduction group therapy for intimate partner violence: A randomized controlled trial. *BMC Psychiatry, 20*, 1-11. <https://doi.org/10.1186/s12888-020-02582-4>
- Pascual-Leone, A., Bierman, R., Arnold, R., & Stasiak, E. (2011). Emotion-focused therapy for incarcerated offenders of intimate partner violence: A 3-year outcome using a new whole-sample matching method. *Psychotherapy Research, 21*(3), 331-347. <https://doi.org/10.1080/10503307.2011.572092>
- Satyanarayana, V. A., Nattala, P., Selvam, S., Pradeep, J., Hebbani, S., Hegde, S., & Srinivasan, K. (2016). Integrated cognitive behavioral intervention reduces intimate partner violence among alcohol dependent men and improves mental health outcomes in their spouses: A clinic based randomized controlled trial from South India. *Journal of Substance Abuse treatment, 64*, 29-34. <https://doi.org/10.1016/j.jsat.2016.02.005>
- Shepard, M. F., Falk, D. R., & Elliott, B. A. (2002). Enhancing coordinated community responses to reduce recidivism in cases of domestic violence. *Journal of Interpersonal Violence, 17*(5), 551-569. <https://doi.org/10.1177/0886260502017005005>
- Stewart, L. A., Gabora, N., Kropp, P. R., & Lee, Z. (2014). Effectiveness of risk-needs-responsivity-based family violence programs with male offenders. *Journal of Family Violence, 29*(2), 151-164. <https://doi.org/10.1007/s10896-013-9575-0>
- Stover, C. S. (2005). Domestic violence research: What have we learned and where do we go from here? *Journal of Interpersonal Violence, 20*(4), 448-454. <https://doi.org/10.1177/0886260504267755>
- Subirana-Malaret, M., Gahagan, J., & Parker, R. (2019). Intersectionality and sex and gender-based analyses as promising approaches in addressing intimate partner violence treatment programs among LGBT couples: A scoping review. *Cogent Social Sciences, 5*(1), 1644982. <https://doi.org/10.1080/23311886.2019.1644982>
- Taft, C. T., Macdonald, A., Creech, S. K., Monson, C. M., & Murphy, C. M. (2016). A randomized controlled clinical trial of the Strength at Home Men's Program for partner violence in military veterans. *The Journal of Clinical Psychiatry, 77*(9), 20066.
- Taylor, B. G., Davis, R. C., & Maxwell, C. D. (2001). The effects of a group batterer treatment program: A randomized experiment in Brooklyn. *Justice Quarterly, 18*(1), 171-201. <https://doi.org/10.1080/07418820100094861>
- Tollefson, D. R. & Gross, E. R. (2006). Predicting recidivism following participation in a treatment program for batterers. *Journal of Social Service Research, 32*(4), 39-62. https://doi.org/10.1300/J079v32n04_03
- Travers, Á., McDonagh, T., Cunningham, T., Armour, C., & Hansen, M. (2021). The effectiveness of interventions to prevent recidivism in perpetrators of intimate partner violence: A systematic review and meta-analysis. *Clinical Psychology Review, 84*, 101974. <https://doi.org/10.1016/j.cpr.2021.101974>

- Waller, B. (2016). Broken fixes: A systematic analysis of the effectiveness of modern and postmodern interventions utilized to decrease IPV perpetration among Black males remanded to treatment. *Aggression and Violent Behavior*, 27, 42-49. <https://doi.org/10.1016/j.avb.2016.02.003>
- Walters, M. L. & Lippy, C. (2016). Intimate partner violence in LGBT communities. *The Wiley handbook on the psychology of violence*, 695-714. <https://doi.org/10.1002/9781118303092.ch36>

SEPARATING MOTHERHOOD FROM WOMANHOOD IN THE STRUGGLE FOR CITIZENSHIP

Ingela Rundquist

Abstract

Equal rights are based on questions of citizenship. Who is a citizen, and what privileges do they enjoy? The founders of America intentionally excluded women, people of color, and anyone other than white, property-owning men from citizenship. As a foundation, this legal framework restricted citizenship and its privileges from most of the country and created an inherent tension in the struggle for equal rights. The inching expansion of citizenship required that the advocates fit their demands into the established structure. The Equal Rights Amendment (ERA) is one such attempt by women to equalize citizenship between men and women. The fight leading up to the ERA, and its ebbing presence through American history, is a story of how women have struggled throughout the ages to gain rights, grappling with the always-present idea of fundamental differences between men and women. The attempts to acknowledge and incorporate these differences resulted in a patchwork of approaches by varying leaders.

Womanhood, motherhood, and feminism are intrinsically intertwined. Motherhood, by definition, connects women to others and puts their meaning as individuals in murky territory. Liberals and conservatives alike have wielded the sword of motherhood to advance their causes. The question that arises is whether motherhood can be separated from womanhood. The fact that these two ideas are so intrinsically combined has made it harder for society to view women as full, rights-bearing citizens on the same level as men. This essay will discuss the efforts of women to gain rights and how the constant thread of centering motherhood both facilitated the expansion of rights for women and impeded their gaining of full citizenship.

Introduction: The Legal Standing of Women

Coverture—defined in common law as the idea that a woman is covered by her spouse—is the foundation by which the concept of two equal citizens exists (Dewolf, 2021). Under coverture, white women *were* citizens but did not have the fundamental rights granted to men. Coverture restricted a woman’s ability to access most legal rights and the ability to control her own body: “The emphasis on the self-governing individual wrapped in the notion of rights-bearing citizenship excluded women since the old law of domestic relations denied women self-possession of their own bodies” (Dewolf, 2021, p. 18). Self-determination in reproduction was never a concern, as motherhood was the central role of women. Even as some legal rights were extended to women, citizenship was still restricted.

This exaltation of motherhood meant the definition of a woman and the values she must encompass were “piety, purity, submissiveness, and domesticity. Put them all together and they spelled, mother, daughter, sister, wife-woman” (Welter, 1996, p. 151). Women were thought to be equal to men while fulfilling distinctly different roles and having fundamentally different rights (Gordon, 2002). The idea of separate citizenry and the centrality of motherhood begins here.

Voluntary Motherhood

Left out of the promise of full citizenship that the Reconstruction Amendments promised Black men, women sought new ways to increase their political power. Advocates for women's rights began to center their platform on motherhood but coupled it with reproductive control. This platform created a weapon that they could wield in the fight for more rights and was termed “voluntary motherhood.” (Gordon, 2002). According to Gordon, voluntary motherhood was revolutionary, both for its adoption of existing frameworks and the acknowledgment of a “strong connection between woman’s emancipation and their ability to control reproduction” (p. 8). This idea was a constant thread that would consistently tense in the coming decades.

Voluntary motherhood meant “women had the right to reject unwanted sex and could choose if and when they had children” (Thompson, 2022). Abolitionist Ezra Haywood identified voluntary motherhood as a potent weapon as “women’s Natural Right to ownership and control over her own body-self [was] a right inseparable

from Woman's intelligent existence" (Gordon, 2002, p. 62). In prescribing women agency and self-determination, this was a radical notion that simultaneously granted them social respectability and political standing through their role as mothers or potential mothers. The centering of reproductive determination was groundbreaking; centering motherhood further cemented the traditional assumption that motherhood was where their value and power originated.

Leaders of the movement embodied the contradiction themselves. Illustrated by suffragist Elizabeth Cady Stanton, who argued women had "the same human intellectual and spiritual endowment as men, and therefore deserved the same opportunities and rights to advance and develop," while simultaneously stating "womanhood is the primal fact, wifehood and motherhood its incidents" (Gordon, 2002, p. 62). Gordon continues, other leaders suggested that a woman who chose to opt out of motherhood was less than, "a woman who avoided motherhood had chosen a distinctly less noble path" (Gordon, 2002, p. 68).

Voluntary motherhood was a full-hearted adoption of a "cult of motherhood." If a woman's role was mothering her children, she had to be educated to produce well-informed citizens. Mothers were celebrated in society and put on a pedestal. Motherhood was leveraged to argue that more rights should be open to women *because* they were mothers and potential mothers, "far from debunking motherhood, voluntary motherhood advocates consistently continued the Victorian mystification and sentimentalization of the mother" (Gordon, 2002, p. 68).

The centering of traditional roles in voluntary motherhood made it easier for male allies to support suffrage because it did not pose much of a threat to the status quo. Fearful of ceding the limited power, proponents of voluntary motherhood did not entertain the idea of sharing parenting responsibilities. Furthermore, many leaders of the movements were privileged, well-off, and middle-class, and their positions of leveraging motherhood and domesticity had the consequence of ignoring working-class women (Gordon, 2002, p. 12).

Nineteenth-century women were correct in identifying sex and reproduction as a tool of their agency and self-determination. However, the promotion of motherhood may have harmed the ability of women to be seen as full citizens. The centering of motherhood raised questions about women's citizenship and rights that men never had to assume.

Suffrage

The suffragist movement picked up steam in the twentieth century. Feminists and suffragists, groups with distinct ideologies, unified around the shared goal of getting the vote. This unification was central to the passage of the Nineteenth Amendment, as "feminists' presence in the suffrage movement broadened its margins, while the suffrage campaign gave them a platform" (Cott, 1997, p. 37). Feminists were more likely to agitate for rights based on being human, a theory divorced from motherhood, while suffragists elevated the traditional role of women as mothers and women as a purifying source for society. The coalition with feminists broadened the coalition, but the suffragists' cornerstone remained "that women deserved the vote because of their sex" (Cott, 1997, p. 29).

In a society of inherently male structures and institutions, the suffragists may have found it necessary to adopt the language of their oppressors to make gains. Using the language around "the traditional ideas about the 'woman's sphere' for constructive purposes" limited the constraints on the suffragist coalition by adopting language more palatable to the general public (Dewolf, 2021). Enfranchising women would address social ills and ensure their children—primarily sons, were well-educated citizens. All were extensions of the roles they already fulfilled in the domestic spheres of their homes.

Feminists argued for a duality that embraced the differences between the genders while eliminating "prescribed gender roles" as articulated by Marie Jenney Howe, who proclaimed, "we intend to simply be ourselves. Not just our little female selves, but our whole big human selves" (Cott, 1997, p. 39). As the more radical group, feminists advocated for full economic rights and sexual autonomy. Still, the feminists, albeit temporarily, adopted the suffrage language and continued elevating society's assumptions and labels about women.

The focus on this narrative allowed the movement to gain support from the traditional sources of political power, perceiving that "motherhood was the only social position in which all women could command respect" (Gordon, 2002, p. 91). This coalition eventually expanded the franchise with the Nineteenth Amendment, which

Congress ratified in 1920. The passage and ratification of the Nineteenth Amendment had unexpected effects, splintering the coalitions as nuanced questions about citizenship were brought forward, such as “did having the vote make women citizens on par with men?” and “how did the centering of motherhood in the fight for suffrage impact this?”

Motherhood and the biological nature of women continued to intertwine and tangle with the already prescribed ideas of citizenship. Feminists wanted to elevate women as human individuals but had acquiesced to suffragist ideals that embraced the cult of motherhood and purity. The employment of this language, and the tension between women as mothers and humans, led the coalition to succeed in exposing the ‘double aims’ of feminism (Cott, 1997, p. 50). The tensions between these two factions exemplify how women have struggled to be seen as equal citizens trying to embrace the obvious differences while also balking at the idea of separate citizenship for women. While proving a counterfactual is impossible, the centering of motherhood may have been pivotal in gaining suffrage but was harmful to the women campaigning for full equality.

The Equal Rights Amendment and Questions of Citizenship

The Nineteenth Amendment was a massive victory and a watershed moment for women. Voting encapsulated citizenship in a way few other activities did, and other rights were granted by extension. Ratification also brought the differences between suffragists and feminists, liberals and conservatives, into stark relief. The newly proposed Equal Rights Amendment brought these differences into the spotlight.

In simple terms, the ERA was proposed to eliminate all forms of sex discrimination and bring women's status as citizens on par with men. Feminists and suffragists agreed that women were being treated differently than men but had significant disagreements on why and whether it was justified. For simplicity's sake, the suffragist position here becomes protectionist, and the feminist position is emancipationist. While this is an oversimplification, it serves to define the factions for this argument.

Suffragists had previously adopted society's mainstream language and attitudes to gain more power, acknowledging the stark reality of the world in which they existed. Protectionists were looking at the world as it was and acting accordingly. They acknowledged the reality women were living in, that the institutions mistreated women, and identified the government as a protective agent in an unfair system. Protectionists still viewed women's primary responsibility as caregivers and successfully yielded this perceived authority in getting specific legislation passed, proving again that adopting existing language and structures procured some level of success.

Robyn Muncy expertly traces these developments in *Creating A Female Dominion*, noting that “the doctrine of separate spheres...followed women into public life,” and “succeeded best in winning professional positions and in influencing public bodies when they addressed issues that affected women, children, and the poor” (Muncy, 1991, p. 36). While these tactics expanded a woman's societal roles, they again reinforced existing stereotypes. Politicians courted this new electorate by acting on issues that appealed to women. The increasing lobbying presence from women, and the assumption by which politicians acted, were two parallel forces that reinforced the definition of women as mothers: “it seemed as though we were just doing on a larger platform what women had always supposed to do - care for women in childbirth, welcome the newborn, and nurture the children” (Cott, 1997, p. 98). As women began to rise in professional and political ranks, their members, such as Eleanor Roosevelt and Frances Perkins, reinforced this idea, believing “that domesticity was the desirable arrangement for most women” (Dewolf, 2021, p. 120).

Advocating for and adopting special labor legislation may have been necessary; however, the protectionists argued women needed protection because they were *mothers and potential mothers* over the larger theory that workspaces are unsafe and everyone deserves dignity. This argument from protectionists was a false choice; Alice Paul summed it up at a 1921 NWP meeting, “we do not want to bring the standard for women down to that of men, but want, on the contrary, to bring that of men up to the standard existing for women” (Cott, 2021, p. 121). A working-class woman of the time echoed the same sentiments: “It seems to me that protective labor legislation should be enacted for women and men alike” (p. 122). More encompassing labor laws that created a standard equally applied to both sexes would have been preferential over trying to force women into male-defined spaces.

Another economic battleground was the issue of birth control, bringing the necessity of reproductive self-determination back to the forefront. Early birth control advocates, like feminists, had lofty goals of

recontextualizing citizenship and the rights that came with it. They wanted to transform the nature of women's rights, and human rights, to include free sexual expression and reproductive self-determination, identifying the "lack of control over reproduction helped perpetuate an undemocratic distribution of power" (Gordon, 2002, p. 138-139). Leaders in the birth control movement, like Margaret Sanger, began with radical ideas that they shifted to fit the society in which they existed. Prominent leaders bifurcated the question of birth control from the question of reproductive power to make it more appealing to the broader public. Instead, birth control was couched in economic terms, gaining more widespread support under the guise that smaller families would be easier to provide for with one income, allowing the women to stay home.

Just as leveraging motherhood gained women the vote and a measure of political and professional power, putting birth control in publicly palatable language was successful and necessary, but in doing so, ignored its "capacity to affect the class, race, and sex balance of power" (Gordon, 2002, p. 230). Implementing birth control as an economic tool instead of one of self-determined reproduction reduced the potential power. Centering motherhood limited the scope of women's citizenship once suffrage was gained, and through the "inability to support greater change in the relations between sexes, the birth control movement had become self-limiting" (p. 275).

The emancipationists, like the feminists before them, wanted to expand women's rights and divorce the assumption that all women would be mothers and caregivers. The emancipationist tactic with the ERA was to eliminate all forms of sex discrimination under the law, addressing the paternalism and protectionism still existing in American law. An early draft of the amendment also illustrated this, providing a litany of discriminatory actions to be remedied if women were to be equal citizens. The stalemate by the mid-twentieth century largely regulated women to their previous roles, only with a marginal increase in power. Again, adopting existing structures brought short-term success but did not allow for any fuller gains or reinterpretation of citizenship.

Second-Wave Feminism

Second-wave feminism brought a vitriolic revolt, reframing the narrative in pushing back against the notion that women were simply mothers. Second-wave feminists rejected the notion that motherhood must be a woman's "primary identity," discounting the assumption that it was the one true calling for the so-called 'fairer sex.' They approached economic liberation with a broader understanding, arguing that women who both were and were not mothers ought to have the same rights as men in the workforce. In doing so, the ERA and its promise of non-gendered ideas of citizenship found a second life. Unlike their predecessors, they dismissed that "women's biological capacity for motherhood made it improper for them to attempt any other career" (Gordon, 2002, p. 256). The backlash against domestic constraints is perhaps best illustrated by Betty Friedan's seminal *The Feminist Mystique*, where the "resurrected Victorian notions of femininity" emphasizing women's biological role as mothers were explicitly rejected (Gordon, 2002).

Second-wave feminists threaded the needle between the protectionists and emancipationists of the mid-century. Protectionists recognized that "men cannot be mothers," whilst emancipationists thought that "women differentiation from men in the law... was a particular, sociohistorical construction, not necessary or inevitable" (Cott, 2021, p. 138). Second-wave feminists sought to divorce womanhood from *having* to mean motherhood, liberating women to take on a larger role in society. They recognized that a history of discrimination and inherent gender differences meant they should sometimes be treated differently.

Second-wave feminists identified reproduction as the linchpin that affected all other rights; "abortion had changed its meaning through its reinterpretation by the revived women's movement... understanding of abortion as a right of self-determination to which all women were entitled" (Gordon, 2002, p. 300). Legal theorists have elaborated on this concept, as a 2014 law journal article explained, "abortion rights are a precondition of full or 'first class' citizenship for women" (Allen, 1995, p. 419). Women who choose not to, or cannot, have children are not full citizens because of the institutional structures of American law and society. The American system still treats women, as a group, as potential mothers and thereby restricts citizenship, "despite significant legal gains, women as a group do not yet have the control over their lives that men as a group do" (p. 419).

Even as *Roe v. Wade* established the legal right to abortion, the legal landscape around reproduction and abortion has skirted around citizenship, reflecting earlier history. As in *Minor v. Happersett*, the court found women were citizens, but voting was not a right under citizenship. Similarly, the modern court has continued to

limit the rights of women. In abortion law and judicial review, abortion is traditionally found to be an expectation of privacy but, due to the limitations of the Fourteenth Amendment, has not been given the weight of a right of citizenship. Thus, academics frame this as a question of government intrusion and privacy rather than determining if a woman has the right to self-determination over the most fundamental aspect of her life. Reproductive self-determination being necessary for full citizenship has been alluded to on occasion. In *Planned Parenthood v. Casey*, Justice Sandra Day O'Connor noted that "the ability of women to participate equally in the economic and social life of the Nation has been facilitated by their ability to control their reproductive lives" (*Planned Parenthood v. Casey*, 1992).

Second-wave feminism exposed that while gains had theoretically been made, women could not assert themselves the way men could. Through the courts, they managed to gain greater legal protections than before, but in doing so, a backlash was ignited.

Backlash and the Current Moment

Historically, women previously exerted reproductive control through various methods, from voluntary motherhood to individual responsibility for birth control. The backlash following second-wave feminism and *Roe* was different because it so clearly removed motherhood as a primary identity for women. The expansions seen in the late twentieth century threatened the existing institutions more than anything before them.

The ideology of those activists who promoted motherhood had not disappeared, and they felt under attack. "Abortion became for its opponents a powerful anti-motherhood symbol, indeed, the antithesis of motherliness" (Gordon, 2002, p. 305). The ideological practice of utilizing motherhood to promote the status quo and give women a "special status" resurfaced. This backlash suggests some level of wisdom from the preceding feminists and suffragists. For example, the Affordable Care Act instructed health insurance companies to cover birth control. Sandra Fluke, at the time a Georgetown student, testified before Congress about its importance. Fluke, who needed birth control to manage a medical condition, was lambasted by Rush Limbaugh and other right-wing outlets for enjoying sex and was implied to be a prostitute. The idea that non-wed or single women "had to be, or ought to be, celibate" highlights how many men still think that women should only be having intercourse to become mothers (Gordon, 2002, p. 260).

The most recent example of the decades-long backlash is the Supreme Court's ruling in *Dobbs* in the summer of 2022. In doing so, the court "does not think forced childbirth implicates a woman's right to equality and freedom" (*Dobbs v. Jackson*, 2022). If women are only meant to be mothers, this is not an issue. The dissenting opinion highlights the erroneous originalist analysis, stating that women's rights do not exist in the historical tradition because women were barred from participation. *Dobbs* has returned the American woman to something closer to the historical status quo where reproductive rights are in question, and therefore, full citizenship is in question.

In modern society, women are still most valued in their relation to men and as mothers. To this day, a woman's connection to a man is a powerful societal force. Many men and society at large only value women when they are connected to others. This is evident when a man declares he is a feminist because he "has a wife and mother" or becomes a feminist only after having a daughter. Personal relationships and personal stories are potent tools in organizing and change-making, but it does highlight a fundamental problem with how society views women and why women still do not have full and equal citizenship because women have never been individuals in the same way men have.

Conclusion

The paternalism by which women have historically been treated still exists today. When the ERA was first proposed in the early-to-mid twentieth century, its supporters pointed to how the remnants of the common law tradition of domestic relations, coverture, had sustained the constraints on women's civic autonomy, thereby exposing fundamental flaws in ideas of citizenship. The tension between feminists and suffragists, or protectionists and emancipationists, centered around what type of citizenship women should have. Many self-acclaimed feminists, conservatives, and liberals focused on motherhood and women's assumed roles in their activism while exposing dual contradictions. The legal tradition of the late twentieth and early twenty-first centuries is beginning to come to the idea that reproductive self-determination is necessary to achieve full and

equal citizenship.

In centering motherhood, women have historically recognized reproduction's vital role. However, so many of these women approached it from the assumption—at least publicly—that all women were mothers or potential mothers. Neglecting to also elevate the idea that some women choose not to, or cannot, have children, they perpetuated societal discrimination towards women who are out to make their own gains. While, historically, this may have been successful, it has also prevented women from gaining full citizenship. Fundamentally, it may be impossible for society to center self-reproduction when citizenship is based on a male default. Centering motherhood has allowed women to make significant strides in pursuing human rights, but it has impeded a fuller understanding of citizenship and what it could be.

References

- Allen, A. L. (1995). The Proposed Equal Protection Fix for Abortion Law: Reflections on Citizenship, Gender, and the Constitution. *Harvard Journal of Law & Public Policy*, 18(2), 419.
- Cott, N. F. (1997). *The Grounding of Modern Feminism*. New Haven: Yale University Press.
- DeWolf, R. (2021). *Gendered Citizenship: The Original Conflict over the Equal Rights Amendment, 1920–1963*. Lincoln: University of Nebraska Press.
- Dobbs v. Jackson Women's Health Organization*. (n.d.). Oyez. <https://www.oyez.org/cases/2021/19-1392>
- Gordon L. (2002). *The Moral Property of Women: A History of Birth Control Politics in America*. 3rd ed. Urbana and Chicago: University of Illinois Press.
- Muncy, R. (1994). Essay. In *Creating a Female Dominion in American Reform 1890 - 1935*. New York u.a.: Oxford Univ. Press.
- Planned Parenthood of Southeastern Pennsylvania v. Casey*. (n.d.). Oyez, www.oyez.org/cases/1991/91-744
- Thompson, L. (2022, September 20). Voluntary Motherhood: When Suffragists Embraced a Right to Reject Unwanted Sex for Fear of Pregnancy. *The Milwaukee Independent*.
- Welter, B. (1966). The Cult of True Womanhood: 1820-1860. *American Quarterly* 18(2), 151–174.

CURRENT EVENTS PHOTOS AND COMMENTARY

Marissa Solomon-McRoy



“Abortion is Healthcare” Photo taken May 3, 2022: Protests broke out across the nation and outside of the U.S. Supreme Court (SCOTUS) following the draft opinion leak on *Roe v. Wade* in May 2022. In June 2022, SCOTUS overturned the nearly 50-year ruling on *Roe v. Wade*, which constitutionally protected abortion access as a federal right. Since its overturn, over 20 states have banned abortion or plan to do so this year (Nash & Guarnieri, 2023). This would force pregnant individuals to either choose between traveling long distances to states where abortion is accessible or seek unsafe means to terminate their pregnancy. Either option is especially concerning in states with already high rates of maternal mortality. This landmark decision has undeniably set the nation back fifty years in women’s rights progress and we will see the devastating effects for decades to come.



“Welcome with Dignity – Safe Not Stranded Rally” Photo taken April 26, 2022: The Migrant Protection Protocols (MPP), also known as the “Remain in Mexico” program, forces asylum seekers to await U.S. Citizenship and Immigration Services (USCIS) adjudication of their case in Mexico. The Biden Administration has made several attempts to end the Trump-era program, however, they continue to face legal battles over the implementation of its termination. Asylum seekers are already a vulnerable population, and when forced to remain in Mexico, they are often denied access to health care and education, while also facing threats from gangs, kidnapers, and extortionists (Human Rights Watch, 2022). The United States immigration system fails thousands of asylum seekers every year, with USCIS cases currently backlogged for years awaiting adjudication. This rally was held the morning of Supreme Court oral arguments, where the court later decided, in June 2022, that President Biden can legally end the MPP program and work to reestablish a welcoming U.S. immigration system.

Website link to rally for more information: <https://safenotstranded.org>

References

- Nash, E. & Guarnieri, I. (2023). *Six Months Post-Roe, 24 US States Have Banned Abortion or Are Likely to Do So: A Roundup*. Guttmacher Institute. <https://www.guttmacher.org/2023/01/six-months-post-roe-24-us-states-have-banned-abortion-or-are-likely-do-so-roundup>
- '*Remain in Mexico*': *Overview and Resources*. (2022). Human Rights Watch. <https://www.hrw.org/news/2022/02/07/remain-mexico-overview-and-resources>

HEALTH AND URBAN POLICY

A COST-BENEFIT ANALYSIS OF ADDRESSING FOOD DESERTS IN WASHINGTON, DC

Tashfia Hasan, Leena Khurana, Matipa Mutoti, Benjamin W. Schumann

Abstract

This cost-benefit analysis examines whether implementation of a nutrition education program, expansion of the DC Circulator, and/or a combination of the two interventions are cost-beneficial solutions to expanding food access to residents of Northeast and Southeast DC. The goals of this analysis are to evaluate options to reduce the disadvantages of life in a food desert; ensure community members are empowered and informed regarding healthy food options and choices; determine whether the social benefits to increased investment outweigh the costs; and estimate the rate of return of such investment. The cost-benefit analysis of the three alternatives broadly groups the costs into four categories: the projected operating costs of the Circulator (less projected ridership at \$1/ride), the per-participant costs of nutrition program materials, the per-participant cost of staffing and leading the nutrition program, and the value of time participants must dedicate to the nutrition program. Social benefits are grouped into three categories; the avoidance of individual vehicle mileage and depreciation due to increased Circulator use, the time savings from the new Circulator routes as opposed to an existing Metrorail route, and the avoidance of future health-care costs descending from better nutrition, particularly costs related to obesity and Type II diabetes.

Under all three selected discount rates of two, three, and seven percent, the combined alternative 3, including both the Circulator and a nutrition program, is considered cost-beneficial, with a benefit-to-cost ratio of 1.160. The financial scope of the nutrition program as considered in this study is much larger than the Circulator program and accounts for most of the positive benefits, though the Circulator program on its own is cost-beneficial.

The cost-benefit analyses also include sensitivity analyses to test the validity of assumptions. When evaluating the alternatives that include the Circulator expansion (1 and 3), the alternatives are less beneficial when the \$1 fare is not charged, to the point where the Circulator program on its own is no longer cost-beneficial. When subjecting a variety of input parameters to fluctuation via 10,000 trials of Monte Carlo analysis, the preferred alternative 3 is cost-beneficial in 65.90 percent of trials.

Introduction

A “food desert” refers to a geographic area where people have limited access to healthy food, a problem that affects millions of Americans every year (USDA Economic Research Service, 2021). Healthy food is food that contains meaningful servings from food groups defined in Federal Dietary Guidelines, and that adheres to specified limits for nutrients like saturated fats and added sugars (U.S. Food and Drug Administration, 2022). These areas tend to have concentrations of low-income and minority residents, invoking socioeconomic and racial divides. The term “food desert” was first coined in 1995 by the Nutrition Task Force Low Income Project Team in the United Kingdom (Beaumont et al, 1995). Their study evaluated the interrelated strands of evidence between “increasing health inequalities, retail food provision, compromised diets, undernutrition, and socioeconomic exclusion” in the United Kingdom (Wrigley, 2002). In the United States, according to the United States Department of Agriculture (USDA), 12.8 percent of the population lives in areas with limited access to full-service grocery stores (Rhone et al, 2017). This report compared the number of food store types with the Census tract income between 2010 and 2015, and found that there were more supercenters and supermarkets amongst high-income tracts than low-income tracts. According to Bower et. al, those at the intersection of low-access and low-income are non-Hispanic Blacks with the age-adjusted prevalence of obesity at 44.1 percent in comparison with 32.4 percent of non-Hispanic Whites (2014).

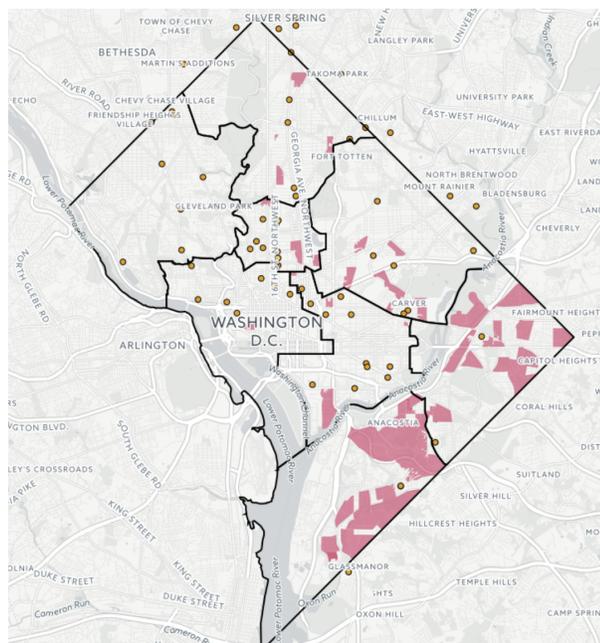
This disproportionate presence of obesity in non-Hispanic Black communities prevails in Washington, DC, a city with “an extended history of racial and economic divisions and disparities, which in turn contribute to the development of food deserts” (Vandersluis Morgan, 2018). Food deserts constitute almost 11% of the city’s total area (Vandersluis Morgan, 2018). They exacerbate a multitude of contributing factors, including “weak

transportation infrastructure...and result in a lack of access to healthy food options, which leads to diet-based diseases such as diabetes and heart disease” (Yu, 2021).

Background

According to the DC Policy Center, a region is considered a food desert if “the walking distance from a household to a grocery store is more than 0.5 miles, more than 40 percent of households don’t have access to a vehicle, and the median household income is below 185 percent of the federal poverty line” (Smith, 2017). By that definition, those affected are largely in Wards 7 and 8, as shown by the map in **Figure 1**. The map displays the presence of food deserts in pink. It compares median household income and the proportion of carless households, both by Census tract, with the grocery stores located in the District, as shown by the orange dots (Smith, 2017). This map indicates that Wards 7 and 8 are frequent intersections of low-income and low-access. As a result, residents of these neighborhoods are likely to experience more health issues, the “grocery gap”, longer travel times, and the exacerbation of already existing racial wealth disparities.

Figure 1: Food Deserts in Washington, DC: Areas of limited food access in the District (in pink) based on grocery or supermarket location, household income, and transportation access



Health Issues

In 2010, the District of Columbia created a citywide action plan to address the high obesity rates locally, but more specifically those east of the Anacostia River, which divides the majority of Wards 7 and 8 from the rest of the city (Ferebee et al, 2010). According to the plan, “Working Towards a Healthy DC: The District of Columbia’s Overweight and Obesity Action,” most underserved areas include Wards 7 and 8, as well as predominantly Black neighborhoods contained therein (Ferebee et al, 2010). Furthermore, one in three African-American residents were obese, compared to one in ten White residents, and in 2004, those obesity-related costs were estimated at more than \$400 million (Ferebee et al, 2010). Black life expectancy in Washington DC is an average of 72.7 years. In comparison, it is 88.0 years for non-Hispanic White people, 88.3 years for Hispanics, and 88.9 years for Asians (Busette and Elizondo, 2022). While obesity is caused by various factors including personal choices, the statewide action plan acknowledged barriers that prevent people from accessing fresh and nutritious food, including the availability of affordable grocery stores, environment, support systems, lack of education, and inadequate transportation structures. The differences in the quality of food consumed were found in the District’s Behavioral Risk Factor Surveillance Survey, which found that only 24 percent and 32 percent of

residents in Wards 7 and 8, respectively, consumed five servings of fruits and vegetables daily. In comparison, that number is 37 percent in Wards 1 and 2 (Nesbitt et al, 2007).

Grocery Gap

According to the DC Hunger Solutions 2006 report, Wards 7 and 8 received a grade of C and D- on food access scores, respectively, due to limited access to full-service grocery stores (Ferebee et al, 2010). Full-service grocery stores are self-service retail establishments that are independently owned or part of a corporate chain and licensed as a grocery store. Full-service grocery stores in DC must sell food from at least six established food categories and dedicate certain amounts of space to selling them (Alcohol Beverage Regulation Administration). In the 2021 report, there was little difference. The District's highest-income ward, Ward 3, was found to have 16 full-service grocery stores. On the other hand, Ward 8, the District's lowest-income ward, has one full-service grocery store while Ward 7 has two full-service grocery stores (Jensen et al, 2020). As a result of limited access to full-service grocery stores, residents of Wards 7 and 8 are forced to look toward alternative food sources sold at convenience stores and corner stores to fill the gap created by the food desert. According to the National Consumers League, the food available at convenience stores and corner stores tends to be "mainly processed foods that are high in calories, fat, and salt," which can negatively impact and contribute to obesity-related illnesses. However, most residents east of the Anacostia River have limited options due to the distance they must travel to access their closest full-service grocery store (National Consumers League, 2014).

Travel Time

Although Washington DC is ranked one of the most walkable cities in the United States, with a "Walk Score" of 74.1, the median walk scores are significantly lower in Wards 7 and 8 at 57.0 and 48.5, respectively (Walk Score, 2022). Furthermore, the city's eastern neighborhoods have lower median transit scores than other wards. As a result, travel time and distance are important factors residents of Wards 7 and 8 must consider when determining grocery options. Not only do they face a limited number of full-service grocery store options, but they must also consider the opportunity cost of additional travel time to a full-service grocery store, and whether it is worth the time they would save shopping at a local convenience store.

Racial Wealth Disparity

According to the Council Office of Racial Equity in the Council of the District of Columbia, "wealth disparities between Black and White residents are stark." The median White DC resident's income stands at "three times the median Black resident's income" (MITRE, 2021). Residents in Ward 3, a predominantly White neighborhood, have a median income of \$126,184, while Ward 8, a predominantly Black neighborhood, has a median income of \$34,034 (MITRE, 2021). This income gap may be partially attributed to the education gap between the two wards. Of the residents in Ward 3, only 3.7 percent of adults aged 25 and older have a high school diploma as the highest level of education, whereas 38 percent of residents in Ward 8 have a high school diploma as the highest level of education (MITRE, 2021).

In the United States, homeownership is closely linked to wealth and many people of color have faced structural barriers in local and national policies, Supreme Court rulings, programs, and practices that enabled wealth accumulation for white families and prevented the same for many Black families (Kijakazi et al, 2016). Like homeownership, access to nutritious food is exacerbated by the structural barriers for residents in Wards 7 and 8.

Problem Statement

Food deserts in United States' urban spaces are commonplace, and DC is no exception. In some neighborhoods of the city, particularly those east of the Anacostia River, there is extremely limited access to quality groceries. Given that many households in the city do not own personal automobiles, this poses issues related to nutrition and public health. Further, when community members do have some access to healthy food options, there are often financial or knowledge gaps that prevent taking full advantage of the ability to acquire healthy foods.

Food deserts are routinely recognized as an accessibility issue in U.S. urban areas, and the city does have programs in place working to increase access to affordable foods; however, these programs are not accessible to

all DC residents, particularly those living in Wards 7 and 8.

The goals of this analysis are to evaluate options to reduce the disadvantages of life in a food desert; ensure community members are empowered and informed regarding healthy food options and choices; determine whether the social benefits of increased investment outweigh the costs; and estimate the rate of return of such investment.

Given that food access is largely seen as an equity goal, it is especially important for the city to not only invest in ameliorating food deserts but do so in the most efficient way with a high social rate of return.

Therefore, this analysis will be centered on the following question: **What is the most cost-effective means to improve access to nutritious foods in eastern DC, address food deserts in the city, and support healthy outcomes for residents?**

Methodology

Cost-benefit analysis was chosen as the method of evaluation to provide a concrete analysis of an issue that involves a number of elements that are challenging to quantify. Social issues and public projects can be difficult to evaluate and do not always fare well in cost-benefit analyses, given the difficulties assigning specific values to social factors. This report challenges that notion by taking care to anticipate as many costs and benefits as possible that may typically be overlooked or undervalued. It will also evaluate whether a social program and public project can fare as cost-beneficial solutions to the issue of food access.

Standing

Within the context of cost-benefit analysis, it is important to determine who has standing in the analysis. Standing refers to which parties' costs and benefits are being considered within the analysis (McGraw, 2022). The focus of this report is on interventions intended to enable better access to nutritional foods for DC residents in the northeast and southeast quadrants of the District, in particular those who currently have poor food access; however, this analysis is conducted from the perspective of the DC government. Consequently, all residents of DC will have standing. Given the location of the quadrants of DC in question, there may be some Maryland residents, specifically in Prince George's County, who may access the education and transit interventions being analyzed. Any residents outside of DC will not have standing given that if implemented, these interventions would utilize public dollars paid by DC taxpayers.

Parameters

This cost-benefit analysis will examine the impact of these interventions over a ten-year time horizon, using an annual discount rate of 3 percent. Because the value of a dollar is not the same today as it will be in the future, it is important to assess costs and benefits in the same units (in this case, dollars with the same value). Applying a discount rate allows consideration of costs and benefits in dollars at an equivalent rate regardless of the year in question across the ten-year time horizon of this analysis (Agar, 2014). A discount rate of 3 percent is a generally accepted and utilized figure for public projects (Council of Economic Advisers, 2017).

In order to determine the value of time saved as a result of better transportation for food access, this analysis values a person's time at \$20.13 per hour. The minimum wage in Washington, DC is \$16.10 per hour as of July 2022, which better reflects the value of time in the inflationary environment of the early 2020s than the prior wage set in July 2021 (Office of Wage-Hour Compliance, 2022). The U.S. Department of Transportation's (USDOT) estimated value of time, inflated to 2022 U.S. dollars (U.S. Bureau of Labor Statistics), is \$31.96 (U.S. Department of Transportation, 2016). These estimates are considered the minimum and maximum figures for the value of a person's time. Many minimum wage workers do not receive added benefits through their employer and many people in Wards 7 and 8 of Washington, DC are paid less than the U.S. DOT's estimate of a person's time. Accordingly, \$20.13 was chosen as the value of one hour of a person's time by multiplying the DC minimum wage of \$16.10 by 1.25 to account for the cost of benefits, a figure that falls between the previously established minimum and maximum values of a person's time per hour.

The nutrition education programs and expansion of transit proposed by this analysis are new interventions. Consequently, there were several assumptions made about the anticipated rates of participation in the proposed education programs and ridership of the extended transit routes. Participation rates for the education

programs were estimated by examining participation in similar programs in other states and adjusting based on the scope of this analysis. Assumptions about the transit intervention were based on data made publicly available by the DC Department of Transportation.

Limitations

There were a variety of limitations that restricted this analysis and required a certain level of presumption. Both interventions studied here—expanded access to nutrition education programming and transit to acquire nutritious food—have a number of intangible costs and benefits. The establishment of a nutrition education program includes factors that are difficult to quantify such as the number of program participants and the time participants spend on the program. Extended transit also involves a number of unquantifiable factors such as anticipated changes to Circulator ridership, the extent to which residents elect to use the Circulator over personal vehicles, the value of time saved by use of transit, the time saved as compared to relying on other modes of public transportation, and the value of health savings. Additionally, there are ongoing debates about whether the Circulator should charge passengers at the local government level. Because these factors are challenging to quantify, a number of sensitivity analyses were conducted to account for these variables.

Baseline and Policy Alternatives

Baseline

The baseline would be no action taken to increase transportation access or provide nutritional programs to the residents of Ward 7 and Ward 8. Currently, zero food deserts exist in the “Rock Creek West” planning district, an area roughly coterminous with wealthy Ward 3, and much of the mid-city has either walking access to full-service grocery stores or local income levels support high rates of private automobile access. The majority (51 percent) of all food deserts are in Ward 8 and Ward 7 (31 percent) (Smith, 2017).

Residents in food deserts have limited access to public transportation outside their neighborhoods. A significant portion of the city east of the Anacostia River includes low-income people who lack a nearby full-service grocer, per an analysis by the DC Policy Center in 2017. For many of these neighborhoods, 85 percent of households do not own a car or have grocery stores within a “walkable” distance, defined as within the range of a 0.5-mile radius (Smith, 2017).

Without interventions, residents in Ward 7 and Ward 8 would only have access to two full-service grocery stores. Meanwhile, there are 49 full-service grocery stores across DC (DC Hunger Solutions, 2018). Most of these residents are Black and experience the highest poverty rates in the city (DC Hunger Solutions, 2018). Taking no action at all would further exacerbate the inequalities within these two wards and in turn, create longer transportation times and future health implications for residents.

Alternative 1: Transit

The first alternative examined focused on the operation of the NE1 and NS3 bus route alternatives (District Department of Transportation, 2021), which would further expand the Circulator service into Ward 7 and Ward 8. These new routes were generated based on the number and type of jobs, people per acre, transit-oriented population propensity, and limited income populations index, as shown in **Figures 2, 3, and 4**, respectively (District Department of Transportation, 2021). An analysis of these factors resulted in the ideal routes for NE1 and NS3, as shown in **Figures 5 and 6**, respectively (District Department of Transportation, 2021). The DC Circulator currently provides public transportation across six routes in Washington, DC, with one route extending across the Potomac River into Arlington, Virginia. Each stop is serviced every ten minutes during service hours, providing fast and affordable transit and about five million trips a year (District Department of Transportation, 2022). The DC Circulator will add an additional route in Ward 7 in 2023 to align the NE1 alternative given in a 2021 study. However, as funding permits, the NS3 alternative given via the same study connects a further 31,000 DC residents to two grocery stores.

When compared to the status quo, adding the Circulator route would benefit the residents of Ward 7 and Ward 8. At an estimated financial cost of \$4 million, the District Department of Transportation (DDOT) could consider adding this additional route. It is cost-beneficial when one considers the benefits District residents will accrue, particularly those in Wards 7 and 8 (District Department of Transportation, 2021). Combining the

estimated ridership from NE1 and NS3 alternatives, Circulator ridership would rise to approximately 2,197,843 riders. Washingtonians who were already taking public transit would save an estimated ten minutes per trip, saving roughly \$2.01 per ride at a value of \$20.13 per hour.

Figure 2: Jobs and People per Acre

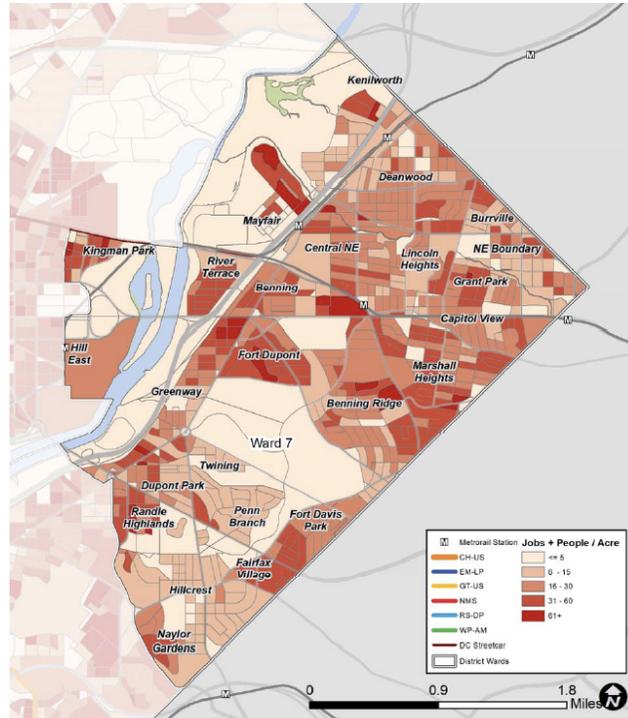


Figure 3: Transit-Oriented Population Propensity

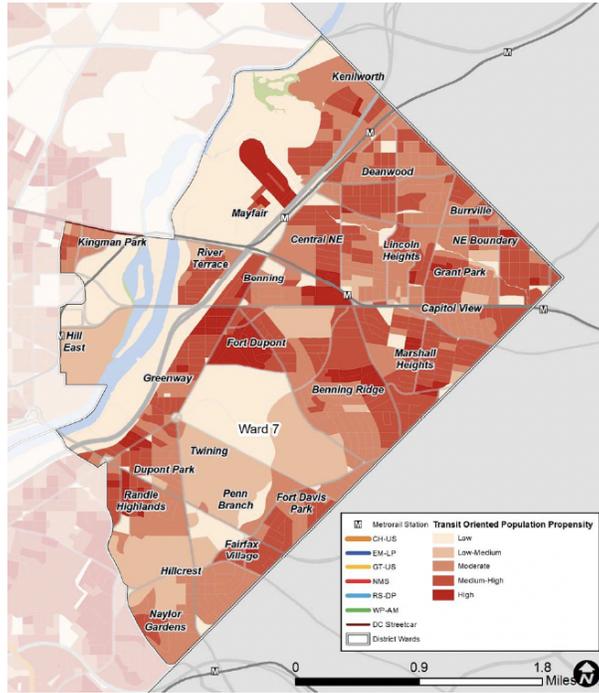


Figure 4: Limited Income Populations Index

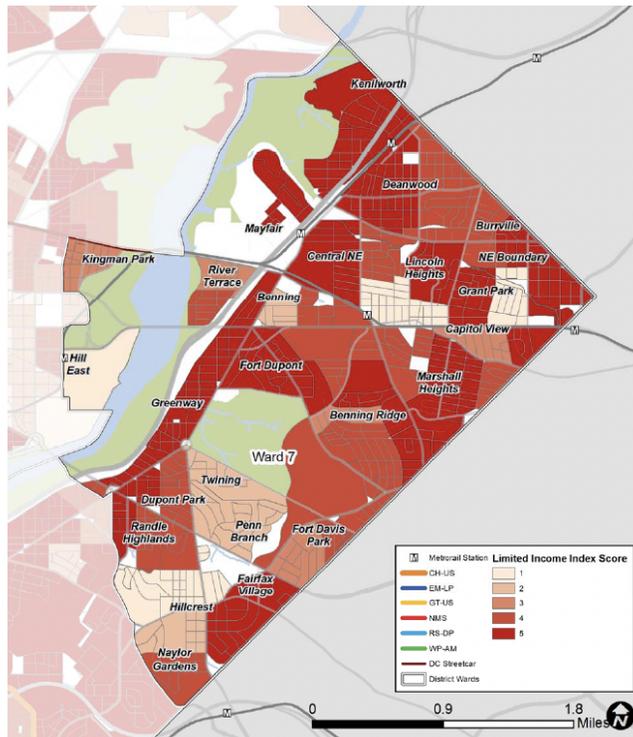


Figure 5: Alternative Map: NE1 (Union Station – Deanwood)

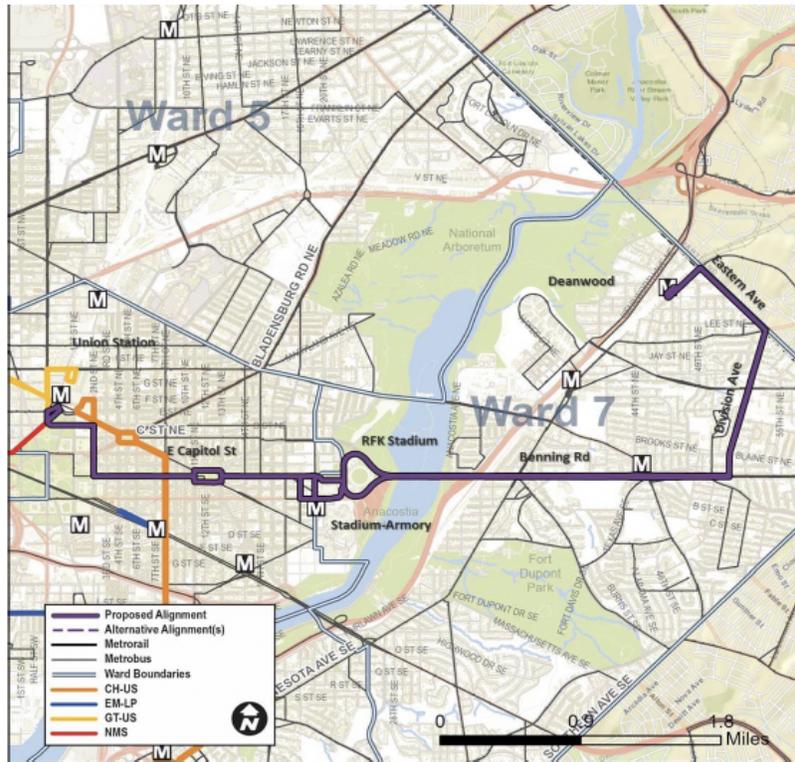
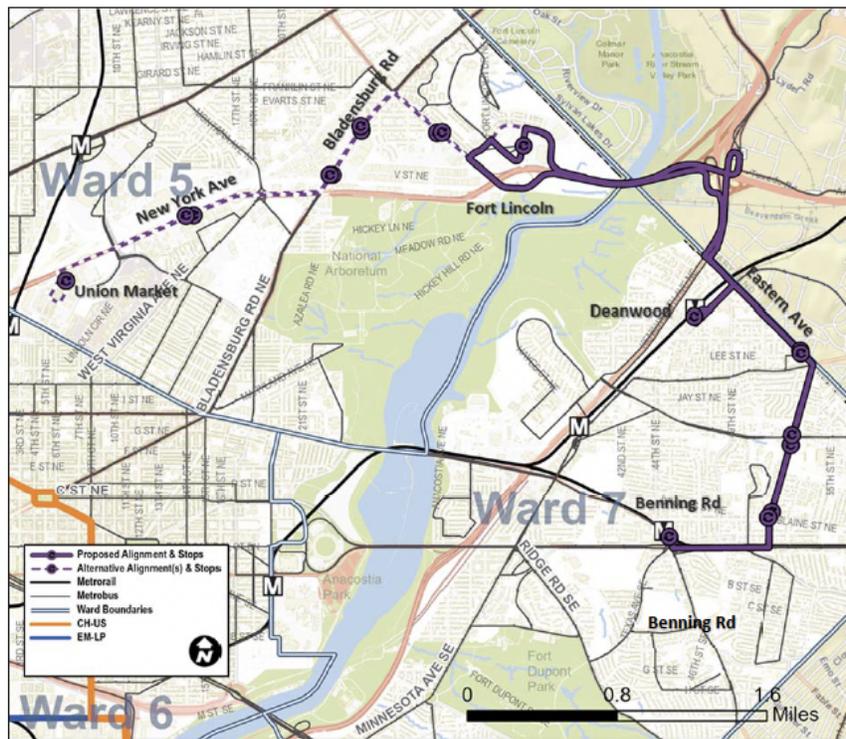


Figure 6: Alternative Map: NE2 (New York Avenue – Deanwood – Benning Road)



Alternative 2: Nutrition Program

The second alternative in this analysis examines the provision of nutritional education programs through existing civic organizations, led by paraprofessional aides indigenous to the community. This intervention would bridge the gap between nutrition education and food insecurity via a 16-week education initiative based on the Expanded Food and Nutrition Education Program (EFNEP).

The EFNEP, funded by Congress in 1970 under the Smith-Lever Act, guides low-income families and teaches members how to purchase, safely prepare, and maintain a balanced, highly nutritious diet. The program emphasizes the importance of fruit and vegetable servings and decreased fat consumption, as well as improved skills in food safety, preparation, and shopping. The long-term goals of the program are improved health and risk reduction for chronic, obesity-related diseases. Through interactive workshops, participants expand their ability to select and buy food (Cornell University, 2020). The program typically consists of six to nine workshops and spans several weeks, though the analysis includes a conservative estimate of 16 sessions for full effect.

When compared to the status quo of no action to increase nutrition knowledge, this alternative provides long-term public health benefits. The estimated population of participants in the Nutrition Program is expected to be around 57,500 people. The estimated cost of program staffing would be \$596.55. This includes an estimate of 32 hours of time spent on each participant and \$25.03 per person for the cost of materials. Benefits include reduced health estimate costs for health conditions such as diabetes and weight management (Ragjopal et al, 2002). Previous EFNEP programs have proven to be effective and beneficial for all involved, increasing participants' intake of iron, vitamin C, vitamin B₆, and fiber (Burney, 1998). Also, the program provides participants with a better understanding of nutrition labels and the tools to facilitate smart choices while obtaining and cooking groceries.

The relationship between diet and chronic disease is clear. A 2006 California study found that for every dollar spent on nutrition education, at least \$3.67 was saved on delayed medical treatment costs (Block Joy et al, 2006). The analysis uses estimated potential costs for the treatment of obesity and Type II diabetes to estimate health benefits for the program via cost avoidance.

Alternative 3: A Combination

The combined alternative would integrate the expansion of the Circulator service to better connect residents with existing grocery stores, prioritizing investment in a civic-organization-based food pantry and education programs. This will not only save a considerable amount of time for residents in connecting them to multiple grocery stores but also provide nutritional knowledge to encourage healthier food choices given the options available to residents of Wards 7 and 8.

When compared with the baseline, this alternative provides the investment necessary for residents of Ward 7 and Ward 8. With a large low-income population, Ward 7 and Ward 8 are at-risk for higher rates of chronic diseases (Block Joy et al, 2006). In addition, limited transportation as well as limited access to grocery stores make it difficult to make healthier choices, which will hinder residents in the future. Additional Circulator service will save residents' time and give them greater access to full-service grocery stores. When combined with nutrition education, residents will feel empowered and supported by members of their own community to make the best choices for themselves and their families.

Table 1 comprises the cost-benefit analysis of the policy recommendation, also known as Alternative 3. Alternative 3 suggests increased Circulator service and the establishment of a nutrition education program. The program is expected to yield a benefit-cost ratio (BCR) of 1.160 or a rate of return of 16 cents on the dollar. This cost-benefit analysis has been simplified to focus entirely on annual costs, and therefore there is no internal rate of return (IRR) separate from the BCR. For the same reason, the selected discount rate does not have an impact on the BCR, though it will impact equivalent annual net benefits when comparing internal and external policy recommendations.

Table 1: Social benefits and losses table for policy recommendation (2022\$)

		10 Year Project Operation
		Rate of Interest: 3% Discount Rate
	Trend Assumed	Present Day Value
Costs		
Transportation expansion:		
Circulator	0%	\$ 65,719,433.31
Nutrition education:		
Program materials	0%	\$ 12,276,848.10
Staffing	0%	\$ 292,599,824.26
Time lost in program	0%	\$ 315,873,411.05
Benefits		
Reduced transportation related costs:		
Mileage/depreciation	0%	\$ 833,538.15
Time savings	0%	\$ 72,543,931.52
Gain in access to health:		
Reduced health related costs	0%	\$ 723,178,062.24
Total Present Value Benefits	0%	\$ 796,555,531.91
Total Present Value Costs	0%	\$ 686,469,516.72
Net Present Value Benefits	0%	\$ 110,086,015.20
Benefit-Cost Ratio	0%	1.160

*Table 10 (Appendix) includes varied discount rate assumptions

Table 2 (Appendix) comprises the benefits and costs of Alternative 1, in which only the Circulator expansion is completed. A lower BCR of 1.117, or a rate of return of about 12 cents on the dollar, is expected from this alternative.

Table 3 (Appendix) comprises the benefits and costs of Alternative 2, in which only the nutrition program is implemented. A slightly higher BCR of 1.165, or a rate of return of about 17 cents on the dollar, is expected from this alternative. In these alternatives, the scope of the nutrition program is much larger than that of the Circulator expansion, so the BCR of the nutrition program determines most of the BCR of the combined BCR for the policy recommendation.

Sensitivity Analysis

Free Circulator (Policy Recommendation/Alternative 1)

As of 2022, the DC Circulator charges \$1.00 per ride, and this cost savings has been incorporated into the point estimate CBAs. However, occasionally the Circulator pauses ride fares as an economic initiative, and it is likely DDOT could pause or stop entirely in the future (Lazo, 2019). **Tables 4 and 5** (Appendix) indicate that the policy recommendation has a lower BCR with free Circulator service, and in fact the BCR is lower than 1 for Policy Alternative 1, implying that expanded service is no longer cost-beneficial without charging a fare.

Monte Carlo Analysis (All Policy Alternatives)

One can better understand the range of potential results in implementing policy alternatives by varying cost and benefit inputs that show uncertainty, as described in **Table 6**. All Monte Carlo simulations assume a discount rate of 3 percent, as the annual cost-based structure of this analysis means that the discount rate does not affect cost-effectiveness.

Table 6: Parameters that vary in Monte Carlo Analysis

Parameter	Minimum	Mode	Maximum	Explanation
Program Participation	15,000/yr	-	100,000/yr	Approximately 100,000 DC residents in poverty (U.S. Census Bureau, 2021). Roughly 15 percent of impoverished Californians participated in program in 2017 - setting this as floor as figure includes both urban and rural areas (U.S. Census Bureau, 2021; University of California, 2019).
Time spent on program	12 hours	-	52 hours	Allowing for variation in time dedicated to the program - between 6 and 26 sessions of approximately 2 hours each (Atoloye, 2021).
Circulator ridership/yr	1,098,922	2,197,843	3,296,765	Varying ridership between 50 – 150 percent of projections from DDOT study (District Department of Transportation, 2021).
Mode shift from cars	0.01 x Ridership	0.02 x Ridership	0.085 x Ridership	Varying mode shift, particularly to incorporate a higher estimate in the case of bus rapid transit-quality service (Li et al, 2021).
Value of time saved	\$16.10/hr	\$20.13/hr	\$31.96/hr	Min = DC minimum wage as of July 2022 Mode = 1.25 x DC minimum wage, to account for cost of benefits Max = U.S. Department of Transportation guidance on value of time, inflated to 2022 USD (U.S. Department of Transportation, 2016).
Time saved on new Circulator/ride	-	10 minutes	15 minutes	Based on rough estimates of savings from more direct routing between Deanwood and Union Station, or Benning Road and Navy Yard.
Value of health-related savings/yr/person	-	\$1,474/yr	\$2,681/yr	Higher estimates assume benefits accrue to all participants, not just the 55 percent that are likely obese and/or Type II diabetic, through reduction in other conditions. All variables inflated to 2022 USD.

Table 7 and **Figure 8** (Appendix) display the results of a Monte Carlo analysis on the preferred policy alternative/Alternative 3 (both interventions) with these variances in play. All Monte Carlo simulations assume the Circulator charges \$1.00 since that program is unlikely to be cost-beneficial otherwise. Given the wide variation inherent in the value of time, program participation, and value of health-related savings/year/person,

there is a similar spread in results. Nonetheless, this alternative is believed to be cost-beneficial in 65.90 percent of cases.

Table 8 (Appendix) displays the results of a Monte Carlo analysis on Alternative 1 (Circulator only). Corresponding to the reduced benefit-cost ratio with the Circulator alone as compared to the nutrition program, the BCR in this scenario is clustered around 1.00, suggesting a transfer of benefits to riders rather than a social welfare benefit overall. As previously noted, this scenario assumes that the DC Circulator still charges \$1.00/ride. This alternative is believed to be cost-beneficial approximately 50 percent of the time.

Table 9 (Appendix) displays the results of a Monte Carlo analysis on Alternative 2 (nutrition program only). As with the point estimate analysis, because the nutrition program tends to be much larger in scope than a Circulator expansion, much of the weight of the combined programs is driven by the nutrition program. The nutrition program alone is likewise expected to be cost-beneficial in about 66 percent of cases.

Policy Recommendations and Discussion

After careful evaluation of the three interventions described in this report, it is recommended the DC Department of Health proceeds with the combined alternative, inclusive of DC Circulator expansion and implementation of nutrition education programs. In the case of limited resources, the nutrition education program should take priority over the expansion of the Circulator, given that the nutrition program is less risky and remains cost beneficial. The expanded Circulator alternative is only cost-beneficial when fares are charged, so it is recommended to maintain the current \$1.00/ride fare. The nutrition program intervention would produce significant cost savings in the form of preventative health costs. Conversely, residents' travel time to reach the grocery store is the greatest benefit of Circulator expansion. While travel time reduction is important, it is less tangible and arguably less impactful than increased positive health outcomes and healthcare cost savings, which are exorbitant on both the individual and health system levels.

Often, social investments fare poorly in cost-benefit analyses, especially when low-income individuals and families are the populations of interest. Social investments involve many intangible or difficult-to-quantify costs and benefits. However, it is the finding of this analysis that one key factor in assessing whether a social intervention is cost-beneficial is to appropriately value shadow benefits. Shadow benefits can be easily lost or dismissed if deemed too difficult to quantify. When benefits such as time saved, the utility gained, and greater access to resources can be adequately quantified through the use of shadow benefits, those benefits add up quickly and demonstrate a level of benefit worth the cost.

The value of time is especially important when it comes to low-income residents. An analyst may be tempted to utilize minimum wage figures in an effort to produce a conservative estimate of their analysis. Yet, the use of minimum wage in this context infers that a low-income person's time is worth less than that of their higher-earning counterparts. This undervalues a low-income person's time, creating social and analytical downfalls. Thus, it is crucial to consider a value of time that is a fair representation of any person's time, and that does not reduce a person to the value of their current earnings.

Additionally, preventative measures are often dismissed considering quantifying projected benefits is difficult. This can also contribute to social investments often falling short in cost-benefit analyses. However, this is where the appropriate use of shadow benefits and time horizons are critical. Using the example of the nutrition education program, this preventative measure may not have proven cost-beneficial in the immediate term, given that it takes time for education to be administered, absorbed, and influential. However, given this report's time horizon of ten years, this analysis showed that the nutrition education program's benefits did outweigh the costs in the long run as a preventative measure.

Conclusion

To better address the presence of food deserts in the eastern neighborhoods of Washington, DC, three alternatives were assessed: expanded Circulator routes to serve residents of Wards 7 and 8, a nutritional food education program to provide members of the community with the information they need to make nutritional food choices, and a combination of the two alternatives. Each project's tangible and intangible costs and benefits were monetized and enabled a calculation of results, including the NPV of benefits, BCR, EANBs, and IRR. Sensitivity tests and Monte Carlo analyses were also conducted to measure the sensitivity of the findings of this report to

ensure that different scenarios and variables were considered and accounted for. In conclusion, it is recommended that the Government of the District of Columbia implement the combined alternative of the expanded Circulator routes (including a fare of \$1.00), in addition to the nutritional education program, for an overall improved quality of life for the residents of the eastern neighborhoods of the District.

References

- Agar, J. (2014). *Cost-Benefit Discounting*. Conservation Strategy Fund.
<https://www.youtube.com/watch?v=Mol1yT7tczY&list=PLBfu1mD9hk67Vrm0SPK-fmQgmzWQ2zvNA&index=5>
- Alcohol Beverage Regulation Administration. (n.d.). Full-Service Grocery Stores.
<https://abra.dc.gov/page/full-service-grocery-stores>
- Atoloye, A. T., Savoie-Roskos, M. R., Guenther, P. M., & Durward, C. M. (2021). Effectiveness of Expanded Food and Nutrition Education Program in Changing Nutrition-Related Outcomes Among Adults with Low Income: A systematic review. *Journal of Nutrition Education and Behavior*, 53(8), 691–705.
<https://doi.org/10.1016/j.jneb.2021.03.006>
- Beaumont, J., Lang, T., Leather, S., & Mucklow, C. (1995). Report from the policy sub-group to the Nutrition Task Force Low Income Project Team of the Department of Health. *Radlett, Hertfordshire: Institute of Grocery Distribution*.
- Block Joy, A., Goldman, G., & Pradhan, V. (2006). Cost-benefit analysis conducted for nutrition education in California. *California Agriculture*, 60(4). <https://escholarship.org/uc/item/7kz1r9cv>
- Bower, K.M., Thorpe, R. J., Rohde, C., & Gaskin, D. J. (2014). The intersection of neighborhood racial segregation, poverty, and urbanicity and its impact on food store availability in the United States. *Preventive Medicine*, 58, 33–39. <https://doi.org/10.1016/j.ypmed.2013.10.010>
- Burney, J. L. (1998, December). *A Cost-Benefit Analysis of the Expanded Food and Nutrition Education Program*. TRACE: Tennessee Research and Creative Exchange.
https://trace.tennessee.edu/cgi/viewcontent.cgi?article=5502&context=utk_graddiss
- Busette, C., & Elizondo, S. (2022, April 27). *Economic disparities in the Washington, DC metro region provide opportunities for policy action*. Brookings Institute.
<https://www.brookings.edu/blog/how-we-rise/2022/04/27/economic-disparities-in-the-washington-d-c-metro-region-provide-opportunities-for-policy-action/>
- Cornell University. (2020). *EFNEP*. Food and Nutrition Education in Communities.
<https://fnec.cornell.edu/for-partners/programs/efnep/>
- Council of Economic Advisers. (2017, January). *Discounting for Public Policy: Theory and Recent Evidence on the Merits of Updating the Discount Rate*.
https://obamawhitehouse.archives.gov/sites/default/files/page/files/201701_cea_discounting_issue_brief.pdf
- DC Hunger Solutions. (2018). *Closing the Grocery Store Gap in the Nation's Capital*. Washington, DC
<https://www.dchunger.org/wp-content/uploads/2018/11/dchs-closing-grocery-store-gap-report.pdf>
- District Department of Transportation. (2021). *DC Circulator Transit Development Plan 2020 Update*. Washington, DC: District Department of Transportation. https://www.dccirculator.com/wp-content/uploads/2021/04/2020-TDP-Update_04.12.21-Updated-Final.pdf
- District Department of Transportation. (2022). *About Us*. Washington DC Circulator.
<https://www.dccirculator.com/>
- Ferebee, J., Ashbrook, A., Richardson, B., Shaw, D., Chatmon, R., Wells, V., Wilder, G., & Girardeau, C. (2010, March). *Universal health certificate - dchealth.dc.gov*.
https://dchealth.dc.gov/sites/default/files/dc/sites/doh/service_content/attachments/DOH%20Universal%20Health%20Certificate_Draft_7.7%20PDF.pdf
- Ferebee, J., Ashbrook, A., Richardson, B., Shaw, D., Chatmon, R., Wells, V., Wilder, G., & Girardeau, C. (2010). *Working Towards a Healthy DC: The District of Columbia's Overweight and Obesity Action Plan*. District of Columbia Department of Health.
<https://dchealth.dc.gov/sites/default/files/dc/sites/doh/OBESITY%20ACTION%20PLAN.pdf>

- Jensen, M., Pokorney, P., Ehrbeck-Malhotra, R., & Kelley, B. (2020). (rep.). *Still Minding the Grocery Gap in DC* Washington, DC: DC Hunger Solutions.
- Kijakazi, Kilolo, Rachel Marie Brooks Atkins, Mark Paul, Anne E. Price, Darrick Hamilton, and William A. Darity Jr. 2016. *The Color of Wealth in the Nation's Capital*. Durham, NC: Duke University; Washington, DC: Urban Institute; New York: The New School; Oakland, CA: Insight Center for Community Economic Development.
- Lazo, L. (2019, September 30). *No more free rides on the DC Circulator*. <https://www.washingtonpost.com/transportation/2019/09/30/no-more-free-rides-dc-circulator/>
- Li, Q., Ramirez Huerta, A. K., Mao, A. C., & Qiao, F. (2021). Using Random Undersampling Boosting Classifier to Estimate Mode Shift Response to Bus Local Network Expansion and Bus Rapid Transit Services. *International Journal of Civil Engineering*, 19(10), 1127–1141. <https://doi.org/10.1007/s40999-021-00635-7>
- McGraw, M. J. (2022, January 20). *Cost-Benefit Analysis in a Nutshell*. School of Public Affairs, American University. https://american.instructure.com/files/2263744/download?download_frd=1
- MITRE. (2021). *The Racial Wealth Gap in Washington, DC* Washington, DC <https://sjp.mitre.org/resources/MITRE-DC-Racial-Wealth-Gap-Study.pdf>
- National Consumers League. (2014, August 14). *Corner grocery stores: where convenience and junk food meet – National Consumers League*. https://nclnet.org/corner_grocery_stores/
- Nesbitt, L. Q. S., Garner, T., & Davies-Cole, J. O. (Eds.). (2007). *Behavioral Risk Factor Surveillance Survey (BRFSS)*. Washington, DC: Government of the District of Columbia.
- Office of Wage-Hour Compliance. (2022). *Minimum Wage*. <https://does.dc.gov/service/office-wage-hour-compliance-0>
- Rajgopal, R., Cox, R. H., Lambur, M., & Lewis, E. C. (2002). Cost-Benefit Analysis Indicates the Positive Economic Benefits of the Expanded Food and Nutrition Education Program Related to Chronic Disease Prevention. *Journal of Nutrition Education and Behavior*, 34(1), 26–37. [https://doi.org/10.1016/s1499-4046\(06\)60225-x](https://doi.org/10.1016/s1499-4046(06)60225-x)
- Rhone, A., Ver Ploeg, M., Dicken, C., Williams, R., & Breneman, V. (2017). *Low-Income and Low-Supermarket-Access Census Tracts, 2010-2015*. <https://www.ers.usda.gov/webdocs/publications/82101/eib-165.pdf?v=3395.3>
- Smith, R. (2017, March 13). *Food access in D.C is deeply connected to poverty and transportation*. <https://www.dcpolicycenter.org/publications/food-access-dc-deeply-connected-poverty-transportation/>
- University of California. (2019). *2017 Impacts: California Expanded Food and Nutrition Education Program*. https://community-nutrition-education.extension.org/wp-content/uploads/2019/03/OR-EF-NEP_ImpactReport_FY2015_FINAL.pdf
- U.S. Bureau of Labor Statistics. *Bureau of Labor Statistics Data*. <https://data.bls.gov/timeseries/CUUR0000SA0>
- U.S. Census Bureau. (2021). *U.S. Census Bureau QuickFacts: California*. <https://www.census.gov/quickfacts/fact/table/CA/PST045221>
- U.S. Census Bureau. (2021). *U.S. Census Bureau QuickFacts: District of Columbia*. <https://www.census.gov/quickfacts/DC>
- USDA Economic Research Service. (2021, April 27). *Go to the Atlas*. <https://www.ers.usda.gov/data-products/food-access-research-atlas/go-to-the-atlas/>
- U.S. Department of Transportation. (2016, September 27). *Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis*. <https://www.transportation.gov/sites/dot.gov/files/docs/2016%20Revised%20Value%200F%20a%20Statistical%20Life%20Guidance.pdf>
- U.S. Food and Drug Administration (2022, September 28). *FDA Proposes Updated Definition of 'Healthy' Claim on Food Packages to Help Improve Diet, Reduce Chronic Disease*.

<https://www.fda.gov/news-events/press-announcements/fda-proposes-updated-definition-healthy-claim-food-packages-help-improve-diet-reduce-chronic-disease>

Vandersluis Morgan, K. (2018, November 12). *Food Insecurity and its Effects in Washington, D.C.* Roots for Life. <https://www.roots-for-life.org/resources/2018/11/11/food-insecurity-and-its-effects-in-washington-dc>

Walk Score Methodology. Walk Score. (2022). <https://www.walkscore.com/methodology.shtml>

Wrigley, N. (2002). "Food Deserts" in British Cities: Policy Context and Research Priorities. *Urban Studies*, 39(11), 2029–2040. <http://www.jstor.org/stable/43196800>

Yu, A. (2021, October 14). *YU: Eradicate DC's Food Deserts.* The Hoya. <https://thehoya.com/you-eradicate-dcs-food-deserts>

Appendix

Table 2: Social benefits and loss table for Alternative 1 - Circulator only (2022\$)

	Trend Assumed	10 Year Project Operation		
		Rate of Interest: 2% Discount Rate	Rate of Interest: 3% Discount Rate	Rate of Interest: 7% Discount Rate
		Present Day Value	Present Day Value	Present Day Value
Costs				
Transportation expansion:				
Circulator	0%	\$ 69,204,731.42	\$ 65,719,433.31	\$ 54,111,937.02
Benefits				
Reduced transportation related costs:				
Mileage/depreciation	0%	\$ 877,743.17	\$ 833,538.15	\$ 686,316.99
Time savings	0%	\$ 76,391,153.18	\$ 72,543,931.52	\$ 59,731,078.86
Total Present Value Benefits	0%	\$ 77,268,896.36	\$ 73,377,469.67	\$ 60,417,395.86
Total Present Value Costs	0%	\$ 69,204,731.42	\$ 65,719,433.31	\$ 54,111,937.02
Net Present Value Benefits	0%	\$ 8,064,164.94	\$ 7,658,036.37	\$ 6,305,458.84
Benefit-Cost Ratio	0%	1.117		

Table 3: Social benefits and loss table for Alternative 2 - Nutrition program (2022\$)

		10 Year Project Operation		
		Rate of Interest:	Rate of Interest:	Rate of Interest:
		2% Discount Rate	3% Discount Rate	7% Discount Rate
	Trend Assumed	Present Day Value	Present Day Value	Present Day Value
Costs				
Nutrition education:				
Program materials	0%	\$ 12,927,926.08	\$ 12,276,848.10	\$ 10,108,486.91
Staffing	0%	\$ 308,117,268.08	\$ 292,599,824.26	\$ 240,920,264.60
Time lost in program	0%	\$ 332,625,122.78	\$ 315,873,411.05	\$ 260,083,224.46
Benefits				
Gain in access to health:				
Reduced health related costs	0%	\$ 761,530,357.84	\$ 723,178,062.24	\$ 595,448,922.60
Total Present Value Benefits	0%	\$ 761,530,357.84	\$ 723,178,062.24	\$ 595,448,922.60
Total Present Value Costs	0%	\$ 653,670,316.94	\$ 620,750,083.41	\$ 511,111,975.97
Net Present Value Benefits	0%	\$ 107,860,040.90	\$ 102,427,978.83	\$ 84,336,946.63
Benefit-Cost Ratio	0%	1.165		

Table 4: Policy recommendation with free Circulator (2022\$)

		10 Year Project Operation		
		Rate of Interest:	Rate of Interest:	Rate of Interest:
		2% Discount Rate	3% Discount Rate	7% Discount Rate
	Trend Assumed	Present Day Value	Present Day Value	Present Day Value
Costs				
Transportation expansion:				
Circulator	0%	\$ 90,178,802.85	\$ 85,637,205.70	\$ 70,511,793.05
Nutrition education:				
Program materials	0%	\$ 12,927,926.08	\$ 12,276,848.10	\$ 10,108,486.91
Staffing	0%	\$ 308,117,268.08	\$ 292,599,824.26	\$ 240,920,264.60
Time lost in program	0%	\$ 332,625,122.78	\$ 315,873,411.05	\$ 260,083,224.46
Benefits				
Reduced transportation related costs:				
Mileage/depreciation	0%	\$ 877,743.17	\$ 833,538.15	\$ 686,316.99
Time savings	0%	\$ 76,391,153.18	\$ 72,543,931.52	\$ 59,731,078.86
Gain in access to health:				
Reduced health related costs	0%	\$ 761,530,357.84	\$ 723,178,062.24	\$ 595,448,922.60
Total Present Value Benefits	0%	\$ 838,799,254.19	\$ 796,555,531.91	\$ 655,866,318.46
Total Present Value Costs	0%	\$ 743,849,119.78	\$ 706,387,289.10	\$ 581,623,769.03
Net Present Value Benefits	0%	\$ 94,950,134.41	\$ 90,168,242.81	\$ 74,242,549.43
Benefit-Cost Ratio	0%	1.128		

Table 5: Alternative 1 with free Circulator (2022\$)

		10 Year Project Operation		
		Rate of Interest: 2% Discount Rate	Rate of Interest: 3% Discount Rate	Rate of Interest: 7% Discount Rate
	Trend Assumed	Present Day Value	Present Day Value	Present Day Value
Costs				
Transportation expansion:				
Circulator	0%	\$ 90,178,802.85	\$ 85,637,205.70	\$ 70,511,793.05
Benefits				
Reduced transportation related costs:				
Mileage/depreciation	0%	\$ 877,743.17	\$ 833,538.15	\$ 686,316.99
Time savings	0%	\$ 76,391,153.18	\$ 72,543,931.52	\$ 59,731,078.86
Total Present Value Benefits	0%	\$ 77,268,896.36	\$ 73,377,469.67	\$ 60,417,395.86
Total Present Value Costs	0%	\$ 90,178,802.85	\$ 85,637,205.70	\$ 70,511,793.05
Net Present Value Benefits	0%	\$ (12,909,906.49)	\$ (12,259,736.02)	\$ (10,094,397.20)
Benefit-Cost Ratio	0%	0.857		

Table 7: Monte Carlo analysis on preferred policy alternative (n = 10,000)

	BCR	EANB	NPV (Benefits)
95% Confidence Interval	0.35	\$ (37,123,721)	\$ (552,307,220)
	2.01	\$ 60,087,694	\$ 893,953,154
Mean	1.19	\$ 9,036,686	\$ 134,443,070
Std. Error	0.00	\$ 234,666	\$ 3,491,242
Median	1.21	\$ 8,002,430	\$ 119,055,947
Standard Deviation	0.44	\$ 23,466,631	\$ 349,124,210
Min	0.08	\$ (74,208,614)	\$ (1,104,036,783)
Max	2.42	\$ 97,207,327	\$ 1,446,199,557
Cost-Beneficial Simulations	65.90%		

Table 8: Monte Carlo analysis on Alternative 1 (n = 10,000)

	BCR	EANB	NPV (Benefits)
95% Confidence Interval	0.23	\$ (3,517,507)	\$ (52,331,615)
	2.27	\$ 5,111,795	\$ 76,050,603
Mean	1.06	\$ 200,094	\$ 2,976,891
Std. Error	0.01	\$ 22,435	\$ 333,770
Median	1.00	\$ 14,115	\$ 209,996
Standard Deviation	0.52	\$ 2,243,457	\$ 33,376,982
Min	0.02	\$ (4,727,982)	\$ (70,340,438)
Max	3.68	\$ 10,543,773	\$ 156,864,722
Cost-Beneficial Simulations		50.21%	

(This space left intentionally blank.)

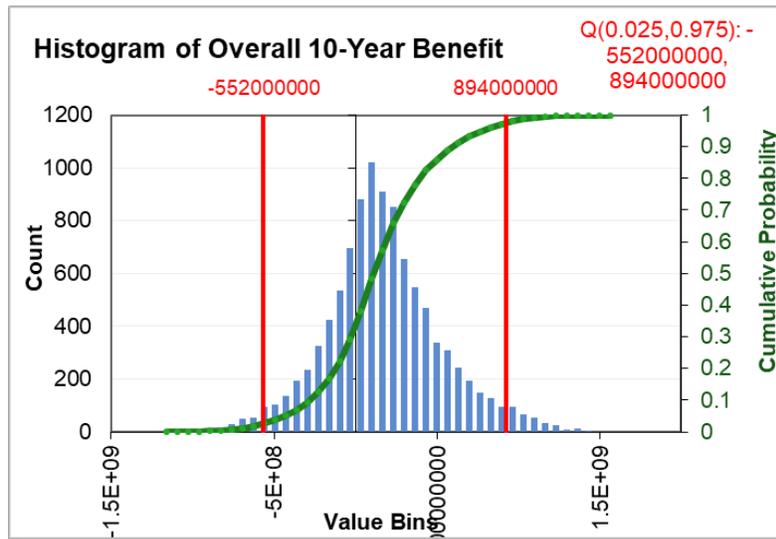
Table 9: Monte Carlo analysis on Alternative 2 (n = 10,000)

	BCR	EANB	NPV (Benefits)
95% Confidence Interval	0.27	\$ (38,009,868)	\$ (565,490,848)
	2.13	\$ 60,749,689	\$ 903,801,971
Mean	1.20	\$ 8,891,424	\$ 132,281,941
Std. Error	0.00	\$ 236,984	\$ 3,525,718
Median	1.21	\$ 7,569,191	\$ 112,610,452
Standard Deviation	0.49	\$ 23,698,360	\$ 352,571,755
Min	0.03	\$ (78,086,361)	\$ (1,161,727,874)
Max	2.63	\$ 103,428,692	\$ 1,538,757,771
Cost-Beneficial Simulations	65.79%		

Table 10: Varying discount rates for preferred alternative (2022\$)

		10 Year Project Operation		
		Rate of Interest:	Rate of Interest:	Rate of Interest:
		2% Discount Rate	3% Discount Rate	7% Discount Rate
	Trend Assumed	Present Day Value	Present Day Value	Present Day Value
Costs				
Transportation expansion:				
Circulator	0%	\$ 69,204,731.42	\$ 65,719,433.31	\$ 54,111,937.02
Nutrition education:				
Program materials	0%	\$ 12,927,926.08	\$ 12,276,848.10	\$ 10,108,486.91
Staffing	0%	\$ 308,117,268.08	\$ 292,599,824.26	\$ 240,920,264.60
Time lost in program	0%	\$ 332,625,122.78	\$ 315,873,411.05	\$ 260,083,224.46
Benefits				
Reduced transportation related costs:				
Mileage/depreciation	0%	\$ 877,743.17	\$ 833,538.15	\$ 686,316.99
Time savings	0%	\$ 76,391,153.18	\$ 72,543,931.52	\$ 59,731,078.86
Gain in access to health:				
Reduced health related costs	0%	\$ 761,530,357.84	\$ 723,178,062.24	\$ 595,448,922.60
Total Present Value Benefits	0%	\$ 838,799,254.19	\$ 796,555,531.91	\$ 655,866,318.46
Total Present Value Costs	0%	\$ 722,875,048.35	\$ 686,469,516.72	\$ 565,223,912.99
Net Present Value Benefits	0%	\$ 115,924,205.84	\$ 110,086,015.20	\$ 90,642,405.47
Benefit-Cost Ratio	0%	1.160		

Figure 8: Monte Carlo Analysis on Preferred Policy Alternative



(This space left intentionally blank.)

MIND THE GAP: EXPLORING AND BRIDGING ECONOMIC INEQUITY IN THE U.S.

Ashraya Kalavakunta

Abstract

Economic inequity is a growing problem in the United States with a complex array of causes. Part 1 of this paper examines the U.S. tax structure and the gradual shift of average tax rates from a progressive to a mostly proportional system that becomes regressive towards ultra-wealthy groups. Part one also explores the causes of this structural shift which are key components of rising economic inequities. Some notable causes include financial information asymmetry with the public, the inequitable burden of taxes on working-class Americans, and the influence of powerful wealthy actors in maintaining the status quo. As the causes of economic inequity interact, it results in stagnant wages for working-class Americans as cost-of-living increases. This results in increased difficulties for low-to-mid-income communities to save money. These causes result in policy implementations that benefit ultra-wealthy communities, often at the expense of the rest of the public. A problem as complex as economic inequity must be addressed with multiple policy alternatives that meet the criteria of efficiency, equitability, and feasibility. Part 2 of this paper explores some of these alternatives through the lens of the criteria. Specifically, part two proposes the following alternatives to combat rising economic inequities: restructuring the IRS to be more transparent, empowering low-income communities to save money, and tax adjustments to represent what most Americans support.

Part 1: Problem Analysis

Introduction to the Problem

A strong tax system is an important structural component of a nation. Public education, urban infrastructure, emergency services, healthcare provisions, and more are government services financed through taxes, which are essential for maintaining socioeconomic equity. Adequately funding government services not only empowers financially insecure communities but bolsters economic activity for all communities. An efficient and equitable tax structure ensures these public services are adequately funded by (1) minimizing tax evasion and avoidance, (2) ensuring the burden of taxes is distributed impartially among income groups, and (3) effectively budgeting tax revenue to fund government services. However, the consistent underfunding of U.S. government services along with the vast and growing wealth gap between income groups underscores inequitable and inefficient current U.S. economic policies. Economic inequity is exacerbated by several drivers, but most notably the inadequate understanding of tax policies by the public, the inequitable burden of taxes on working-class Americans, and the influence of powerful interest groups who maintain the status quo. These socioeconomic drivers can be addressed with efficient, equitable, and politically feasible policy alternatives such as the restructuring of the IRS, the empowerment of low-income communities to save money, and the adjustment of tax policies to represent what the majority of Americans support. Part 1: Problem Analysis will analyze published literature and quantitative data to understand the causes and consequences of economic inequity.

Background

The U.S. tax system uses marginal tax rates (MTR), a system that uses income brackets to categorize one's earnings before assigning tax rates. For instance, the first 9,525 dollars an individual earns falls into the lowest IRS tax bracket and is taxed 10 percent. The next 29,174 dollars they earn falls into the second bracket and is taxed 12 percent. This pattern continues until one's income hits the highest bracket requiring a 37 percent tax for any income earned past 500,001 dollars. When analyzed through the lens of MTR, the U.S. tax system is considered progressive. A progressive tax structure takes a larger percentage of taxes from high-income earners than from low-income earners. But through the lens of average tax rates, many researchers argue the U.S. tax system is a proportional flat tax that becomes regressive towards ultra-wealthy income groups (Figure 1). A proportional or flat tax is structured to tax all citizens equally regardless of income level and a regressive tax structure takes a larger percentage of income from low-income earners than high-income earners. In contrast to MTR, the average tax rate is the total amount of tax paid divided by the total base. For example, a family that has

a total income of \$100,000 and pays \$30,000 in income tax would result in an average tax rate of 30 percent. Average tax rates are typically used to measure the tax burden while marginal tax rates are used to measure the impact of taxes on incentives to earn, save, invest, or spend.

Figure 1: Average Tax Rates by Income Groups (Percent of Pre-Tax Income)

Source: Saez and Zucman 2020. *The Rise of Income and Wealth Inequality in America.*

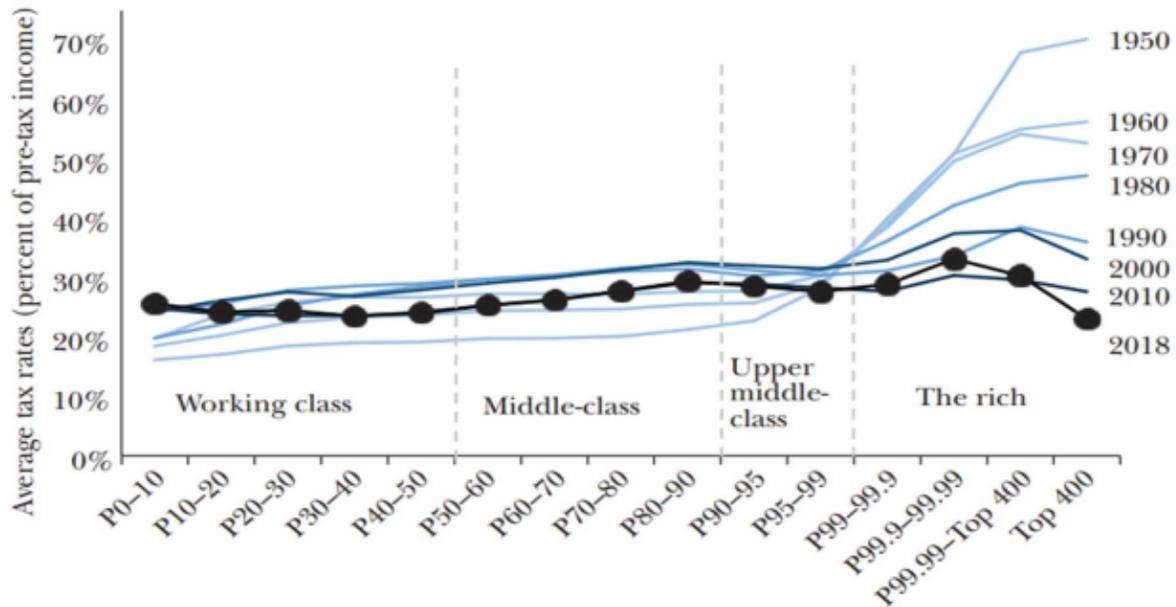
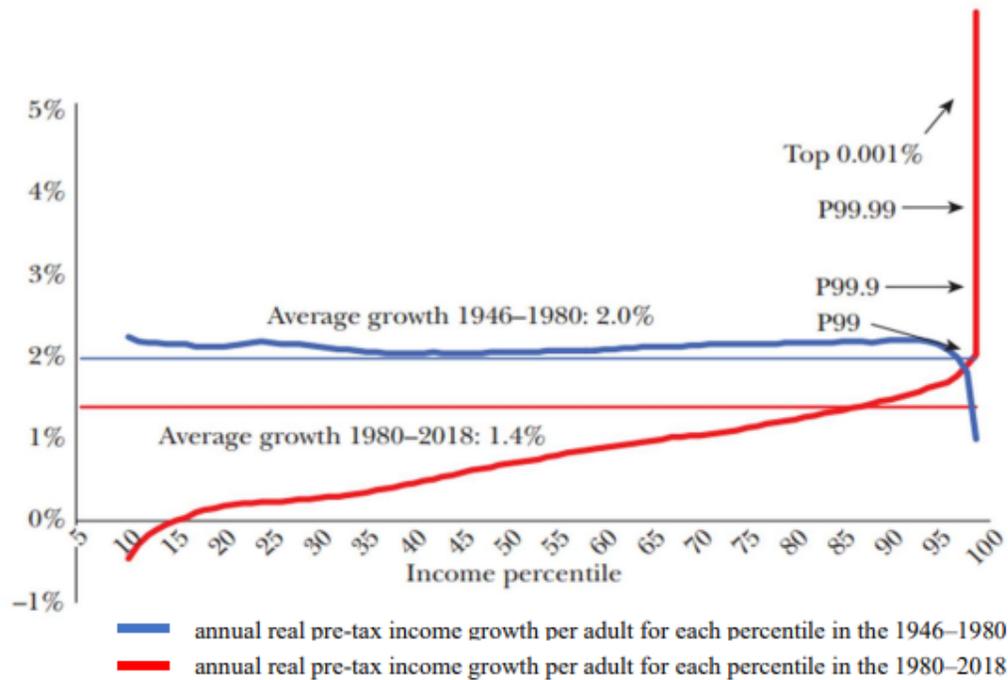


Figure 1 reveals how U.S. policies have decreased the average tax rate, or tax burden, for wealthy communities from 1950 to 2018—to the point where the top 1 percent currently pays less in income taxes than any other income group. This divide was not as prevalent in the past because corporate profits, the main source of income for the rich, used to be subject to a 50 percent tax rate in the 1950s, and marginal individual tax rates for the rich used to be at 91 percent up until 1963 (Saez and Zucman, 2020). High marginal individual income tax rates helped prevent business owners from deploying tax avoidance strategies to bypass corporate tax. Additionally, high incomes were subject to progressive individual income tax on realized capital income, as well as a progressive estate tax at the time of death. Meanwhile, regressive payroll taxes were much lower than they are today, resulting in a lower tax burden on low-income households. This combination of lower payroll taxes, higher MTR, corporate taxes, and estate taxes minimized legal loopholes for tax avoidance and progressively distributed the tax burden from the 1950s to the 1980s.

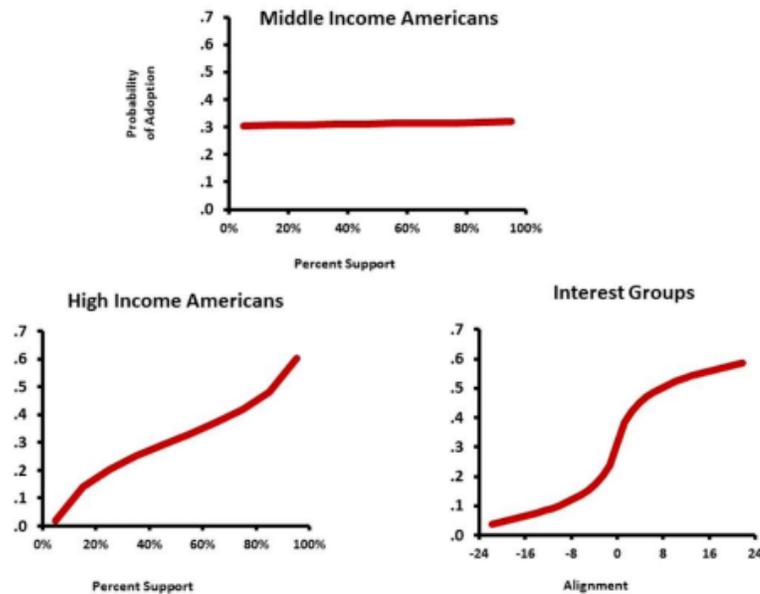
However, after the 1980s and especially in 2018, trends shifted. A proportional flat tax became regressive towards ultra-wealthy groups. The disparity of wages between working-class and wealthy Americans is one contributor to this change. As seen in Figure 2, between 1980 and 2018, the average pre-tax income for the bottom 50 percent of income earners remained fairly stagnant, while the top 1 percent experienced rapid growth. Data compiled by Saez and Zucman reveal that the bottom 50 percent of income earners experienced a 0.2 percent annual increase in pretax income from 1980 to 2019. That would be an increase from a \$17,500 pre-tax salary in 1980 to \$18,500 in 2018. This is significantly less than the 1.4 percent national average in annual income growth from 1980 to 2018. Additionally, it pales in comparison to the income growth of the top 1 percent of earners from 1980 to 2018. The top 10 percent of income earners are on par with the national average of 1.4 percent annual income growth, while the top 1 percent experienced an annual income growth from 2 to over 5 percent. Figure 2 depicts these trends.

Figure 2: Average Income Growth Rates of Pre-Tax IncomeSource: Saez and Zucman 2020. *The Rise of Income and Wealth Inequality in America.*

Economic inequity is exacerbated as incomes for working-class Americans remain stagnant, the cost of living rises, and it becomes harder for certain income groups to build generational wealth. There is abundant literature highlighting how it is increasingly difficult in today's economy for low-to-mid income Americans to save money. A 2014 article by Thompson in *The Atlantic* (2014) reveals that median wages for people between the ages of 18 and 34 have fallen in almost every major industry since the 2007 Great Recession. This does not necessarily mean wages are decreasing, but that wages are failing to keep up with rising inflationary costs of basic goods like health care, education, housing, and more. Ultimately, as young professionals in their twenties pass into their thirties, they are saving and earning less than their older peers did during the same period. Meanwhile, the number of Americans with pension plans is decreasing. In 1980, two out of three American workers were guaranteed defined benefit pension plans with lifetime benefits from their employers, but by 2013 that number dropped to one in five Americans (Geoghegan, 2013). Not only do Americans lack retirement savings, but they are also unable to set aside emergency funds. A 2009 telephone survey of 1,488 American adults conducted by the National Financial Capability Study reveals that 40 percent of respondents reported a lack of rainy-day funds (Lusardi, 2011). This parallels 2009 data from the Global Economic Crisis survey, where 46 percent of Americans stated, "they would not be able to come up with \$2000 in a month's time if an unexpected need arose within the next month" (Lusardi, 2011).

Figure 3: Predicted Probability of Policy Adoption by Policy Disposition

Source: Gilens and Page 2014. Testing Theories of American Politics.



As a result of rising costs and stagnant wages, more than one in five Americans use alternative and costly borrowing methods like payday loans, advances on tax refunds, and pawn shops. While it provides a temporary solution for financial hardships, this behavior results in sizable interest payments and fees, making it harder to maintain adequate savings. A survey of Washington state residents found “people frequently did not understand the terms and conditions of consumer loans and mortgages” (Moore, 2003). The root of financial information asymmetry stems from an early age. A 2005 report from The National Council on Economic Education reported a widespread lack of knowledge regarding fundamental economic concepts among high school students, aligning with similar findings reported by the Jump\$tart Coalition for Personal Financial Literacy (Lusardi, 2011). This is concerning, as loans are commonplace for young students to finance growing higher education expenses. In 2003 and 2004, over 50 percent of full-time, full-year dependent undergraduates with family incomes below \$100,000 borrowed to pay for college (Berkner et al., 2005). A lack of financial education in high schools, coupled with the normalization of uninformed borrowing behavior, created a generation of indebted Americans. Additionally, uninformed borrowing behavior creates negative externalities that impact the entire economy. It causes product prices to remain high, diverts economic resources, and further strains existing social safety nets.

The most perceptible population to financial borrowing are those without a bank account since alternative forms of money management can generate larger fees. For example, 71 percent of unbanked individuals use money orders to pay bills, and 47 percent use check cashing services; both of which generate expenses and fees that can be avoided with a bank account (Lusardi, 2011). Although the unbanked population may seem fairly small in terms of the greater U.S. population, a disproportionate amount of the unbanked population are individuals already disadvantaged by systemic biases. For instance, though only 15 percent of Americans do not have a checking account and 28 percent do not have a savings account, 28 percent identify as Black, and 30 percent identify as Hispanic (Lusardi, 2011). 31 percent are low-income earners and 36 percent are those without a high school diploma.

The highest income earners and wealthy individuals are not subject to financial information asymmetry. They typically hire accountants and consultants to increase their financial stability and are actively involved in influencing tax policies that benefit wealthy high-income earners. The policies wealthy and high-income earners favor are often very different from what most Americans want. Yet, there is evidence that wealthy and high-income earners are more successful in influencing the U.S. political system than the rest of the public combined.

Figure 3 depicts Martin Gillen's data on 1,779 cases of federal policymaking. Each case is based on a national survey question to determine the policy preferences of Americans at varying income distribution levels. Cases cover varying policy issues from public education funding, U.S. involvement in Iraq, abolition of the estate tax, and more. The dependent variable, the probability of a policy being adopted, was analyzed using multiple regression and is based on whether there was a doctrine of policies in line with the policy proposal in the survey question. The independent variable examines the percentage of support from each set of actors: middle-income people, high-income earners, and organized interest groups.

The policy preferences of high-income Americans strongly influence a policy's probability of adoption. The likelihood of policy implementation is positively correlated with the percentage of high-income Americans that support that policy. In comparison, middle-income Americans do not have a strong influence on policy decisions. The probability of a policy being adopted is unaffected, whether zero percent or 100 percent of middle-income Americans support it. For interest groups, the curve remains under 0.3 probability for the left half of the graph and rises above 0.3 on the right half of the graph. When more interest groups organize in support of a policy, it is likely to be adopted. Additional data shows that business-oriented interest groups like those related to oil and finance are more influential than mass membership organizations like the NAACP and The Sierra Club.

The difference in political power between socioeconomic groups is the foundation of a growing wealth and income gap. Many drivers of economic inequity, like stagnant working wages, rising costs of living, decreases in corporate taxes, and top MTR, are due to minimal policy action. However, the percentage of millionaires who favor policies against these drivers is significantly less than the rest of the public. The Appendix details these policies and highlights how millionaires do not consistently support certain policies, even if the public does. Given that wealthy higher-income Americans have a disproportionate amount of political influence, it will be difficult to change policies that drive economic inequity until wealthy higher-income Americans decide to advocate against them.

Part 2: Solution Analysis

Solution Introduction

The growing divide between the rich and poor is a complex problem with varying actors and numerous drivers. No single policy solution can bridge the gap efficiently and equitably while maintaining political feasibility. However, a multitude of alternatives can be implemented to incrementally bridge the gap. Additionally, exploring options for addressing economic inequity is essential and will help ultimately establish the most effective combination of alternatives. Part 2 of this paper will analyze a few of these alternatives through the criteria of efficiency, equitability, and political feasibility. Specifically, the socioeconomic drivers of economic inequity can be addressed by the following alternatives: a restructuring of the IRS, the empowerment of low-income communities, and adjusting tax policies to reflect what the majority of Americans support.

Alternative: Restructure the IRS

A main driver of U.S. economic inequity lies in the incredibly complex and difficult-to-navigate American tax system. Americans spend on average 13 hours each year filing taxes, whereas Japanese taxpayers spend an average of 15 minutes (Kessler, 2013). Streamlining the IRS's complicated tax filing process is one way to minimize information asymmetry between the public and the tax system. In 2020, the GAO made nine recommendations for the IRS to be more efficient in processing third-party information reports. Taxpayers and third-party actors, such as employers, submit forms to the IRS that provide taxpayer information. When substantial third-party information reporting is made available by the IRS, taxpayers are more likely to correctly match and submit information. On the other hand, little information leaves taxpayers to unintentionally submit incorrect information, leaving them vulnerable to a noncompliance status. The GAO's report revealed that the IRS's ability to process third-party information is extremely limited due to outdated computer systems. Additionally, there is no specific office coordinating an approach to improve information reporting processes. The GAO made nine recommendations, including assigning a head department to revise IRS modernization plans, which have yet to be fully implemented. Instances like this highlight the importance of streamlining the tax process into a more transparent and efficient public system to minimize information asymmetry. Modernizing the IRS through technology updates and more is likely the first step to achieving efficiency and transparency in the

tax filing process.

This is important for economic equity, as the IRS is known for targeting low-income individuals for tax fraud. Of the 1.2 million audits the IRS conducted in 2016, more than 400,000 had annual incomes under \$25,000 (Mayo, 2022). Congressional watchdogs have questioned this pattern given the sums owed are relatively small. A 2012 GAO report revealed that if the “IRS shifted \$124 million from auditing poor filers to wealthier ones, it could bring in an additional \$1 billion of revenue” (Delaney 2017). In order to tackle economic inequity in the tax filing process, the IRS needs to streamline the efficiency of its administrative processes so Americans can confidently file their own taxes without reliance on expensive professional consultants. Additionally, the IRS must shift its focus on tax fraud to high-income and wealthy individuals who intentionally evade their taxes.

Restructuring the IRS to make the tax process easier to navigate is a policy alternative that meets efficiency and equity criteria. This alternative minimizes information asymmetry regarding taxes and alleviates the tax burden on low-to-moderate-income Americans by helping them avoid the consequences of a non-compliant status. However, political feasibility remains an issue. The IRS has failed to fully implement GAO recommendations due to limited resources, funding, labor, and time constraints. In contrast, corporate interest groups like Intuit and H&R Block, spend millions of dollars a year lobbying to maintain the status quo (Popken, 2017). This forces Americans to continue to rely on their tax products. If high-income earners and interest groups advocate for this issue it would greatly increase its feasibility. Unfortunately, the likelihood of the latter groups investing time and energy in this alternative is not probable, but if awareness for this issue and alternative grows, political feasibility will likely grow.

Alternative 2: Empower Communities

Certain communities are more perceptible to economic inequities due to systemic biases in our nation’s framework. Incorporating an alternative that supports the most marginalized communities will ensure the policy solution is long-lasting and sustainable. As mentioned in Part 1, financial borrowing is often done without a full understanding of the terms. This behavior negatively impacts the individual and their family and has negative externalities on the overall economy. Those who lack a bank account are more susceptible to financial borrowing and already marginalized communities are more likely to be unbanked or underbanked.

Research from the Federal Deposit Insurance Corporation (FDIC) shows that nationally, less than 12 percent of white households are unbanked or underbanked, while 36 percent of Black households and 33.4 percent of Hispanic households are unbanked or underbanked. Additionally, low-income individuals are more likely to be unbanked and underbanked. Communities face banking issues due to inadequate funds for minimum balance fees, distrust of financial institutions, or identification, credit, or banking history problems. Local organizations, like BankOn and AmericaSaves, motivate, encourage, and support low-to moderate-income American households to save money, reduce debt, and build wealth. They often work directly with national and regional financial institutions to encourage the widespread availability of safe, low-cost transactional products. The BankOn National Data Hub reports that more than 14.1 million certified bank accounts have been opened due to their outreach efforts. Of this population, 80 percent were consumers new to banks, opening their accounts for the first time. Additionally, there has been a 67 percent increase in accounts opened in the previous year, based on the most recent 2021 BankOn National Data Hub report.

Investing in local community organizations to address nuanced issues of economic inequity is an efficient, equitable, and feasible alternative. Organizations like BankOn and AmericaSaves empower low to mid-income Americans to save money and build generational wealth. These organizations combat information asymmetry by spreading financial awareness. For example, AmericaSaves encourages individuals to create a savings goal, then provides weekly tips, resources, and information to achieve them. Pairing community empowerment with other policy tools ensures equitability as marginalized groups are not overlooked in the solution. These organizations existing and showing promising results act as a case study for expansion and increase the likelihood of policymakers investing in this alternative.

Alternative 3: Adjust Tax Rates

In 1957, the top MTR under the U.S. federal individual income tax was 91 percent. This pales in comparison to today’s top MTR of 37 percent. The theory that strategic tax cuts incentivize rich people to earn more income which in turn benefits the entire economy, known as trickle-down economics, is meant to encourage

rich people to expand their businesses and create more jobs for working-class Americans. The tax cuts are also meant to encourage rich Americans to invest in new innovations that have the potential to greatly increase market activity. However, it is questionable whether the drastic decrease in top MTR these past few decades is truly a strategic tax cut for the greater good of the economy. Instead, it results from wealthy, high-income Americans using their political influence to maintain policies that benefit themselves at the expense of the rest of the public.

Evidence shows extraordinary U.S. economic growth during 1957 when MTR on the highest earners was at its highest. The average annual rate of productivity growth was 3.1 percent from 1951 to 1963 (Slemrod, 1998). When the top MTR dropped in 1981, the average annual rate of productivity growth also dropped to 1.5 percent. Further research on hidden variables affecting the economy needs to be analyzed before determining if U.S. tax cuts to the rich these last decades are responsible for creating or diminishing economic growth. Economists may debate the effects of taxing the rich, but cutting taxes for the rich is a vastly unpopular policy decision in the U.S. These policies passed multiple times despite a lack of public support and insinuates U.S. tax policies are partial to politically powerful wealthy groups and are not truly representative of the peoples' needs. It is imperative lawmakers change the current status quo to address the growing wealth and income gap.

In 1993, a Gallup poll revealed 75 percent of respondents believed wealthy people should pay more in taxes (Slemrod, 1998). Similarly, a 1993 Time Magazine/CNN poll found 79 percent of respondents support increasing taxes for families making more than \$200,000 a year (Slemrod, 1998). Gallup surveys Americans every year on this issue and asks respondents to answer whether each income group contributes their fair share, too much, or too little in taxes. For almost 25 years, at least 6 in 10 Americans agreed that upper-income Americans pay too little in taxes (Newport, 2022). Additional Gallup surveys conducted in 2013, 2015, 2016, and 2018 also document that the majority of Americans approve taxing the rich and redistributing wealth to address economic inequity. This data supports the notion that tax cuts for the rich occur due to the political influence of affluent communities. Altering past policies that were implemented despite a lack of public support is an important step toward changing the status quo. A proposed alternative is to increase top MTR in income taxes and redistribute the revenue to fund other alternatives that will bridge economic inequities.

Raising income taxes on the rich and redistributing that revenue to further address economic inequities is a promising alternative that is efficient, equitable, and feasible. Policies that reflect what the majority of Americans support redistributes political power back to the public. This alternative provides a source of funding for restructuring the IRS, investing in community empowerment programs, and other impactful alternatives. Furthermore, increasing taxes on the rich equitably distributes the tax burden across income groups. This alternative is somewhat feasible since higher top MTR was possible in the past.

Some obstacles to political feasibility include (1) the opposition from powerful affluent communities and (2) the argument that increased taxes disincentivize the rich from ensuring economic contributions. However, these obstacles can be overcome if increases in taxes occur slowly with full support from a large majority of the public. In fact, this policy alternative is so popular amongst the public that President Biden's campaign advisor advised the president to "talk loudly and proudly about raising taxes on the rich" in order to win more votes (Newport, 2021). Widespread public advocacy can push this alternative onto policy agendas, increasing its feasibility rating. Additionally, an incremental approach will allow researchers to study the economic benefits and consequences of raising taxes on the rich. The use of data to craft this alternative will ensure policy nuances, like the rate of increase for top MTR, are in fact efficient. This will disprove the opposition's claim that raising taxes for the rich significantly lowers economic activity. Ultimately, increasing top MTR redistributes political power, redistributes the tax burden, and provides revenue to fund other alternatives that combat economic inequity. It meets all three criteria of efficiency, equitability, and political feasibility.

Recommendations

Maintaining the status quo in economic inequity in the U.S. is the least effective and least equitable option. Choosing inaction is politically feasible at this time but will only worsen the ever-growing income and wealth gap. The status quo is not a recommended solution. Rather, a combination of policy tools including but not limited to the restructuring of the IRS, empowering local communities to save money, and adjusting tax policies to represent what the majority of Americans support, should work alongside one another to combat the complex causes of economic inequity. The costs associated with alternatives like restructuring the IRS and implementing

community empowerment programs lower the political feasibility of those policy tools, but when implemented with other alternatives like adjusting tax rates, they become more feasible. Adjusting tax rates to reflect public support is a prime opportunity to redistribute money from ultra-wealthy and high-income groups into other alternatives that will bridge economic inequity in the U.S.

What's more, lawmakers should increase the top MTR and use that revenue to fund alternatives. Future research should explore similar tax adjustment options, like the wealth tax proposed by Senator Sanders and Senator Warren, to further craft solutions. It is important to be mindful that wealthy, high-income actors hold an incredible amount of political influence and typically use that power to maintain the status quo. In order for alternatives to be feasible, the public and affluent actors must advocate for them. This is more likely to happen if the policies are introduced incrementally over time and gain significant media coverage. Media coverage will spread awareness on the issue and help garner public support while an incremental approach will increase support from politicians, policy makers, and maybe even affluent actors.

References

- America Saves*. (n.d.). Americasaves.org. Retrieved November 12, 2022, from <https://americasaves.org/>
- BankOn*. (n.d.). Joinbankon.org. Retrieved November 12, 2022, from <https://joinbankon.org/about/>
- Berkner, L., He, S., Lew, S., Cominole, M., Siegel, P., & Griffith, J. (2005). 2003-04 National Postsecondary Student Aid Study (NPSAS:04). Student financial aid estimates for 2003-04. NCES 2005-158. US Department of Education. <http://files.eric.ed.gov/fulltext/ED484516.pdf>
- Delaney, A. (2017, December 14). *Rich fraud, poor fraud: The GOP's double standard on tax mistakes*. HuffPost. https://www.huffpost.com/entry/gop-tax-bill_n_5a32c369e4b0ff955ad122b6
- Eugene Steuerle, C. (2020, January). *Should the tax system be used to reduce wealth inequality in the United States?* Tax Policy Center. <https://www.taxpolicycenter.org/event/should-tax-system-be-used-reduce-wealth-inequality-united-states>
- Geoghegan, T. (2013, October 2). *No More Unions, No More Pensions: Why It's Hard to Save*. New York Times. <https://www.nytimes.com/roomfordebate/2011/02/08/why-americans-cant-save-money/no-more-unions-no-more-pensions-whys-its-hard-to-save>
- Gilens, M., & Page, B. I. (2014). *Testing theories of American politics: Elites, interest groups, and average citizens*. *Perspectives on Politics*, 12(3), 564–581. <https://doi.org/10.1017/s1537592714001595>
- Hyman, D. (2020). *Public finance: A contemporary application of theory to policy* (12th ed.). South-Western College Publishing.
- Kessler, G. (2013, April 13). *Claims about the cost and time it takes to file taxes*. Washington Post (Washington, D.C.: 1974). https://www.washingtonpost.com/blogs/fact-checker/post/claim-s-about-the-cost-and-time-it-takes-to-file-taxes/2013/04/13/858a97fc-a455-11e2-9c03-6952ff305f35_blog.html
- Lusardi, A. (2011). *Americans' financial capability*. National Bureau of Economic Research.
- Mayo, D. (2022, August 12). *Will the inflation reduction act increase IRS tax audits?* Forbes. <https://www.forbes.com/sites/danielmayo/2022/08/12/will-the-inflation-reduction-act-increase-irs-tax-audits/?sh=735c3ba2513d>
- Moore, D. L. (2003). Survey of financial literacy in Washington state: knowledge, behavior, attitudes, and experiences. <https://doi.org/10.13140/2.1.4729.4722>
- Newport, F. (2022, August 12). *Average American remains OK with higher taxes on rich*. Gallup. <https://news.gallup.com/opinion/polling-matters/396737/average-american-remains-higher-taxes-rich.aspx>
- Saez, E., & Zucman, G. (2020a). The rise of income and wealth inequality in America: Evidence from distributional macroeconomic accounts. *The Journal of Economic Perspectives: A Journal of the American Economic Association*, 34(4), 3–26. <https://doi.org/10.1257/jep.34.4.3>
- Saez, E., & Zucman, G. (2020b). *The triumph of injustice the triumph of injustice: How the rich dodge taxes and how to make them pay*. WW Norton.
- Slemrod, J. (1998). The Economics of Taxing the Rich. NBER Working. <https://doi.org/10.3386/w6584>

- Thompson, D. (2014, December 3). *The incredible shrinking incomes of young Americans*. Atlantic Monthly. <https://www.theatlantic.com/business/archive/2014/12/millennials-arent-saving-money-because-theyre-not-making-money/383338/>
- TurboTax and H&R Block profit by blocking you from free, easy returns*. (2017, March 23). NBC News. <https://www.nbcnews.com/business/taxes/turbotax-h-r-block-spend-millions-lobbying-us-keep-doing-n736386>
- U.S. Government Accountability Office. (2020, December 15). *Tax administration: Better coordination could improve IRS's use of third-party information reporting to help reduce the tax gap*. Gao.gov. <https://www.gao.gov/products/gao-21-1>

HEALTH AND URBAN GREEN SPACE DISPARITIES IN COMMUNITIES OF COLOR: THE IMPACT OF HISTORIC REDLINING

Breckyn Ryg

Abstract

Historic redlining was born from federally funded, racist policies that disenfranchised many Black and other minoritized communities from single-family homeownership in the suburbs. The majority of these redlined neighborhoods are still segregated and suffering today (Best & Mejía, 2022). Moreover, these 80-year-old policies continue to shape the disparate landscape of present-day communities. Formerly redlined neighborhoods are associated with poorer economic, health, and environmental outcomes, including higher rates of chronic illnesses and lower availability of green space (Lloyd, 2021; Nardone, et al., 2021). Coincidentally, many disparate health outcomes may be abated by the proliferation of urban green space, which has been linked to a wealth of physical, mental, public health, and social benefits (University of Leeds, 2014). Evidence supporting the association among redlining, health inequities, and lack of urban green space continues to rise. This paper explores how urban green space may mitigate the varying health disparities inflicted by systemically racist policies such as historic redlining.

History and Impact of Redlining

Redlining was born from a series of federally funded, racist policies that disenfranchised many Black and other minoritized communities from single-family homeownership in the suburbs. After the Great Depression, the government hoped to stimulate the economy by proposing a series of programs and projects titled the “New Deal.” Among these, the Federal Housing Administration (FHA) was created to encourage homeownership via federally backed, guaranteed mortgages; however, these subsidies were exclusive to White homeowners in White-only neighborhoods (Little, 2021). The National Housing Act of 1934 explicitly instructed lenders to refuse mortgage loans in and around predominantly Black areas – forcing Black Americans out of suburban communities and into urban housing projects (Rothstein, 2017). In order to assess the risk of their mortgage investments, the federal Home Owners’ Loan Corporation (HOLC) created color-coded maps to rank the risk and loan worthiness of different neighborhoods. A rank of “D” signified a hazardous area at risk of defaulting on a loan or decreasing property value: it was then outlined in red (Jackson, 2021). The HOLC considered factors such as the “infiltration of: Negroes [and] Foreigners,” the presence of families living on government relief, or encroachment of industrial buildings to be undesirable influences on neighborhood grades (Nelson, et al., 2022, para. 5). On the contrary, a rank of “A” signified areas of minimal risk for banks: they were then outlined in green (Gross, 2017). A-grade neighborhoods were considered the most desirable due to the presence of wealthy White men (Nelson, et al., 2022). In addition, the FHA subsidized the mass-production of White subdivisions, requiring that the homes were only sold to White families. The practice of redlining introduced a state-sponsored system of segregation (Rothstein, 2017). Consequently, the New Deal was dealt exclusively to White Americans.

These 80-year-old policies continue to shape the disparate landscape of present-day communities. The majority of these redlined neighborhoods are still segregated and disenfranchised today (Best & Mejía, 2022). 74 percent of redlined neighborhoods are still low-to-moderate income, while 64 percent of redlined neighborhoods are still predominantly inhabited by people of color. Furthermore, redlined neighborhoods are significantly associated with greater income inequality and hypersegregation than non-redlined neighborhoods in the same city, with the least changes found in the South and Midwest regions of the U.S. (Mitchell & Franco, 2018). Meanwhile, 91 percent of FHA’s best ranked neighborhoods are still middle-to-upper income today, while 85 percent are still predominantly White (Jan, 2018). In fact, the current income-to-wealth ratio between White and Black Americans demonstrates a similar disparity: while Black incomes are approximately 60 percent of White incomes, Black wealth is only 5 percent of White wealth (meanwhile, Latino wealth is around 9 percent of White wealth). Since most wealth in this country is gained through home equity, this wealth disparity is almost entirely attributable to racist federal housing policies such as redlining (Gross, 2017).

The 45 million Americans living in redlined neighborhoods are suffering from a variety of poorer outcomes than their greenlined counterparts (Nardone, et al., 2021). Unfortunately, these red and green lines are almost identical to the segregated lines of White and Black in America. Beyond economic disparities, historically redlined neighborhoods are also associated with a variety of health and environmental disparities, including higher levels of air and noise pollution, rising temperatures, heat islands, food deserts, chronic illnesses, and COVID-19 symptom severity. These neighborhoods have higher levels of social vulnerability and poorer health outcomes compared to more well-off communities in the same cities. Residents of formerly redlined communities experience lower life expectancies and increased rates of diabetes, obesity, high blood pressure, and pulmonary disease (Godoy, 2020). HOLC grade is also associated with air pollution: redlined areas are exposed to over 50 percent higher levels of nitrogen dioxide than greenlined areas (Fears, 2022).

Continually, redlined neighborhoods are less walkable, have more paved surfaces, and have less urban green space, biodiversity, and tree canopy – all of which serve to remedy the many environmental and health inequities plaguing redlined neighborhoods. On average, formerly greenlined neighborhoods have twice as much tree coverage as those that were redlined (Leahy & Serkez, 2021). In cities like Richmond, VA, the disparities are even more striking: green lined neighborhoods have around 42 percent tree cover, while redlined neighborhoods (which are still majority Black and poor) have around 12 percent of tree cover (Casey, et al., 2017; Nardone, et al., 2021; Plumer & Popovich, 2020). Today, the rich enjoy almost 50 percent more greenery in their environments compared to low-income communities. Trees cover about 34 percent of the surface in predominantly White areas; meanwhile, trees cover only 19 percent of the surface in communities of color. Moreover, low socioeconomic groups – such as those concentrated in redlined neighborhoods – have been shown to reap greater benefits from urban green space compared to high socioeconomic groups, especially in stress reduction and improved mental health outcomes (European Environment Agency, 2022). The continued lack of access to quality, biodiverse green space among low-income and minority neighborhoods demonstrates how systemic racism and classism have contributed to significant health inequities. Deeply entrenched residential segregation, given its association with increased exposure to environmental hazards and decreased access to health-promoting resources, is a unique catalyst of racial health disparities. Urban green space could be the remedying resource to promote more equitable health outcomes in these communities (Nardone, et al., 2021).

Urban Green Space and Health Outcomes

Urban green spaces and urban greenness measure the vegetation and ecosystems covering the land in urban areas, including grass, trees, shrubs, streams, or other plant and water vegetation (Government of Canada, 2021; World Health Organization Regional Office for Europe, 2017). Urban green spaces provide a host of health, economic, social, and environmental benefits. Spending time in green spaces has been associated with lower stress levels, longer life expectancies, lower premature mortality rates, and reductions in mortality and morbidity from chronic diseases. Research suggests that spending two hours or more per week in green spaces can help maintain good health and well-being, which may reduce the need to treat a variety of physical and mental health conditions. Green spaces are also known to have positive impacts on blood pressure, pregnancy outcomes, and mental health; they encourage exercise, physical and social activity, and stronger neighborhood relationships (Barton & Pineo, 2009; European Environment Agency, 2022; Nieuwenhuijsen, 2021). The profound health disparities in America could be greatly mitigated by the equitable distribution of these benefits. On average, Black Americans have shorter life expectancies, higher maternal mortality rates, poorer pregnancy outcomes, and higher rates of mortality and morbidity from chronic diseases than their White counterparts (Arias et al., 2021; The Commonwealth Fund, 2021). Access to green space could abate many inequities related to the social determinants of health.

Additionally, urban green spaces provide a variety of environmental benefits such as reducing urban heat islands, offsetting greenhouse gas emissions and air pollutants, and mitigating stormwater and potential flooding (Lee, Jordan, & Horsley, 2015). Forest-like green spaces can sequester carbon dioxide in the atmosphere, while urban vegetation results in an overall reduction in air pollution – thus improving air quality and regulating temperatures. Around the country, people of color are exposed to pollutants at rates 20 percent higher than the national average, while White people are exposed at rates 15 percent lower than the national average: a disparity of almost 40 percent, which could be greatly abated by more equitable, carbon-sequestering green space (Lloyd,

2021). Since urban green areas are about 2°F cooler than similar regions in the same city, these spaces can also help reduce energy use in nearby buildings, combat urban heat islands, and mitigate heat-related mortality. During a heat wave, an increase of the temperature by even 1 degree can increase the risk of dying by 2.5 percent. Urban green space proliferation would greatly benefit historically redlined neighborhoods, which are an average of 5°F hotter in the summer than other areas. In some neighborhoods, temperatures are 15°F higher than wealthier, whiter neighborhoods: a 37.5 percent increase in the risk of dying from heat exposure based on neighborhood alone (Zhong & Popovich, 2022).

Furthermore, urban green spaces improve water quality and reduce flood risk by storing and filtering water. Cleaner waterways and water sources would also assist the 130 million people in the U.S. who do not have access to clean drinking water – the majority of which are people of color. In fact, throughout the nation, inequitable access to drinking water is most strongly predicted by race (NRDC, 2019). Moreover, Black and Hispanic people are more likely to live in high-risk flood zones, which will continue to worsen along with global climate change (Bakkensen & Ma, 2020). Green areas also promote wildlife and habitat preservation, thus contributing to conservation efforts of biodiverse spaces that continue to promote physical and mental health outcomes. Lastly, urban green spaces have significant economic impacts and are linked to 5 to 7 percent higher commercial and residential property prices than otherwise equivalent properties (University of Leeds, 2014). More equitable distribution of green space would thus contribute to more equitable distribution of real estate value. Overall, urban green space helps supply cleaner environments, lower temperatures, fewer natural disasters, and greater well-being – thus abating many racialized health disparities exacerbated by racist policies such as redlining.

In response to the overwhelming evidence of the benefits of urban green space, the WHO has recommended the “3-30-300 rule” for urban greenery: everyone should be able to see at least 3 trees from their home; every neighborhood should have at least 30 percent tree cover; and everyone should have access to at least 2 acres of green space within 300 meters (0.2 miles) of their home (European Environment Agency, 2022). However, over 60 percent of the European population has insufficient access to green space by these standards; an estimated 43,000 premature deaths could be prevented each year if these standards were met (Nieuwenhuijsen, 2021). In the U.S., over 100 million people (around 30 percent of the population), including 28 million kids, do not have a park within a 10-minute walk from home (Trust for Public Land, 2022). Since parks are a common source of urban green space, access to parks is an important marker of green space equity.

Although green spaces are a health-promoting neighborhood asset, they are notoriously lacking in disadvantaged, disenfranchised, and historically redlined communities. Neighborhoods with a higher proportion of racial and ethnic minorities not only have less greenness but are also losing more greenness over time. Moreover, vegetation density has been shown to comparatively decrease as the concentration of poverty in an area increases (Casey, et al., 2017). The correlation between urban tree cover and income is well-documented all over the world—from Detroit, to Johannesburg, to Mexico City. Decades-old infrastructure decisions that unfairly benefitted rich neighborhoods are still present today. Since urban forests provide a variety of benefits to people, the amount of tree cover in urban neighborhoods may significantly contribute to inequitable wealth and health outcomes (Grinspan, et al., 2020).

Conclusion and Recommendations

By 2050, 89 percent of the U.S. population and 68 percent of the world population are projected to live in urban areas (Center for Sustainable Systems, University of Michigan, 2021). Since two thirds of the urban areas that will exist by 2030 have yet to be built, effective and equitable urban planning is vital to ensuring healthy and sustainable urban environments (University of Leeds, 2014). Urban green spaces – and the host of benefits they provide – are an increasingly important commodity for our ever-urbanizing and globalizing world. Many organizations have published guides detailing the importance of prioritizing and protecting urban forests and green spaces in urban planning, while also accounting for the needs of surrounding communities to ensure they are not disenfranchised further.

The World Resources Institute (WRI) cautions against the risk of green gentrification, where green infrastructure may create barriers to equal access or fuel socioeconomic exclusion by “transforming the neighborhood without addressing the needs and preferences of current residents” (Grinspan, et al., 2020, para.

13). In building greener and more inclusive cities, the WRI suggests that cities take a few crucial steps in ensuring that the benefits of urban green spaces are also drivers of social equity. These steps include establishing strong political leadership, engaging communities meaningfully, and developing innovative funding models. This way, cities can prioritize long-term social benefits of underserved communities, ensure local buy-in and agency in urban green projects, and protect against gentrification. For instance, Washington, D.C. has developed a Green Collar Jobs Initiative to help residents and businesses take advantage of the economy's growing green sector (DC Office of Planning, n.d.). The city also utilized effective community engagement to create an Equitable Development Plan for its 11th St Bridge Park. By including brainstorming sessions with key stakeholders, large public sessions, and online consultation, they were able to broaden the initial focus on affordable housing to include cultural and political equity, workforce development, and small business enterprises (Grinspan, et al., 2020). Similar initiatives may be implemented around the country to prevent green gentrification as cities develop more environmentally conscious planning efforts.

Urban green space can also be locally supplemented by pocket gardens, domestic gardens, and increasing individual and commercial growth of native plants. Tree Equity Score estimates that it will take 522 million more trees to achieve an equitable balance of greenery in every urban neighborhood (American Forests, n.d.). Programs and collaborations such as the D.C. government's work with RiverSmart Homes encourages local and private interest in tree planting by providing free shade trees to residents at no cost and with no limit. The city also promotes a Tree Rebate Program for further tree planting and supplies tree permits for residents and businesses looking to plant trees in surrounding sidewalks (Department of Energy & Environment, 2022). Encouraging local buy-in will help decentralize the urban green space effort and relieve some of the pressure from local governments, thus accelerating potential progress towards green space equity.

However, government support will be an essential building block in achieving these goals. Cities can address urban tree equity through infrastructure legislation and program support for housing, energy, transportation, and urban forestry (Leahy & Serkez, 2021). Ensuring equitable access to urban greenery will have a profound impact on mitigating potentially lifesaving health, environmental, social, and economic outcomes for many Black and Brown communities in urban areas. Efforts to achieve urban green space and health equity will only continue to support disenfranchised and minority communities. We must prioritize and secure the right to accessible parks, forests, and natural spaces for the well-being of all our nation's citizens – not just the White and the wealthy.

References

- American Forests. (n.d.). *Tree equity score*. Tree Equity Score. Retrieved January 30, 2023, from <https://treeequityscore.org/about/>
- Arias, E., Tejada-Vera, B., Ahmad, F., & Kochanek, K. (2021). *Vital Statistics Rapid Release Provisional Life Expectancy Estimates for 2020*. <https://www.cdc.gov/nchs/data/vsrr/vsrr015-508.pdf>
- Bakkensen, L. A., & Ma, L. (2020). Sorting over flood risk and implications for policy reform. *Journal of Environmental Economics and Management*, 104, 102362. <https://doi.org/10.1016/j.jeem.2020.10236>
- Barton, S., & Pineo, R. (2009, January 31). *HUMAN BENEFITS OF GREEN SPACES*. Retrieved from University of Delaware: <https://www.udel.edu/academics/colleges/canr/cooperative-extension/fact-sheets/human-benefits-of-green-spaces/>
- Best, R., & Mejía, E. (2022, February 9). *The Lasting Legacy Of Redlining*. Retrieved from FiveThirtyEight: <https://projects.fivethirtyeight.com/redlining/>
- Casey, J. A., James, P., Cushing, L., Jesdale, B. M., & Morell-Frosch, R. (2017). Race, Ethnicity, Income Concentration and 10-Year Change in Urban Greenness in the United States. *Int J Environ Res Public Health*, 1546.
- Center for Sustainable Systems, University of Michigan. (2021). *U.S. Cities Factsheet*. Retrieved from University of Michigan Center for Sustainable Systems: <https://css.umich.edu/publications/factsheets/built-environment/us-cities-factsheet#:~:text=It%20is%20estimated%20that%2083,to%20live%20in%20urban%20areas.>
- DC Office of Planning. (n.d.). *Green Collar Jobs Initiative*. planning.dc.gov. Retrieved February 16, 2023, from <https://planning.dc.gov/page/green-collar-jobs-initiative>

- Department of Energy & Environment. (2022). *RiverSmart Homes - Shade Tree Planting*. Retrieved from Department of Energy & Environment: <https://doee.dc.gov/service/riversmart-homes-shade-tree-planting>
- European Environment Agency. (2022, February 21). *Who benefits from nature in cities? Social inequalities in access to urban green and blue spaces across Europe*. Retrieved from European Environment Agency: <https://www.eea.europa.eu/publications/who-benefits-from-nature-in>
- Fears, D. (2022, March 9). *Redlining means 45 million Americans are breathing dirtier air, 50 years after it ended*. Retrieved from The Washington Post: <https://www.washingtonpost.com/climate-environment/2022/03/09/redlining-pollution-environmental-justice/>
- Godoy, M. (2020, November 19). Retrieved from NPR: <https://www.npr.org/sections/health-shots/2020/11/19/911909187/in-u-s-cities-the-health-effects-of-past-housing-discrimination-are-plain-to-see>
- Government of Canada. (2021, August 17). *Study: Urban greenness*. <https://www150.statcan.gc.ca/n1/daily-quotidien/210817/dq210817b-eng.htm>
- Grinspan, D., Pool, J.-R., Trivedi, A., Anderson, J., & Bouyé, M. (2020, September 29). *Green Space: An Underestimated Tool to Create More Equal Cities*. Retrieved from World Resources Institute: <https://www.wri.org/insights/green-space-underestimated-tool-create-more-equal-cities>
- Gross, T. (2017, May 3). *A 'Forgotten History' Of How The U.S. Government Segregated America*. Retrieved from NPR: <https://www.npr.org/2017/05/03/526655831/a-forgotten-history-of-how-the-u-s-government-segregated-america>
- Jackson, C. (2021, August 17). *What Is Redlining?* Retrieved from The New York Times: <https://www.nytimes.com/2021/08/17/realestate/what-is-redlining.html>
- Jan, T. (2018, March 28). *Redlining was banned 50 years ago. It's still hurting minorities today*. Retrieved from The Washington Post: <https://www.washingtonpost.com/news/wonk/wp/2018/03/28/redlining-was-banned-50-years-ago-its-still-hurting-minorities-today/>
- Leahy, I., & Serkez, Y. (2021). *Since When Have Trees Existed Only for Rich Americans?* Retrieved from The New York Times: <https://www.nytimes.com/interactive/2021/06/30/opinion/environmental-inequity-trees-critical-infrastructure.html>
- Lee, A. C., Jordan, H. C., & Horsley, J. (2015). Value of urban green spaces in promoting healthy living and wellbeing: prospects for planning. *Risk Manag Healthc Policy*, 131-137.
- Little, B. (2021, June 1). *How a New Deal Housing Program Enforced Segregation*. Retrieved from History: <https://www.history.com/news/housing-segregation-new-deal-program>
- Lloyd, R. (2021, April 28). *People of Color Breathe More Unhealthy Air from Nearly All Polluting Sources*. Retrieved from Scientific American: <https://www.scientificamerican.com/article/people-of-color-breathe-more-unhealthy-air-from-nearly-all-polluting-sources/>
- Mitchell, B., & Franco, J. (2018, March 20). *HOLC "Redlining" Maps: The Persistent Structure Of Segregation And Economic Inequality*. Retrieved from National Community Reinvestment Coalition: <https://ncrc.org/holc/>
- Nardone, A., Rudolph, K. E., Morello-Frosch, R., & Casey, J. A. (2021, January 27). Redlines and Greenspace: The Relationship between Historical Redlining and 2010 Greenspace across the United States. *Environmental Health Perspectives*. Retrieved from Columbia Malman School of Public Health: <https://www.publichealth.columbia.edu/public-health-now/news/historically-redlined-neighborhoods-are-more-likely-lack-green-space-today-study>
- Nelson, R. K., Winling, L., Marciano, R., Connolly, N., & al., e. (2022). *Mapping Inequality*. Retrieved from American Panorama: <https://dsl.richmond.edu/panorama/redlining/#loc=5/39.1/-94.58&text=intro>
- Nieuwenhuijsen, M. J. (2021, October 28). *Why More Green Space Is Essential for Cities*. Retrieved from Barcelona Institute for Global Health: <https://www.isglobal.org/en/healthisglobal/-/custom-blog-portlet/why-more-green-space-is-essential-for-cities/4735173/0>
- NRDC. (2019, September 24). *New Drinking Water Report: Communities of Color More Likely to Suffer Drinking Water Violations For Years*. Retrieved from The National Resources Defense Council: <https://www.nrdc.org/media/2019/190924>

Plumer, B., & Popovich, N. (2020, August 24). *How Decades of Racist Housing Policy Left Neighborhoods Sweltering*. Retrieved from The New York Times: How Decades of Racist Housing Policy Left Neighborhoods Sweltering

Rodriguez, A. (2021, August 3). *Improving Urban Health through Green Space*. Retrieved from U.S. DEPARTMENT OF AGRICULTURE: <https://www.usda.gov/media/blog/2017/11/28/improving-urban-health-through-green-space>

Rothstein, R. (2017). *The Color of Law*. Liveright.
 The Commonwealth Fund. (2021, November 18). *Achieving Racial and Ethnic Equity in U.S. Health Care*. www.commonwealthfund.org.
<https://www.commonwealthfund.org/publications/scorecard/2021/nov/achieving-racial-ethnic-equity-us-health-care-state-performance#1>

Trust for Public Land. (2022). *ParkScore Index*. Retrieved from Trust for Public Land: <https://www.tpl.org/parkscore>

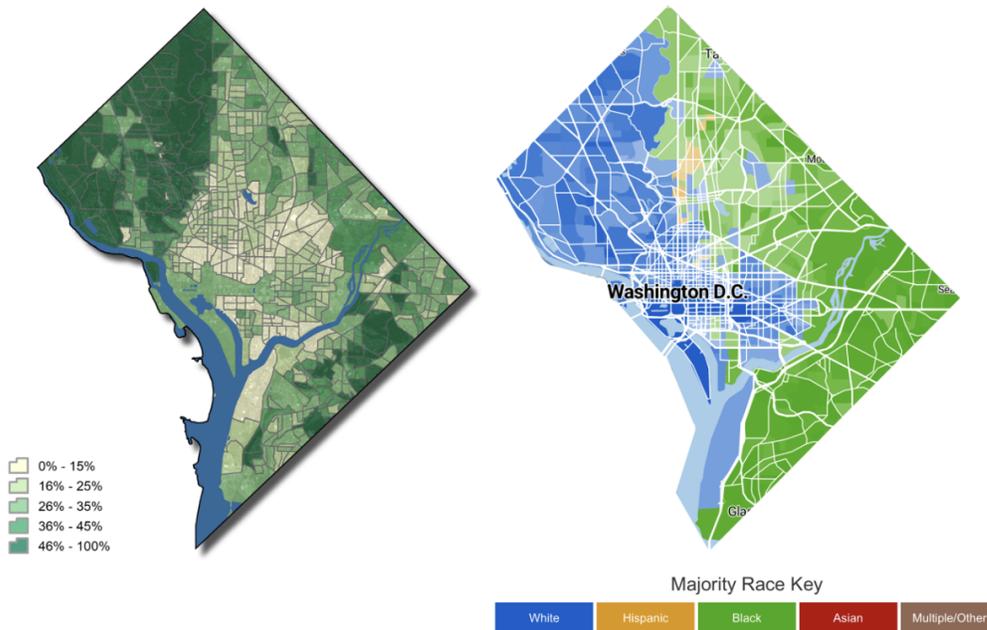
University of Leeds. (2014). *A BRIEF GUIDE TO THE BENEFITS OF URBAN GREEN SPACES*. Retrieved from Leeds Ecosystem, Atmosphere & Forest (LEAF) Centre: https://leaf.leeds.ac.uk/wp-content/uploads/sites/86/2015/10/LEAF_benefits_of_urban_green_space_2015_upd.pdf

World Health Organization Regional Office for Europe. (2017). *Urban Green Spaces - World Health Organization*. World Health Organization. Retrieved January 30, 2023, from https://www.euro.who.int/__data/assets/pdf_file/0010/342289/Urban-Green-Spaces_EN_WHO_web3.pdf

Wood, E., Harsant, A., Dallimer, M., Cronin de Chavez, A., McEachan, R. R., & Hassall, C. (2018). Not All Green Space Is Created Equal: Biodiversity Predicts Psychological Restorative Benefits From Urban Green Space. *Front. Psychol.*

Zhong, R., & Popovich, N. (2022, March 9). *How Air Pollution Across America Reflects Racist Policy From the 1930s*. Retrieved from The New York Times: How Air Pollution Across America Reflects Racist Policy From the 1930s

Appendix



MUDDLED WATERS: LEAD-CONTAMINATED TAP WATER AND ITS RACIAL, ECONOMIC, AND HEALTH IMPLICATIONS FOR CHICAGO’S RESIDENTS

Taylor Thomas

Abstract

The residents of Chicago continue to face excess lead exposure from ingesting lead-contaminated tap water in their homes. This problem is especially salient for Black residents in Chicago, who are most likely to live in homes and neighborhoods with lead water pipes. The consequences of ingesting lead-contaminated water include long-term health problems and stunted neurological development. The causes of this problem, which include lead pipe corrosion, government failures, redlining, and current discriminatory lending practices, are compounding and span several centuries. To protect residents from ingesting lead-contaminated tap water, Chicago’s government could continue implementing the Equity Lead Service Line Replacement Program or institute an amended version of the City’s water filter distribution program. Chicago could also enact a “mandatory lead service line replacement” ordinance identical to the one adopted in Newark, New Jersey. This article assesses these three policy solutions by their equity, effectiveness, and cost. Based on the evaluation, this article recommends that Chicago’s government endorse a hybrid model of the proposed solutions.

Introduction

Until 1986, Chicago’s government authorized the installation of lead water pipes, which connect public water mains to individual homes (Baehler et al., 2021; McCormick et al., 2022). Lead pipes can leach lead into the water people use for drinking and cooking. Individuals may then be exposed to lead by ingesting contaminated tap water in their homes. 80 percent of Chicago’s water pipes are made of lead, more than any other U.S. city (Caine, 2021; McCormick et al., 2022). Therefore, lead exposure through contaminated tap water is a particularly pertinent problem for Chicago’s residents.

In the 1986 amendments to the Safe Drinking Water Act, the federal government banned lead water pipes because of the adverse health consequences of lead exposure (Goho et al., 2019). Lead water pipes pose a public health threat to Chicago because consuming lead-contaminated water can disrupt the function of multiple organs, including the brain and heart (Levallois et al., 2018). Chicago’s Black residents are most susceptible to lead-related health harms because they are more likely than the City’s other racial groups to live in homes with lead water pipes. Because of racially discriminatory mortgage lending practices, Black Chicagoans experience difficulty purchasing updated homes that do not have lead pipes and contaminated water (Abdi & Andrews, 2018).

Solutions to Chicago’s excess lead exposure problem will prove effective by minimizing the number of residents who ingest lead-contaminated tap water. Furthermore, potential policies must promote equity by prioritizing Black residents’ protection from lead-contaminated drinking water. Equity and effectiveness are the primary criteria by which prospective solutions should be assessed. However, Chicago’s government should also consider and attempt to minimize the cost of any policy alternatives.

Defining and Describing Excess Lead Exposure in Chicago

Symptoms

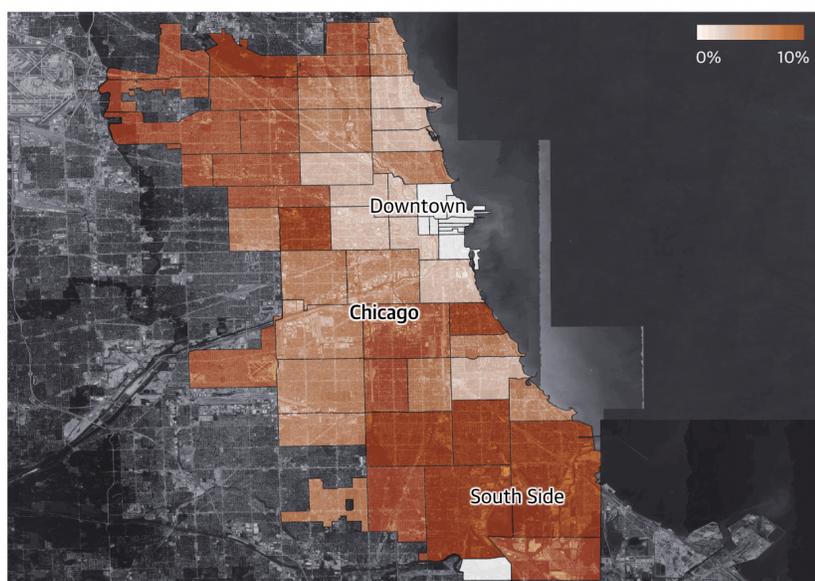
Chicago’s residents face excess lead exposure from ingesting lead-contaminated tap water in their homes. While this problem impacts all segments of Chicago’s population, the city’s Black communities are most at risk of experiencing water-related lead exposure.

In 2016, 70 percent of homes tested in Chicago had lead-contaminated tap water (Hawthorne & Reyes, 2018). The Chicago Department of Water Management (DWM) conducted a further tap water quality study from 2016 to 2021. One in 20 home water samples from the study had lead concentrations exceeding 15 parts per billion (ppb). 15 ppb is the Environmental Protection Agency’s (EPA) limit for the amount of lead permissible in

drinking water (McCormick et al., 2022; U.S. Environmental Protection Agency [EPA], 2021). Furthermore, one in three water samples in the study exhibited lead levels above 5 ppb, the Food and Drug Administration's (FDA) limit for lead allowed in bottled water (U.S. Food and Drug Administration, 2022). The DWM's tap water quality study tested less than half of the homes in Chicago (McCormick et al., 2022). If the study results are extrapolated to all of Chicago's 400,000 lead water pipes, the tap water in more than 100,000 homes could have lead levels above 5 ppb (2022).

The risk of lead exposure from tap water is distributed unevenly among Chicago's racial communities. Black Chicagoans are twice as likely as White residents to live in communities with lead water pipes (Caine, 2021). In the DWM's study, predominantly Black neighborhoods had the highest percentages of tap water samples exceeding federal lead limits (McCormick et al., 2022). Several of these communities are in the South Side of Chicago (Figure 1 and Figure 2), where the population is over 75 percent Black (Chicago Metropolitan Agency for Planning, 2022).

Figure 1
Percentage of tests at or above 15 parts per billion

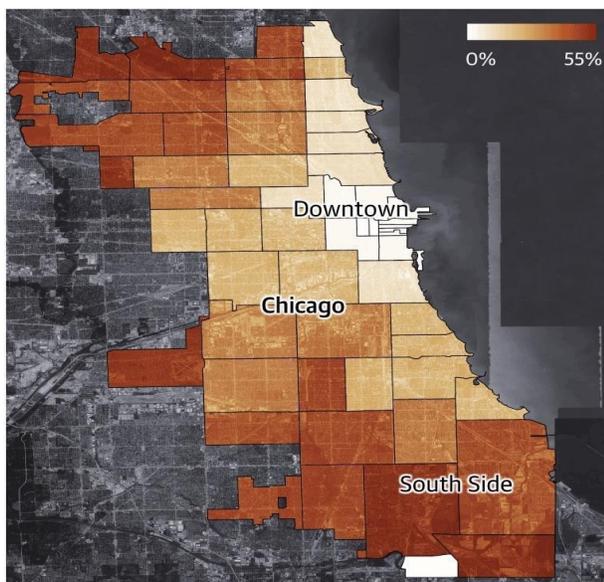


Guardian graphic. Source: Chicago department of water management. Note: Fifteen parts per billion is the EPA limit for lead in tap water. The Guardian geocoded each block address, which is the approximate location of each home.

Note. This map depicts the results of the Chicago Department of Water Management's tap water study. The figure displays the approximate percentage of water samples collected in each of Chicago's zip codes with lead levels at or above the EPA's limit (McCormick et al., 2022).

Figure 2

Percentage of tests at or above 5 parts per billion



Guardian graphic. Source: Chicago department of water management.

Note. This map depicts the results of the Chicago Department of Water Management’s tap water study. The figure displays the approximate percentage of water samples collected in each of Chicago’s zip codes with lead levels at or above the FDA’s limit (McCormick et al., 2022).

When a person ingests lead-contaminated water, the exposure manifests as the appearance of lead in their blood (EPA, 2022). Although the federal government has asserted that any amount of lead in a child’s blood is unsafe (2022), nearly four percent of Chicago children under the age of three have elevated blood lead levels (Chicago Department of Public Health, 2016).¹ Therefore, the amount of lead in Chicagoan children’s blood is approximately four times more than the EPA’s lead concentration limit. Moreover, as they are most likely to live in homes with lead-contaminated tap water, Chicago’s Black communities experience the highest blood lead levels of all the City’s racial groups (Lippert et al., 2020).

Consequences

Consuming lead through tap water causes adverse health outcomes, especially in children. The mental and physical consequences of lead exposure can affect all Chicagoans, but the City’s Black residents are especially exposed to these negative health impacts.

Lead in a person’s blood causes cardiovascular, kidney, immunological, and reproductive problems (Levallois et al., 2018). When pregnant women are exposed to lead, their fetuses are at an increased risk of brain damage (National Institute of Environmental Health Sciences, 2012). Furthermore, lead exposure can disrupt neurological² development in children under six (Centers for Disease Control and Prevention, n.d.; Levallois et al., 2018). In addition, children who ingest lead can suffer from anemia and hearing impairment (Baehler et al., 2021). Lead exposure may induce learning and behavioral problems in infants and children, including shorter attention spans, hyperactivity, and inattentiveness (Baehler et al., 2021; Levallois et al., 2018). Lead exposure can also cause further consequences relating to academic performance. Children with higher blood lead concentrations exhibit lower levels of academic achievement than children with less lead in their blood (Wodtke et al., 2022). A

¹ An *elevated blood lead level* is defined as more than six micrograms per deciliter (mcg/dL) of lead.

² Neurological refers to the brain and nervous system (Levallois et al., 2018).

study on a group of Chicago Public School students indicates that lead exposure is associated with poorer performance on elementary school standardized tests (Evens et al., 2015).

Causes of Excess Lead Exposure in Chicago

Corrosion of lead water pipes, government failures, and discriminatory mortgage lending practices explain why Chicago's residents face excess lead exposure. These factors can be categorized as remote or proximate. Government failures and discriminatory lending practices, the problem's remote causes, account for the continued installation of lead water pipes, especially in Chicago's Black communities. Corrosion, a proximate cause of the problem, explains how lead pipes pollute Chicago residents' drinking water.

Corrosion

Because Chicago has more lead water pipes than any other city in the nation (Caine, 2021), Chicago's residents are at an increased risk of ingesting lead-contaminated water from a corroding pipe. Corrosion, a chemical reaction in a water pipe, causes lead to dissolve into a home's water supply (Wang et al., 2012). Unless they are entirely replaced with a pipe made of a different material, all lead water pipes are susceptible to corrosion (Jarvis & Fawell, 2021). Additionally, older lead water pipes are more likely to corrode than newer ones (EPA, 2022). Chicago's newest lead water pipes are more than 30 years old, and their already high risk of corrosion continues to increase every year (McCormick et al., 2022; Wang et al., 2012).

Chicago's Government Failures

The installation of lead water pipes in Chicago represents a government failure due to knowledge constraints. Chicago's government did not have the foresight to know the adverse health effects associated with ingesting lead-contaminated water. As early as the 1800s, plumbers used lead water pipes in Chicago and cities across the United States (Rabin, 2008). From the late 1800s to the early 1920s, journal articles and reports emerged documenting the dangerous health outcomes of drinking water from corroding lead pipes (2008). By the time the public health community denounced lead plumbing in the mid-1900s (2008), Chicago plumbers had installed lead water pipes in most of the City's homes (McCormick et al., 2022).

Several cities prohibited lead water pipes by the 1950s and 1960s, including Boston, Detroit, New York, Philadelphia, and Milwaukee (Eng, 2018). However, due to political motives, Chicago's government allowed the use of lead water pipes until they were banned federally in 1986 (McCormick et al., 2022). Plumbers organizations and unions in Chicago advocated for the continued use of lead water pipes because lead is more durable and malleable than other materials (Rabin, 2008). To win the plumbers' political backing, mayoral candidate Richard J. Daley publicly supported installing lead plumbing in Chicago (Eng, 2018). While in office from 1955 to 1976, Mayor Daley ensured Chicago's plumbing code allowed lead water pipes in the City's homes (2018). This government failure exemplifies a problem inherent in representative democracy. Mayor Daley prioritized the particularistic interests of vocal Chicago plumbers to gain their votes over minimizing the potential long-term impact of lead on the City's residents.

Discriminatory Housing and Lending Practices

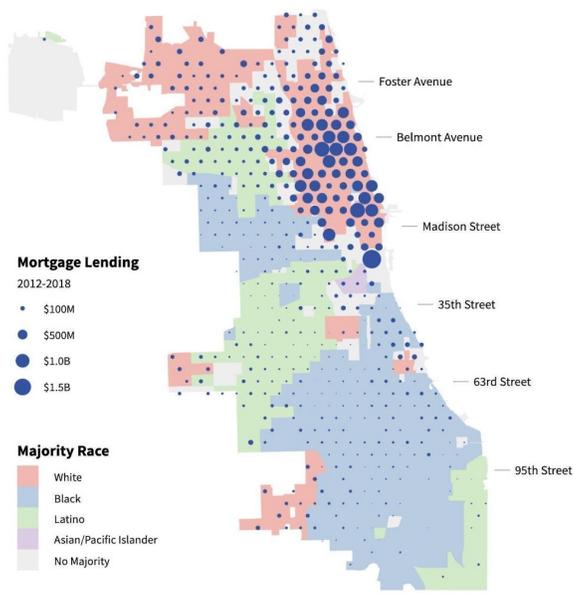
Redlining in Chicago confined the City's Black residents to homes and communities where they were more likely to be exposed to lead-contaminated tap water. All of the redlined neighborhoods in Chicago were predominantly Black because the Home Owners' Loan Corporation (HOLC) claimed that minorities were unlikely to repay fees associated with their mortgage loans (Mendez-Carbajo, 2021; Serrato et al., 2022). In 1933, the federal government created the HOLC to increase mortgage lending and assist Americans in affording homes after the Great Depression (Almeida, 2021; Mendez-Carbajo, 2021). To make mortgage lenders feel secure in their investments and want to distribute more money, the HOLC identified redlined communities in U.S. cities where institutions should avoid distributing loans (Mendez-Carbajo, 2021).

The federal government financially incentivized lending institutions and housing developers to invest in predominantly White suburbs instead of redlined neighborhoods (Greer, 2014; Mendez-Carbajo, 2021). Therefore, developers were not performing home improvements, including lead water pipe replacements, in Chicago's redlined communities (Abdi & Andrews, 2018). Because Black Chicagoans experienced difficulty acquiring mortgage loans and purchasing more expensive suburban homes, they were confined to redlined

neighborhoods with corroding lead water pipes. The bureaucrats in the HOLC distorted their agency’s original mission and perpetuated racism and segregation. Although the federal government outlawed redlining in 1968, this government failure caused immediate and long-standing social welfare loss for Chicago’s Black residents (Almeida, 2021).

Current inequitable lending practices and the lasting impacts of redlining cause Black Chicagoans to continue to disproportionately face lead exposure. Black residents are now 90 percent more likely than other racial groups to live in the City’s formerly redlined communities (Kaufmann, 2022). Moreover, following the example set by the HOLC and twentieth-century lending institutions, Chicago’s banks and mortgage companies continue to lend more money to White communities than Black communities (Lutton et al., 2020). Due to insufficient information about lenders investing more in White communities, Black residents are less likely to negotiate for larger loans or realize larger loans are available. From 2012 to 2018, 68.1 percent of housing loans in Chicago went to majority-White neighborhoods, and 8.1 percent of loans went to majority-Black neighborhoods (Lutton et al., 2020). The City’s previously redlined communities are most likely to have homes with lead water pipes (Abdi & Andrews, 2018). In Chicago’s South Side, the predominantly Black neighborhoods with lead-contaminated tap water coincide with those experiencing decreased mortgage lending (Figure 1, Figure 2, and Figure 3). Because of continued disinvestment in their communities, multiple generations of Black Chicagoans have been confined to less expensive homes with aging and corroding lead pipes (Lutton et al., 2020; McCormick et al., 2022).

Figure 3. Mortgage Lending in Chicago, by Race and Amount



Source: WBEZ/City Bureau analysis of Home Mortgage Disclosure Act Data and United States Census Bureau data
Credit: Patrick Sier/City Bureau

Note. This map displays a neighborhood-level analysis of mortgage lending in Chicago. Investment is higher in White neighborhoods than in neighborhoods of color, and this trend is exemplified in Chicago’s predominantly Black South Side toward the bottom of the map (Lutton et al., 2020).

Methods of Solution Development

Deductive and inductive reasoning were used to devise the solutions proposed in this article. Inductive reasoning was used to identify existing lead-related policy alternatives supported by Chicago’s elected officials and advocacy groups. A proximate cause of Chicago’s excess lead exposure problem is the corrosion of lead water pipes. Thus, deductive reasoning was used to identify policy alternatives that directly prevent Chicagoans from drinking water from corroding lead pipes in their homes. Instead of remote causes, the solutions outlined in

this article draw from the problem's proximate cause because it is more actionable for the City's government in the immediate future. To address the problem's remote causes, Chicago's government would need to undo centuries of government failures and discriminatory mortgage lending practices.

The three solutions analyzed in this article were also established using an overriding equity criterion. Since the City's Black residents are most vulnerable to water-related lead exposure, the following policy alternatives improve Black Chicagoans' access to lead-free drinking water (Caine, 2021; McCormick et al., 2022).

Solutions Analysis Criteria

This article compares and analyzes solutions across the following standardized criteria: effectiveness, equity, and cost.

Effectiveness is measured in terms of the extent to which a solution minimizes the number of Chicago households³ ingesting lead-contaminated tap water. A solution earns a higher effectiveness ranking if it prevents more households from consuming water from their lead pipes. Replacing lead plumbing is not the sole method the City government can use to supply Chicagoans with lead-free drinking water. Therefore, the effectiveness criterion tracks the number of households with access to lead-free water rather than the number of lead pipes in the City. Projections of this criterion are calculated by extrapolating data on the effectiveness of current lead-related policies over a given time period. This methodology assumes a constant rate of progress for each proposed solution. With increased resources and further analysis, this criterion would more closely monitor and predict how a solution's effectiveness rate would change over time.

Each proposed solution earns a "high," "medium," or "low" equity rating depending on the extent to which it is effective for Black Chicagoans. Because the City's Black population is most likely to suffer from lead exposure, more equitable solutions are those that will particularly minimize the number of Black households' ingesting lead-contaminated tap water.

The third evaluative criterion estimates the cost of the proposed solutions at their projected levels of effectiveness. Chicago's government publishes its expenditures on lead-exposure mitigation programs (Cherone, 2022). This data is used to determine how much it would cost the City to execute the policy alternatives outlined in this article. Less expensive solutions are rated higher than more costly ones.

When the proposed solutions are compared and scored, the criteria are weighted differently based on their level of importance (Table 1). Since Black Chicagoans are disproportionately affected by excess lead exposure, equity is the most important criterion and assigned a coefficient of 3. Effectiveness is weighted with a coefficient of 2 because each alternative must protect as many Chicagoans as possible from the harmful health effects of consuming lead-contaminated water. Although it should be considered, cost is the least important criterion and assigned a coefficient of 1.

Analysis of Proposed Solutions⁴

To address the City's water-related lead exposure problem, Chicago's government could continue implementing the Equity Lead Service Line Replacement Program or consider adopting a new lead service line replacement ordinance. The City could also institute an amended version of its current water filter distribution program. Table 1 presents a comparison of these solutions across the evaluative criteria.

Status Quo: The Equity Lead Service Line Replacement Program

The first proposed solution is for Chicago's government to maintain the status quo and continue executing the Equity Lead Service Line Replacement Program that took effect two years ago. In Chicago, each lead water pipe, also known as a lead service line (LSL), is jointly owned by the City government and a property owner

³ The standardized evaluative criteria are measured in terms of the number of households protected because lead service lines connect to and affect entire buildings. This article defines a household as a housing unit with one or more occupants. Condominiums and apartment buildings may contain multiple households.

⁴ The three proposed solutions involve government provision instead of market-based strategies because clean drinking water is a public good.

(Figure 4). Once the publicly and privately owned portions of the LSL are replaced, the pipe no longer leaks lead into a home's tap water (Jarvis & Fawell, 2021). Under the Equity Lead Service Line Replacement Program, the City pays for low-income households⁵ to have their entire LSL replaced with copper plumbing (City of Chicago, 2020).⁶ Furthermore, low-income Chicagoans must own and reside in their homes to qualify for the free replacement (2020). Illinois' Lead Service Line Replacement and Notification Act requires Chicago's government to replace all the City's LSLs by 2077 (Hawthorne, 2021). However, this article projects the outcomes of the Equity Lead Service Line Replacement Program and the following two solutions within 10 years to gauge the programs' immediate results.

- **Equity:** Most of Chicago's low-income residents are Black (Chicago Metropolitan Agency for Planning, n.d.). Thus, the Equity Lead Service Line Replacement Program primarily serves Black households who might not be able to afford LSL replacements without financial aid. However, this solution earns a "low" equity rating because program eligibility is conditional based on homeownership. In Chicago, 39 percent of Black residents own their homes (McCargo & Stochak, 2018). Therefore, this solution leaves most Black households vulnerable to ingesting lead-contaminated tap water.
- **Effectiveness:** In the last two years, nearly 200 households received replacements under the Equity Lead Service Line Replacement Program (Chase, 2022). If this Program progresses at its current rate, approximately 1,000 additional households will have their LSLs replaced in the next 10 years.
- **Cost:** Chicago's government determined that each LSL replacement costs between \$15,000 and \$26,000 (Cherone, 2022). Therefore, it would cost between \$15 million and \$26 million for the City to fund and replace 1,000 households' lead service lines.

Newark-Inspired Ordinance: LSL Replacement Mandate and Free Replacement Program

The second proposed solution is for Chicago's government to adopt a lead service line ordinance identical to the one instituted in Newark, New Jersey. This ordinance would mandate the replacement of all of Chicago's LSLs. The ordinance would also create a free LSL replacement program in which every property owner could have their replacements fully funded and provided by the City (Matthews, 2022). However, property owners would not be required to use this free replacement program to comply with the mandate. They could also independently hire and pay a contractor to replace their property's LSLs. Finally, the ordinance would allow a building's occupants, and not only the property owner, to consent to an LSL replacement arranged and funded by the City (2022). This provision allows renters to enjoy protection from lead-contaminated tap water, even if they have an absentee landlord who does not request an LSL replacement. The Natural Resources Defense Council (NRDC), a nationwide environmental advocacy and justice organization, recommends that Chicago adopt Newark's "model ordinance" because of the speed at which Newark replaces LSLs (2022). Newark's government fully funded and provided approximately 23,000 LSL replacements since instituting the ordinance in 2019 (City of Newark, n.d.). Therefore, Newark replaced over 20 times more LSLs than Chicago has under the Equity Lead Service Line Replacement Program (Chase, 2022).

- **Equity:** This alternative receives a "high" equity rating because, unlike the Equity Lead Service Line Replacement Program, it would enable Chicago's renters to qualify for government-funded replacements. Since most of the City's Black households rent their residences, this ordinance would safeguard more Black families from ingesting lead-contaminated water than the status quo.
- **Effectiveness:** If Chicago's government adopts this model ordinance and executes replacements at the same rate as Newark, this solution would allow 77,000 additional households to receive free lead service line replacements in the next decade.⁷

⁵ Chicago's government defines "low income" as having a household income more than 80 percent below the City's median income. For a family of four, a household income below \$72,800 is considered a "low income" (City of Chicago, 2020).

⁶ From heron, lead service line replacement refers to the process by which a contractor replaces the publicly and privately owned portions of an LSL with copper piping.

⁷ Under this ordinance, Newark's government fully funded and executed approximately 23,000 LSL replacements in three years (City of Newark, n.d.). The effectiveness projection was calculated by extrapolating this figure to 10 years.

- **Cost:** Chicago’s government would expend between \$1.155 billion and \$2.002 billion to fund 77,000 LSL replacements.⁸

Amended Water Filter Distribution Program

The final alternative is an amended version of Chicago’s water filter distribution program.⁹ Under the current program, the Chicago DWM provides free water filter kits to eligible households. Households can receive a free filter kit while the DWM performs sewer maintenance on their block. Chicago households can also qualify for a free filter kit under the existing program if the DWM determines their tap water has a lead concentration above 15 ppb (City of Chicago, n.d.-a). Each kit includes one water filter pitcher and six replacement filters (City of Chicago, n.d.-a). The filters in the pitchers are approved by the National Sanitation Foundation and can remove up to 92.9 percent of lead particles from contaminated tap water (Doré et al., 2021). The third proposed solution is for Chicago to amend its existing water filter distribution program by removing all eligibility stipulations. Under the new program, the DWM would provide one free water filter kit to any Chicago household upon request. NRDC, Illinois State Senator Ram Villivalam (D-Chicago), and the Little Village Environmental Justice Organization, a Chicago-based advocacy group, recommended this program modification to Chicago’s government last month (Chase, 2022).

- **Equity:** This amended program would promote equity by providing Black Chicagoans with lead-free drinking water, regardless of their income or homeownership status. Unlike the Equity Lead Service Line Replacement Program, this solution would grant Chicago’s Black renters protection from ingesting lead-contaminated tap water. However, the amended water filter distribution program earns a “medium” rather than “high” equity rating because the DWM could provide an equal number of free filter kits to each of Chicago’s racial groups. While this solution would remove barriers for Black Chicagoans seeking clean drinking water, it does not target the Black population in particular.
- **Effectiveness:** After implementing the modified program for 10 years, Chicago’s government could provide free water filter kits to between 200,000 and 400,000 households.¹⁰
- **Cost:** The water filter kits cost the City government \$60 each (Byrne & Hawthorne, 2018). Therefore, Chicago could provide 200,000 to 400,000 water filter kits at an estimated cost of between \$12 million and \$24 million.

Assessment of Solutions and Trade-Offs

To holistically understand the policy alternatives outlined in this article, Chicago’s government should consider trade-offs among the proposed solutions. State-level legislation requires Chicago to replace all of its 400,000 LSLs by 2077 (Hawthorne, 2021). A primary goal of Chicago’s policy solutions should be protecting residents from the life-long health impacts of lead exposure. However, to meet Illinois’ 100 percent replacement deadline, Chicago’s government must also adopt a policy that allows for LSLs to be replaced as quickly as possible. Therefore, potential solutions should be assessed in terms of political feasibility and timeliness, as well as the three primary criteria.

Status Quo: The Equity Lead Service Line Replacement Program

The Equity Lead Service Line Replacement Program is the least effective solution, as it protects the smallest number of households from lead-contaminated tap water within 10 years (Table 1). If it progresses at the current rate, this Program will provide and fund approximately 5,500 LSL replacements by 2077.¹¹ Therefore, this

⁸ This projection is based on the Chicago government’s estimated cost per LSL replacement: \$15,000 to \$26,000 (Cherone, 2022).

⁹ This article does not consider a bottled water distribution program solution because of the adverse environmental effects of single-use plastics.

¹⁰ In the absence of data on Chicago’s current water filter distribution program, the effectiveness projection of the amended program was arbitrarily estimated based on the number of lead water pipes in the City. It is hypothesized that, in 10 years, the DWM could provide free water filter kits to somewhere between half and all households connected to lead water pipes, which translates to between 200,000 and 400,000 kits.

¹¹ Approximately 200 households have received replacements under the Equity Lead Service Line Replacement Program (Chase, 2022). The projection was calculated by extrapolating this figure to 2077.

solution is not effective and timely enough to meet the 100 percent replacement deadline. Further, the Program's homeownership requirement proves inequitable because it prevents low-income Black renters from receiving free LSL replacements. Despite its shortcomings, the Equity Lead Service Line Replacement Program is the most politically feasible solution. Chicago's government is most likely to maintain the status quo or adopt a policy incorporating elements of the existing Program.

Newark-Inspired Ordinance: LSL Replacement Mandate and Free Replacement Program

If the City government adopts the model ordinance and executes replacements at the same rate as Newark, 100 percent of Chicago's LSLs could be replaced by 2077.¹² This compulsory solution would likely be more effective than the status quo, where LSL replacements are optional. However, due to both cities' disparate demographics, economies, and other attributes, the ordinance may lead to a different effectiveness level in Chicago than in Newark. Despite its timeliness and effectiveness, the Newark-inspired ordinance will likely be met with political opposition from Chicago government officials because it requires the largest financial investment of the three proposed solutions. The cost per LSL replacement in Newark is between \$5,000 and \$10,000 (City of Newark, n.d.). Therefore, it costs Newark \$5,000 less than Chicago to replace each LSL. According to Mayor Lightfoot, the Chicago government's cost is higher because the City's "dense urban setting" makes underground replacements particularly difficult (Cherone, 2022). The Newark-inspired ordinance is more likely to be adopted if Chicago's government can reduce costs per LSL replacement or find another cost-saving opportunity within the policy.

Amended Water Filter Distribution Program

The amended water filter distribution program is technically the most cost-effective proposed solution, as it could provide all Chicago households with lead-free drinking water for the lowest cost. Although one water filter kit is less costly than each LSL replacement on the front end, Chicago's government would need to continuously supply households with replacement water filters. Also, the filter pitchers may leave Chicago's adults and children vulnerable to the health consequences of lead exposure because they are not guaranteed to remove 100 percent of lead particles from water (Doré et al., 2021). Therefore, pipe replacements are a more permanent and definite solution to Chicago's excess lead exposure problem. Unlike the first two proposed solutions, the amended water filter distribution program does not progress the City toward its goal of replacing 100% of LSLs. However, as a temporary solution, Chicago's government could provide free water filter kits to households while their LSLs are being replaced.

Recommendations and Implementation

As outlined above and in Table 1, each proposed solution has advantages and disadvantages. Therefore, Chicago's government should leverage each solution's positive aspects and adopt a hybrid of the three. To reduce the policy's cost and improve its political feasibility, Chicago should modify the Newark-inspired ordinance by incorporating the low-income eligibility requirement from the Equity Lead Service Line Replacement Program. This blended solution would only allow low-income households to qualify for free LSL replacements. Chicago's other households would receive partial funding from the government.

Chicago's government should also consider implementing a registration system with the hybrid solution. Instead of supplying water filters to every household upon request, the City would provide free kits only to those undergoing or registered to receive an LSL replacement. While the City works toward replacing all its LSLs, Chicago's residents could consume lead-free water in the interim.

To ensure the compound solution remains equitable, Chicago's government should implement its provisions in a way that prioritizes Black residents. For example, Black households could be the first to receive LSL replacements and water filters. During implementation, the City should also collect real-time data that monitors the rate at which LSLs are being replaced. With this information, Chicago's government could accordingly adjust the pace at which it replaces LSLs to ensure the 100 percent replacement goal is met by 2077.

¹² Under this ordinance, Newark's government fully funded and executed approximately 23,000 LSL replacements in three years (City of Newark, n.d.). The projection was calculated by extrapolating this figure to 2077.

References

- Abdi, F. M., & Andrews, K. (2018, February 13). *Redlining has left many communities of color exposed to lead*. Child Trends. <https://www.childtrends.org/blog/redlining-left-many-communities-color-exposed-lead>
- Almeida, L. (2021, August 6). *A history of racist federal housing policies*. Massachusetts Budget and Policy Center. <https://massbudget.org/2021/08/06/a-history-of-racist-federal-housing-policies/>
- Baehler, K. J., McGraw, M., Aquino, M. J., Heslin, R., McCormick, L., & Neltner, T. (2021). Full lead service line replacement: A case study of equity in environmental remediation. *Sustainability*, *14*(1), 352-379. <https://doi.org/10.3390/su14010352>
- Byrne, J., & Hawthorne, M. (2018, November 2). City tests confirm some Chicago homes with water meters have lead in tap water. *Chicago Tribune*. <https://www.chicagotribune.com/politics/ct-met-rahm-emanuel-lead-pipe-replacement-study-20181101-story.html>
- Caine, P. (2021, March 24). *Chicago has more lead service pipes than any other U.S. city, Illinois the most of any state*. WTTW. <https://news.wttw.com/2021/03/24/chicago-has-more-lead-service-pipes-any-other-us-city-illinois-most-any-state>
- Centers for Disease Control and Prevention. (n.d.). *Populations at higher risk*. U.S. Department of Health and Human Services. <https://www.cdc.gov/nceh/lead/prevention/populations.htm>
- Chase, B. (2022, October 24). City asked to provide lead water filters to address crisis. *Chicago Sun-Times*. <https://chicago.suntimes.com/city-hall/2022/10/24/23421412/advocated-demand-lead-water-filters-pipe-replacement>
- Cherone, H. (2022, September 20). *Crews have replaced less than 0.5% of lead service lines shown to contaminate tap water in Chicago homes*. WTTW. <https://news.wttw.com/2022/09/20/crews-have-replaced-less-05-lead-service-lines-shown-contaminate-tap-water-chicago-homes>
- Chicago Department of Public Health. (2016). *Healthy Chicago 2.0*. City of Chicago. https://www.chicago.gov/content/dam/city/depts/cdph/CDPH/HC2.0Plan_3252016.pdf
- Chicago Metropolitan Agency for Planning. (n.d.). *Median household income by race and ethnicity*. Chicago Metropolitan Agency for Planning. <https://www.cmap.illinois.gov/2050/updating-the-plan>
- Chicago Metropolitan Agency for Planning. (2022). *South Chicago: Community data snapshot*. Chicago Metropolitan Agency for Planning. <https://www.cmap.illinois.gov/documents/10180/126764/South+Chicago.pdf>
- City of Chicago. (n.d.-a). *Drinking water purification process*. <https://www.leadSAFEchicago.org/water>
- City of Chicago. (n.d.-b). *Lead service line replacement*. <https://www.leadSAFEchicago.org/lead-service-line-replacement>
- City of Chicago. (2020, September 10). *Mayor Lightfoot launches equity-focused lead service line replacement program* [Press release]. <https://www.chicago.gov/content/dam/city/depts/mayor/PressRoom/PressReleases/2020/September/EquityFocusedLeadServiceLineReplacementProgram.pdf>
- City of Newark. (n.d.). *Lead Service Line Replacement Program*. <https://www.newarkleadservice.com/replacement>
- Doré, E., Formal, C., Muhlen, C., Williams, D., Harmon, S., Pham, M., Triantafyllidou, S., & Lytle, D. A. (2021). Effectiveness of point-of-use and pitcher filters at removing lead phosphate nanoparticles from drinking water. *Water Research*, *201*(1), 5-17. <https://doi.org/10.1016/j.watres.2021.117285>
- Eng, M. (2018, September 15). *How political clout and union power created Chicago's lead water problem*. WBEZ Chicago. <https://www.wbez.org/stories/how-political-clout-and-union-power-created-chicagos-lead-water-problem/13230f35-c533-41db-a120-b818053602fc>
- Evens, A., Hryhorczuk, D., Lanphear, B. P., Rankin, K. M., Lewis, D. A., Forst, L., & Rosenberg, D. (2015). The impact of low-level lead toxicity on school performance among children in the Chicago Public Schools: A population-based retrospective cohort study. *Environmental Health*, *14*(1), 21-30. <https://doi.org/10.1186/s12940-015-0008-9>
- Goho, S. A., Saenz, M., & Neltner, T. (2019). *Rates could fund lead pipe replacement in critical states: Laws in states with the most lead service lines support the practice*. Emmett Environmental Law and Policy

- Clinic; Environmental Defense Fund. http://clinics.law.harvard.edu/environment/files/2019/04/Rates-Fund-LSL-Replacement-States_Harvard_EDF_2019.pdf
- Greer, J. L. (2014). Historic home mortgage redlining in Chicago. *Journal of the Illinois State Historical Society*, 107(2), 204-233. <https://doi.org/10.5406/jillistathistsoc.107.2.0204>
- Hawthorne, M. (2021, May 27). Chicago gets 50 years to replace lead service lines, way more than other Illinois cities. *Chicago Tribune*. <https://www.chicagotribune.com/news/environment/ct-chicago-lead-pipe-replacement-bill-20210528-lvcdbk7kjjhctptjk4v2rqokua-story.html>
- Hawthorne, M., & Reyes, C. (2018, April 8). Brain-damaging lead found in tap water in hundreds of homes tested across Chicago, results show. *Chicago Tribune*. <https://www.chicagotribune.com/investigations/ct-chicago-water-lead-contamination-20180411-htmlstory.html>
- Jarvis, P., & Fawell, J. (2021). Lead in drinking water – An ongoing public health concern? *Current Opinion in Environmental Science & Health*, 20(1), 206-212. <https://doi.org/10.1016/j.coesh.2021.100239>
- Kaufmann, J. (2022, February 17). *Chicago redlining: Then and now*. Axios Chicago. <https://www.axios.com/local/chicago/2022/02/17/chicago-redlining-then-and-now>
- Levallois, P., Barn, P., Valcke, M., Gauvin, D., & Kosatsky, T. (2018). Public health consequences of lead in drinking water. *Current Environmental Health Reports*, 5(1), 255-262. <https://doi.org/10.1007/s40572-018-0193-0>
- Lippert, J., Montgomery, J., & DeMarco, C. (2020). Lead health fairs: A community-based approach to addressing lead exposure in Chicago. *Health Education & Behavior*, 48(6), 758-768. <https://doi.org/10.1177/1090198120954>
- Lutton, L., Fan, A., & Loury, A. (2020, June 3). *Where banks don't lend*. WBEZ Chicago. <https://interactive.wbez.org/2020/banking/disparity/>
- Matthews, J. L. (2022, May 16). *Meeting the challenge of lead service line replacements*. Natural Resources Defense Council. <https://www.nrdc.org/experts/joan-leary-matthews/meeting-challenge-lead-service-line-replacements>
- McCargo, A., & Stochak, S. (2018, February 26). *Mapping the black homeownership gap*. Urban Institute. <https://www.urban.org/urban-wire/mapping-black-homeownership-gap>
- McCormick, E., Uteuova, A., & Moore, T. (2022, September 21). Revealed: The ‘shocking’ levels of toxic lead in Chicago tap water. *The Guardian*. <https://www.theguardian.com/us-news/2022/sep/21/lead-contamination-chicago-tap-water-revealed>
- Mendez-Carbajo, D. (2021). *Neighborhood redlining, racial segregation, and homeownership*. Federal Reserve Bank of St. Louis. <https://research.stlouisfed.org/publications/page1-econ/2021/09/01/neighborhood-redlining-racial-segregation-and-homeownership>
- National Institute of Environmental Health Sciences. (2012). *National Toxicology Program monograph: Health effects of low-level lead* (No. 12-5996). U.S. Department of Health and Human Services, National Institutes of Health. https://ntp.niehs.nih.gov/ntp/ohat/lead/final/monographhealtheffectslowlevellead_newissn_508.pdf
- Rabin, R. (2008). The lead industry and lead water pipes “a modest campaign.” *American Journal of Public Health*, 98(9), 1584-1592. <https://10.2105/AJPH.2007.113555>
- Serrato, J., Runes, C., & Sier, P. (2022, February 24). Mapping Chicago’s racial segregation. *South Side Weekly*. <https://southsideweekly.com/mapping-chicagos-racial-segregation/>
- U.S. Environmental Protection Agency. (2021, December 16). *Lead and Copper Rule*. <https://www.epa.gov/dwreginfo/lead-and-copper-rule>
- U.S. Environmental Protection Agency. (2022, May 25). *Basic information about lead in drinking water*. <https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water#getinto>
- U.S. Food and Drug Administration. (2022, April 22). *Bottled water everywhere: Keeping it safe*. U.S. Department of Health and Human Services. <https://www.fda.gov/consumers/consumer-updates/bottled-water-everywhere-keeping-it-safe>

Wang, Y., Jing, H., Mehta, V., Welter, G., & Giammar, D. (2012). Impact of galvanic corrosion on lead release from aged lead service lines. *Water Research*, 46(16), 5049-5060.
<https://doi.org/10.1016/j.watres.2012.06.046>

Wodtke, G. T., Ramaj, S., & Schachner, J. (2022). Toxic neighborhoods: The effects of concentrated poverty and environmental lead contamination on early childhood development. *Demography*, 59(4), 1275-1298.
<https://doi.org/10.1215/00703370-10047481>

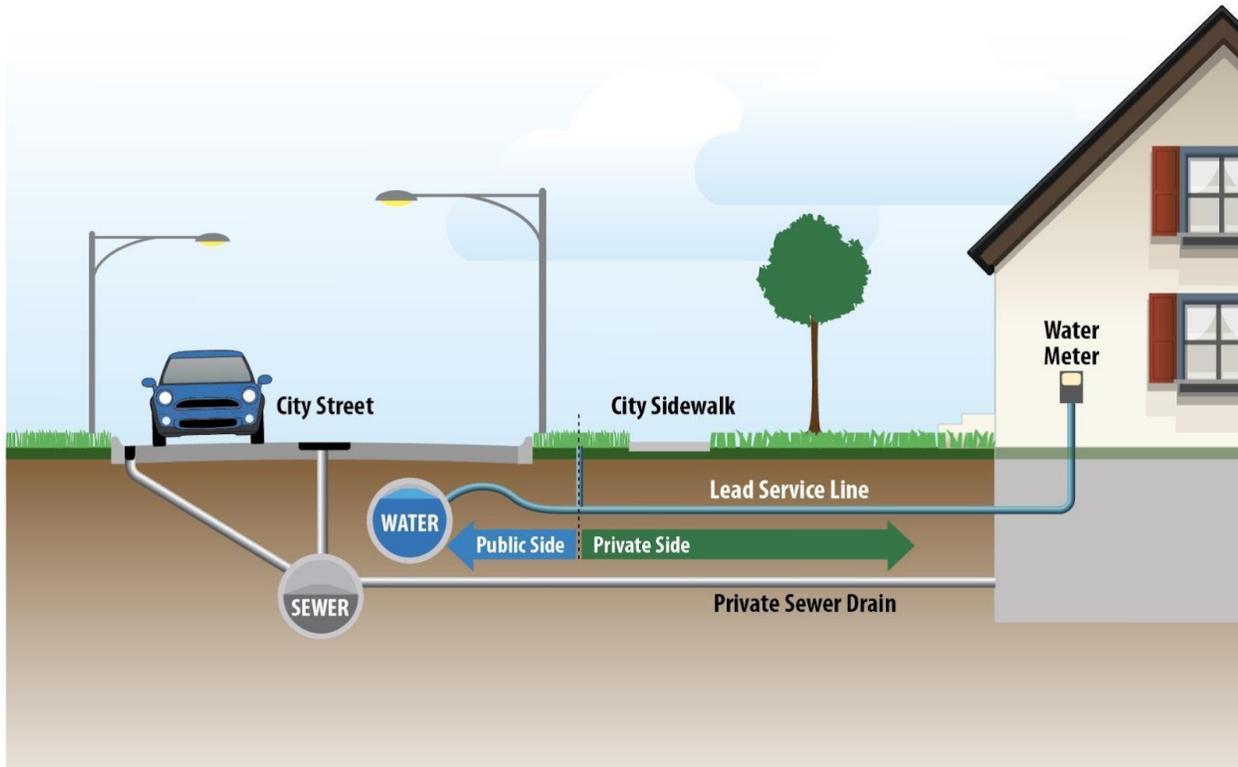
Appendix

Table 1. Proposed Solutions Comparison Matrix

Policy Solutions (10-year projections)	Criteria & Coefficients			Total Score
	Equity 3	Effectiveness (# of additional households stopped from ingesting lead-contaminated tap water) 2	Cost (of executing effectiveness projection) 1	
Equity Lead Service Line Replacement Program (Status Quo)	Low	+1,000	\$15 million - \$26 million	7
<i>Ranking</i>	★	★	★★	
Lead Service Line Replacement Mandate & Free Replacement Program	High	+77,000	\$1.155 billion - \$2.002 billion	14
<i>Ranking</i>	★★★★	★★	★	
Amended Water Filter Distribution Program	Medium	+200,000-400,000	\$12 million - \$24 million	15
<i>Ranking</i>	★★	★★★★	★★★★	

Note. Solutions are awarded a higher number of stars for being more equitable, more effective, and less costly. One star represents one point. The number of points a solution earns in each criterion category is multiplied by that criterion’s assigned coefficient. The total score equals the sum of the weighted points in all three criterion categories. For example, the total score for the Equity Lead Service Line Replacement Program is calculated as follows: Equity (1 star X 3 coefficient) + Effectiveness (1 star X 2 coefficient) + Cost (2 stars X 1 coefficient) = 7. A perfect total score equals 18 points.

Figure 4. Chicago Government's Lead Service Line Diagram



Note. This diagram depicts the structure of a typical lead service line in Chicago. The City's government owns the "public side." The "private side" is the property owner's responsibility (City of Chicago, n.d.-b)

(This space left intentionally blank.)

NATIONAL POLITICS AND ELECTIONS

RUNNING FROM THE DISTRICT: ANALYSIS OF ELECTABILITY POLITICS IN AMERICA'S LEFT

R. Jeremy Golden

Abstract

Beginning in 1992, the Democratic Party took a hard move to the center politically in an attempt to regain the White House and end 12 years of Republican rule. This move proved successful and ushered in a new era of the Democratic Party, one which was convinced that moderates were electable and leftist ideologies would cost the party crucial victories. Thirty years after the election of Bill Clinton and this shift of the Democratic Party, this paper aims to answer whether or not that calculation is still correct and whether voters prefer a candidate closer to the political center than one who is on the fringe of the political spectrum.

Through an examination of re-election prospects for incumbent members of Congress, this paper argues proximity to the political center no longer bears a significant relationship to re-election, regardless of the national climate. This paper argues that as Democrats strategize for victory in competitive or conservative districts, the partisan lean of their nominee matters much less now than it did in the 1990s. To achieve victory in districts that may be swayed by the national climate or are more inclined to vote for Republican candidates, the Democratic Party would be wise to examine other factors that impact the way a voter in the 21st century evaluates candidates running for public office.

Introduction

Heading into the 1992 election for President, the Democratic Party had the task of achieving something it had failed to do in each of the past three elections: win. In each of the last three presidential elections, the Democratic Party lost in landslides, which resulted in the presidencies of Ronald Reagan and George H.W. Bush. Most recently, the nomination of Massachusetts Governor Michael Dukakis ended with the best result for the Democratic Party at the national stage in 12 years—and yet still, only garnered wins in ten states and the District of Columbia. This result was despite the fact that Dukakis held a 17-point lead after the Democratic National Convention (Molloy, 2016). The liberalism espoused by Jimmy Carter, Walter Mondale, and Michael Dukakis had seemed to fail at obtaining a national victory against a new and more popular brand of Goldwater-Conservatism championed by Ronald Reagan and George H. W. Bush.

The task for the Clinton campaign was to accomplish a victory in 1992. To achieve that goal, they distanced themselves from the liberal image that defined Dukakis and Mondale. Clinton adopted a centrist label he had cultivated as Governor of Arkansas for the past decade (Kelly, 1992). Governor Clinton would confirm that his strategy was to distance himself from the legacy of the Democratic Party with a speech in West Hartford, Connecticut, in September of 1992 where he stated, “I know the Democratic Party in Washington has been in the past too identified with tax and spend, big government...But I have worked hard to be a different kind of Democrat and to give the people a different kind of Democratic Party.” Clinton’s rejection of the standard Democratic Party platform and rhetoric set him apart from other candidates for the party nomination. The rationale of this strategy was that liberalism caused Carter, Mondale, and Dukakis to fail as candidates. Therefore, a centrist candidate would be able to successfully defeat the new GOP.

Not long after giving his speech in West Hartford, Governor Clinton won the Presidency of the United States with the largest electoral college margin for a Democrat in almost 30 years. Clinton would later go on to win a second term by an even wider electoral margin just four years later. To an observer of these elections, it can be argued that running as a centrist is what made Clinton electable and his campaign strategy was correct. Thirty years later, that argument persists in the Democratic Party with moderate candidates often arguing the more liberal members of their party would not be able to secure a victory in a general election, especially in the more competitive races or historically competitive election cycles.

If this assertion holds true, then it suggests a permanent shift of the Democratic Party from representing the “left” as it did in the 1970s and 1980s to the center of the American political spectrum. Whether this assertion was never or is no longer true, then it would indicate the Democratic Party should focus their candidate selection

and electability criterion elsewhere other than political ideology. Considering the Democratic Party has struggled to maintain a congressional majority with the occupation of the White House (commonly referred to as the “trifecta”) for more than four of the past thirty years, an examination of this theory would be a necessary first step in determining strategy in coming elections. This paper will seek to answer that question by analyzing elections to the House of Representatives since 1992 and examining the ability of moderate incumbents to win re-election in competitive districts.

Literature Review

Discussion regarding electability in politics ultimately revolves around what makes voters support certain candidates. Literature regarding the topic of electability and motivations of the voting public largely focus on two major themes. The first theme revolves around strategy candidates may consider when running for office and calculations voters use when determining who to support. The second theme discusses the role homogeneity plays when voters take into account their own identities, as well as the identities of the candidates in a race.

Much scholarship on electability in politics references and seeks to build off the work of notable economist, Anthony Downs. Downs’ *An Economic Theory of Democracy* (1957) is considered a critical text in American politics and is one of the first academic works to discuss electability. Downs employs the use of the median voter theorem, which argues politicians will gravitate to the center in an effort to garner the support of the “median voter”. This means that voters at the political center will have the most power in choosing a winner.

However, Downs also suggests through the median voter theorem that voters are often just as strategic as candidates when determining support. Like customers looking for a certain product, voters are looking for the candidate they believe meets their preferences. As such, the median voter theorem suggests candidates stick to the political middle, seeing as that is where they garner the most support. This suggests politicians stick to what’s popular and spend little time convincing the electorate of something they haven’t already established.

Congress, the electorate, and the political landscape have changed dramatically since Downs certified the median voter theorem. New political issues have arisen since 1957 and many voters’ issues then have been “resolved” through the policy making process. Several factors come into play when considering why the political landscape has changed with respect to electability. The demographics of the United States have significantly shifted since the 1980s, with people of color making up a larger share of the general electorate, and a larger share within the Democratic Party, as well. Between 1980 and 2019, the White population has diminished from comprising over 80 percent of the United States population to comprising 60.1 percent of the United States population (Frey, 2020). Political polarization is another prevalent issue that has come to light over the last 40 years with an observed and statistically significant increase in partisanship. (Abramowitz, 2010).

Increased polarization can be seen with the rise of the Tea Party in 2009 and 2010 and support for the Make America Great Again movement starting in 2016. On the left, candidates such as Alexandria Ocasio-Cortez and Bernie Sanders have made policy proposals such as Medicare for All. Today, over 70 members of the Democratic Caucus in the House of Representatives have joined the Medicare for All caucus. With the rise in political polarization and increased issue consistency among voters, candidates who are identifiable with their nominating party and the values most associated with that party are likely to receive party loyalty. Party loyalty and disdain for the opposite party have both grown significantly over the past several decades (Abramowitz and Webster, 2016). However, though politics in the United States have changed, this does not mean Downs’ electability theories have lost all credibility. In fact, expansions of Down’s work have provided more insight into the implications of the median voter theorem.

What role does ideology play in perceived electability? In researching the electoral success of moderates versus ideologues, studies have shown a waning advantage for moderate candidates and an increased probability for extremist candidates to not only win their primary, but also win in the general election. In 1980, the assertion that moderate Democrats were more likely to win than extremists had been born out in election results. In 1980, ideologically extreme candidates were likely to win 40 percent of the vote as opposed to moderates, who were likely to win 60 percent. Likewise, in 1980, ideologically-extreme candidates were only likely to win less than 20 percent of elections where they were the general election nominee (Utych, 2020). By 2008, those odds had balanced with the difference in likelihood to win an election becoming statistically insignificant (Utych, 2020).

While research demonstrates electability and political ideology are not inherently linked, it is important to know what voters think concerning this relationship. Research by Emily Dalgeish at Gettysburg College shows that voters in the Democratic presidential primaries tend to see candidates who they perceive as being further from the political left as being more electable. For example, in the 2008 Democratic Primaries, voters who assumed that Clinton and Obama were further to the ideological right were more likely to believe they were electable (Dalgeish, 2019). Interestingly, the study by Dalgeish shows John McCain's perceived electability followed the same path, with a less pronounced trend. Voters saw that, no matter the candidate's party affiliation, the more conservative they were the more likely they were to be elected.

Literature also shows voters view electability as a factor when it comes to supporting a candidate. Literature examining the 1988 democratic primaries as well as the 2004 democratic primaries both show electability and viability played critical roles in the minds of voters when deciding who to cast their vote for. In 1988, voters in both the Democratic and Republican party primaries were significantly more likely to vote for the candidate they marked as more viable (Abramson, 1992). In analyzing the 2004 democratic primary, voters were more likely to vote for candidates like Wesley Clark over Howard Dean, if they believed that Clark was an electable candidate (Rickershauser & Aldrich, 2007). Likewise, Democratic primary voters were more likely to vote for John Edwards over Wesley Clark, due to the perceived electability of Edwards.

Beyond the debate over the relationship that ideology plays into electability, literature also focuses on the impact of demographic homogeneity on voter choice. Recent research has shown the competitive advantage assumed by demographic characteristics has been overestimated or waned in recent elections. The Center for American Progress argued in 2020 that electability "isn't about candidates convincing voters that they can conform to standard ideas about what power looks and sounds like. On the contrary, it's about demonstrating that they'll show up as they are and meet voters where they are" (Hananel, 2021). This shift in political dynamics will make it harder to create an archetypical candidate that could fit into each district. It also creates a moving target that strategists and party organizers will have to recalibrate for each race.

This may not seem to mean the same for every candidate. Research from the University of North Texas shows that outside groups still are underestimating female candidates when determining where to donate in competitive races. The research demonstrates Republican spending groups are significantly more likely to spend money targeting candidates who are male and qualified than candidates that are female and qualified (English et al, 2020). English, Branton, and Freisenhahn write, "on average, Republican-leaning groups run a total of 256.26 ads during races with a Democratic male quality candidate compared to 112.77 ads against a Democratic female quality candidate... Further, Republican-leaning groups on average run 104.64 more *favorable* ads when their preferred candidate is facing a Democratic male quality candidate (197.66 ads) compared to a Democratic female quality candidate (93.02 ads). Last, Republican-leaning groups run on average a total of 159.56 ads *attacking* a Democratic male quality candidate compared to 71.41 ads against a Democratic female quality candidate" (English, Branton, & Freisenhahn, 2020). This suggests a bias that forces Republican groups to perceive female candidates as less electable, and therefore less of a threat to their preferred candidate.

Overall, the literature shows public perception and electability impact each other in a circular fashion. Electability arguments exist because of public perceptions. Essentially, voters will factor in the role of electability as long as they are made aware of its importance, to ensure its importance in modern politics. The literature examined shows how voters feel concerning electability, and what aggregated data would suggest about voting trends at the presidential level. The research in this paper is focused on filling gaps in this literature by trending retention of moderate, liberal, and progressive members of Congress and showing whether or not being moderate has proven to aid in the electability of incumbents.

Methodology

To conduct this analysis this essay will compare the relative political lean of members of the United States House of Representatives, starting with the congressional elections held in November 1992, as well as the political lean of their respective congressional districts. To make this comparison it is necessary to quantify the political lean of both the districts as well as that of the incumbents representing those districts. This quantification will allow for the comparison of individual members as well as the comparison of ranges which will be vital to the labeling of incumbents as either Moderate, Liberal, or Progressive.

This essay uses the methods utilized by the Cook Political Report (Cook, 2022) to determine the political lean of congressional districts. The Cook Method analyzed the two most recent presidential elections held within those district boundaries by isolating the results of the Democratic and Republican candidates. The analysis averages the results of the past two presidential elections and compares that average to the result of the most recent presidential election in that congressional district.

An example to illustrate this model could be the Alabama 7th Congressional District, where, in 2016, Hillary Clinton garnered 64.1 percent of the vote to Donald Trump's 33.5 percent (when isolated to only the Democratic and Republican nominees the adjusted score is 65.6/34.4) (Cook, 2022). In 2020, Joe Biden garnered 65.5 percent of the vote to Donald Trump's 33.4 percent (66.2/33.8). Upon averaging out the adjusted results of each election, one gets an average of 65.9 percent of the vote going to the Democratic nominee with an average of 34.1 percent of the vote going to the Republican nominee. Nationally, Hillary Clinton won 48.2 percent of the vote to Donald Trump's 46.1 percent (51.1/48.9). In 2020, Joe Biden won 51.3 percent of the national vote to Donald Trump's 46.9 percent (52.2/47.8). The average of the national adjusted scores would be 51.7 percent of the voting population selecting the Democratic nominee and 48.3 percent of the voting population selecting the Republican nominee. With the Democratic average in the Alabama 3rd congressional district performing 14.2 percent higher in the district than the national average for the Democratic nominee, this district would have a partisan lean of D+14. This rating would suggest President Biden and Congresswoman Sewell would have a strong chance of winning elections held in this district.

To determine whether a district should be considered competitive each election cycle, this essay develops a range based on that year's election outcomes. The boundaries for the competitiveness range are based on the political lean of districts where Democratic incumbents were defeated for re-election. For example, the furthest left districts in 2010 where a Democratic member of congress was defeated would be the Pennsylvania 11th and the Illinois 17th, with a partisan lean of D+5. The district furthest to the right in 2010 with a Democratic incumbent defeated was the Idaho 1st with a partisan lean of R+19. As a result, the competitive district range would be considered from D+5 to R+19 when analyzing the 2010 elections. This method focuses largely on a district's relationship with national politics, rather than a district's relationships with the candidates running in those districts.

This range does not assume all districts that fall within its boundaries have similar political trends. A congressional district that votes 5 percent more Democratic than the nation is not likely to have the same political trends as a district that votes 19 percent more Republican than the nation. For further discussion, districts will be divided into subgroups with a 5-point range (D+1-D+4, D+5-D+9, etc.) and analyzed as a group against other groups, as well as individual members against other members within that group. This categorization will allow for the analysis to consider different voting trends and allow for representatives who are elected in districts with a more conservative lean to avoid being held to the same standards of electoral ability as a district that is considerably more liberal.

To quantify the ideology of the incumbent members of Congress, this essay observes data from the VoteView program maintained by the University of California Los Angeles Social Sciences Department. VoteView employs the use of a spatial map to determine a member's political lean based on their voting pattern while serving in Congress. Members are assigned a number ranging from -1 to 1 with -1 being the furthest to the political left and 1 being the furthest to the political right. For the 2022-2023 congressional session, VoteView asserts that the member furthest to the left is Sylvia Garcia (TX-29) with a rating of -.831 and the member furthest to the right is Yvette Herrell (NM-02) with a rating of .936. Likewise, the furthest left member of the Republican Party is Brian Fitzpatrick (PA-01) with a rating of .159 and the Democratic member who is furthest to the right is Jared Golden (ME-02) with a rating of -.114.

This essay will focus on the Democratic members and their political lean, and divide members based on their political lean relative to that of other Democratic members in the session. Members in the bottom third percentile will be considered Moderates, those in the middle third percentile will be considered Liberals, and those in the upper third percentile will be considered Progressives. Resetting the percentile ranges with each election will allow the terms of Moderate, Liberal, and Progressive to remain moving targets rather than creating a static definition as creating that definition would require a Progressive to hold the same views in 2022 and in 1992

which would be highly unlikely considering the growing support for many social causes that were formerly considered radical or Progressive.

To determine whether Moderate incumbents are more successful than Liberal and Progressive incumbents in winning competitive districts, this essay will use the data sources listed above to conduct three different levels of analysis. The first level of analysis will compare those who lost re-election to the rest of the membership and the membership that was re-elected. The goal of this first analysis is to understand whether Moderate members are more at risk of losing reelection than those who are not. The second level of analysis compares those who lost reelection to members of Congress who fell inside the range of competitiveness. This level of analysis is meant to control for those who are in congressional districts that are considered safe and may have views further to the left of the average Democrat. The third level of analysis examines members as part of subgroups with districts that had similar political trends to determine whether candidates who are closer to the center are more likely to win reelection than others in their subgroup. This analysis will illustrate if there is a difference in advantage or vulnerability when controlling for different levels of competitiveness and whether there are districts with a certain type of political lean where proximity to the political center will influence a Democratic incumbent's ability to win.

Results and Analysis

Using the data acquired from the Cook Political Report and the VoteView database, this essay will show relevant trends and provide a broader overview of how the landscape has changed since 1992, as well as how the landscape changed between election years. Through this data, we can also determine which elections are best in analyzing how Moderates, Liberals, and Progressives compete in competitive political landscapes over time. To begin, this essay will examine the cumulative trends since 1992 and, over that time period, which candidates were more likely to lose.

In 1992, the average Democratic member of the House of Representatives had a partisanship rating of -.313 with Moderates holding a partisan lean above -.230. Prior to the 1992 elections, over a third of congressional districts represented by Democrats had a Republican lean and were more likely to vote for George H.W. Bush, and later Bob Dole, in the 1996 elections. In that same election, 58 percent of the incumbents who were defeated for re-election would be considered Liberal or Progressive, with 42 percent of those who lost re-election being considered Moderate.

These statistics increased slightly, with 53 percent that lost re-election going into the 1994 midterms as Liberal or Progressive. The 1994 elections served as the first major benchmark when determining which incumbents were likely to survive in a competitive or rough election cycle for the Democratic Party. This could explain why the 1994 midterms saw the largest modern defeat for the Democratic Party in the House—the first time the Democratic Party has lost control of the House since 1940. This loss was largely attributed to the popularity of the Contract with America Campaign supported by Congressman Newt Gingrich (R-GA) and the Republican party and pushback against what was seen as exorbitant congressional spending. The trends observed in the 1990s would suggest that Moderates succeed in competitive races more than Liberals and Progressives, as the midterms in 1998 would show that no Moderates lost re-election to the House of Representatives.

However, since the 2002 midterm elections, those considered Moderate Democrats in the House of Representatives comprised 62 percent or more of those who would lose their bids for re-election, specifically in election cycles where Democrats lost one or more incumbents. In fact, elections to the House in 2010, 2012, and 2014, saw Moderates comprise 83 percent, 71 percent, and 82 percent of those who were in the Democratic Caucus respectively, and were defeated for re-election. Years that did not see a large loss of the Democratic Caucus in the House, such as 2002, 2004, and 2008, saw that 100 percent of those who lost re-election were considered Moderate. On a national scale, this data indicates a shift in the ability for Moderates to successfully win their respective elections.

The Democratic Party's caucus in the House of Representatives since 1992 has relied on their appeal to swing voters and gain control of the lower chamber. In recent elections, they relied on winning elections in districts that were more likely to vote Republican in national elections to gain control of the House of Representatives. For example, preceding the 2006 midterm elections, only 13 percent of the Democratic Caucus represented districts that were more likely to vote for a Republican presidential candidate. After the Democratic

Party's success in the 2006 midterms and the 2008 elections, we would see that 25 percent of the Democratic caucus would represent districts that were more likely to have voted for George W. Bush and John McCain than for John Kerry or Barack Obama. Of the Democrats who lost in 2010, 79 percent of those were from conservative-leaning districts.

The loss of Moderate representatives from conservative-leaning districts explains the trend of the Democratic Party's partisan lean in the House over time. When the Democratic Party is out of power and typically represents very few Republican districts, the Democratic caucus is significantly further to the Left than when they are in power. For example, preceding the 1994 midterms, the Democratic caucus had a partisan lean of $-.336$. After their loss in 1994, the caucus would consistently move further to the left with the Democratic caucus holding a partisan lean of $-.388$ preceding the 2006 midterms. Conversely, the partisan lean moved further to the right once the Democratic party regained control of the lower chamber with the Democratic caucus in the House holding a partisan lean of $-.349$. After the 2010 midterms, the Democratic caucus moved further to the left than it ever had before in modern politics, with the caucus's political lean moving to $-.395$ by the 2016 elections.

This data clearly shows Moderate representatives achieving victory in competitive and Republican districts is vital to their ability to win control of the House of Representatives. Moderates also appear to have a significant impact on the direction of the Democratic party when in power. To determine if Moderates are simply more likely to lose due to the competitiveness of their district, or if Moderates are less likely to be elected than their more Liberal or Progressive counterparts regardless of competitiveness, this essay will also control for districts that fall within the competitive range as described in the methodology section.

The competitive range determines which districts could potentially flip to the opposing party. This is based on the range of partisan lean of those districts that had an incumbent run for re-election and be defeated by a challenger from an opposing party in the general election. This range does exclude outliers from districts that are significantly more partisan than the rest of the districts that fall within that range. The outliers are typically determined based on extenuating circumstances that may have impacted that incumbent's ability to win re-election. For example, Congressman Dan Rostenkowski's failed re-election campaign in his D+10 district in 1994 was heavily influenced by the corruption scandal that Rostenkowski faced at the time of the election. Likewise, Congressman William Jefferson's loss in his D+28 re-election campaign in 2008 is also considered an outlier due to the impact of Jefferson's corruption scandal on his respective election.

When controlling for competitive districts, the data shows those who are defeated in the general election have consistently been closer to the center than those who won re-election in competitive districts. In 2010, members who were re-elected and were in competitive elections had an average partisan lean of $-.256$. While these members were considered Moderate, the members who were defeated were considerably further to the center with their average partisan lean sitting at $-.205$. This phenomenon would be repeated in 2014, with the average partisan lean of those being re-elected in the competitive range sitting at $-.313$, and those who were defeated sitting at $-.235$. In the most recent elections in 2020, the average partisan lean of those who were re-elected in the competitive range was $-.299$, with those who were defeated for re-election having an average partisan lean of $-.229$. Since 2006, regardless of the favorability of the Democratic Party in that election year, Democrats who lost re-election were considerably further to the center than Democrats who were re-elected and represented districts that were considered competitive for that election year.

This data would argue that among the array of districts considered competitive in each election, Moderate candidates are more likely to lose than their counterparts further to the left in competitive districts. For the electability argument to be true, the argument must prove to be successful in elections that Democrats deem vital to their legislative success, as well as in districts that would be considered competitive or have a conservative lean. In an election decided by a slim margin, the ability to successfully achieve an upset victory in a handful of races may provide the difference when building a caucus. The importance of achieving upset victories was exemplified in 2020, as the Democratic Party secured a four-seat majority in the House of Representatives. When isolating competitive districts, this analysis illustrates a clear argument that the closer a candidate is to the center, the more likely the candidate is to lose.

Would this assertion hold true, however, if the districts are isolated by partisan lean rather than by a range of competitiveness? The competitive range analysis is useful, as it shows which districts are likely targets in each election, but given that it treats each district as equally competitive, it would be important to isolate the districts

further based on their partisan lean. Isolating districts to a smaller range of partisan lean is a necessary step in determining whether Moderates in left-leaning districts fare better or worse than right-leaning districts. Furthermore, this next step would demonstrate whether a Moderate candidate's likelihood of success, relative to that of Liberals or Progressives, will grow when controlling for districts that are significantly more conservative than the nation. Given the significant differences that may exist in partisanship between districts that are deemed competitive, this analysis may provide more context to the analyses run before.

When isolating districts based on partisan lean, we find there is little consistency in the type of candidate who is re-elected with respect to the candidate's partisan lean. Elections in the 1990s demonstrated that those running in conservative districts were considerably more likely to win re-election if they were closer to the center than their more Liberal and Progressive counterparts. In 1994, those who lost re-election in conservative districts were more likely to be significantly further to the left, with the average partisan lean for candidates in R1-R4 districts being -.273 and those defeated] having an average partisan lean of -.323. R5-R9 and R10+ districts saw comparable statistically significant differences between their range average and the average of those who lost re-election. While conservative districts contributed to the majority of losses, 56 percent of Democrats who represented conservative districts would be re-elected in the 1994 midterms.

Over the past 20 years, no pattern emerged regarding the partisan lean of those who lost re-election versus their range average. In positive elections for the Democratic Party, such as 2008, Democrats who represented R1-R9 districts and faced defeat were significantly more conservative. On the other hand, Democrat incumbents who were defeated in R10+ districts held partisan leans significantly further to the left. In an election year that saw extensive losses for the Democratic Party, such as 2010, defeated Democratic incumbents in conservative districts were not significantly further to either the right or to the left when compared to others who were in similar districts. However, those who represented "even" districts held partisan leans significantly further to the left of the ideological center. In 2014, Democrats who lost re-election in R1-R4 districts were significantly further to the right, while those that lost re-election in R5-R9 districts were further to the left, albeit not significantly. In that same election, those that lost reelection in even districts were significantly further to the left.

While a pattern does not emerge regarding the partisan lean of the individual members, this data provides context regarding the likelihood of success for Democrats in districts with a Republican lean, regardless of the individual candidate's partisan lean. As stated above, in 1994, while the Democratic party lost a significant number of seats in the House, 56 percent of Democrats who represented conservative-leaning districts went on to win re-election. This data indicates that in 1994, there was a likely path to victory for those competing in a rough political climate nationally and a competitive district. After 1994, over 20 percent of seats held by Democrats in the United States House of Representatives were considered conservative-leaning. This share would contract significantly by 2006, which saw only 13 percent of districts represented by Democrats maintaining a conservative lean. This share nearly doubled to 25 percent by the 2010 midterms but cratered after the Democratic losses in 2010, 2014, and 2016. By 2018, less than six percent of districts represented by Democrats retained a conservative lean.

Democrats in conservative districts faced steep odds during reelection races. In 2010, almost 75 percent of Democrats representing conservative districts were defeated in the general election. Since 2010, the Democratic Caucus has consistently been occupied by districts with a Democratic lean. Only 16 percent of Democrats in the House in 2020 represented traditionally conservative districts. In that same election, only one Republican, John Katko (NY-24), represented a district with a Democratic lean. A significant result of the 2020 elections for the House of Representatives was the defeat of every Democrat representing an R10+ district. This result meant that for the first time in modern political history, there were no House Democrats who represented a district with an R+10 partisan lean. This shift was unprecedented and likely serves as a sign of not only national attitudes towards Democrats but also a willingness to vote for members of a party who have not been supported in recent elections.

This data suggests a pattern of decreasing likelihood for Democrats of any partisan lean to secure a victory in a conservative district. Where it was once likely to have a Democratic caucus populated with over one-third of the members representing conservative districts, as was observed in 1992, it is now becoming increasingly difficult, and in some cases near impossible, to achieve victory in the general election. If this pattern continues in future elections, it is likely the political sphere will see a more static division of Congress, based on

national political popularity rather than a relationship that a particular candidate has with the district they are running to represent.

Limitations & Conclusion

While this data is expansive and allows for multiple levels and methods of analysis, there are areas where future research could expand on the assertions made and provide context to explain the identified patterns. Reasons regarding a successful candidacy would certainly include the national political climate at the time of the election, but what is also important is the perception voters have within the district of the candidate and the relationship that candidate has with voters. In some elections where the partisan lean and usual outcomes of an election may swing heavily to one side of the political spectrum, factors specifically related to the candidate may not be as important. Conversely, when analyzing competitive elections that are often decided by only a few percentage points, these factors could play a significant role in determining the outcome. The data collected for this research does not control for the relationship a candidate has with the electorate and as such, poses an interesting research opportunity for future electability research.

Analyzing the specific messaging and resources that candidates may use and have at their disposal is also crucial. This data assesses the quantitative aspects of a candidate and political lean and does not control for qualitative data that may significantly impact the ability of a candidate to win future elections. Future research should aim to answer why some candidates in competitive races or conservative districts were more likely to succeed than others, and if there was a common characteristic of their campaign that shows a relevant pattern over time.

Beyond the specifics of the candidate and the campaign, future research should also focus on the demographic components that impact electability. The economic and social demographics of a district would likely impact the way the electorate views a certain candidate and what issues matter most to them. An interesting research question that would expand upon this data would be to ask whether competitive districts that are considered “toss up” with a high minority population are more likely to support Democrats than those that have a high Caucasian population. Future research could also expand on the data by analyzing the impact education level has on the ability for Democrats to win in competitive races. Research focusing on education level may provide context on why suburban districts with a usually conservative lean are more likely to vote Democratic than those with low educational attainment.

The suggested expansion of this research would likely provide necessary context and explanations for the current political phenomenon. The electoral strategy the Clinton campaign employed in 1992 seemed intuitive and based on correct assertions, considering the voting trends of the 1992 electorate. While this assertion may have been true in 1992, over the past 30 years, there has been a clear shift that has at the very least nullified the ability of Moderates who subscribe to that political strategy to win competitive races. When looking at future elections, strategists would be wise to focus less on creating a candidate who fits the traditional “electable” mold and more on that candidate’s ability to galvanize party members and loyalists—those who will have a large impact on that candidate’s ability to achieve an electoral victory.

References

- Abramowitz, Alan I., and Steven Webster. “The Rise of Negative Partisanship and the Nationalization of U.S. Elections in the 21st Century.” *Electoral Studies*, vol. 41, 2016, pp. 12–22., <https://doi.org/10.1016/j.electstud.2015.11.001>.
- Abramowitz, Alan. “The Disappearing Center: Engaged Citizens, Polarization, and American Democracy.” Yale University Press, 2010.
- Abramson, Paul R., John H. Aldrich, Phil Paolino, and David W. Rohde. 1992. "'Sophisticated' Voting in the 1988 Presidential Primaries," *American Political Science Review*, 86(1, March):55-69.
- Ashley English, Regina Branton & Amy Friesenhahn (2022) Outsiders among outside groups? Campaign advertising and the electability of female US House candidates, *Politics, Groups, and Identities*, DOI: 10.1080/21565503.2022.2127371
- “Cook Political Report 2022 House Ratings - 270towin.” 270toWin.Com, 2022, <https://www.270towin.com/2022-house-election/cook-political-2022-house-ratings>

- Dalglish, Emily C., "The Enigma of Electability: How Do Voters Predict Who Can Win?" (2019). Student Publications. 766.
- Downs, Anthony. *An Economic Theory of Democracy*. 1957.
- "The Electability Myth: The Shifting Demographics of Political Power in America." Reflective Democracy Campaign, Women Donors Network, 23 Apr. 2022, <https://wholeads.us/research/the-electability-myth/>
- Frey, William H. "The Nation Is Diversifying Even Faster than Predicted, According to New Census Data." Brookings, Brookings Institute, 1 July 2020, <https://www.brookings.edu/research/new-census-data-shows-the-nation-is-diversifying-even-faster-than-predicted/>
- Hananel Director, Sam, et al. "Redefining Electability." Center for American Progress, 9 Nov. 2021, <https://www.americanprogress.org/article/redefining-electability/>
- Kelly, Michael. "The 1992 Campaign: The Democrats; Clinton Says He's Not Leaning Left but Taking a New 'Third Way'." *The New York Times*, The New York Times, 26 Sept. 1992, <https://www.nytimes.com/1992/09/26/us/1992-campaign-democrats-clinton-says-he-s-not-leaning-left-but-taking-new-third.html>
- Molloy, Tim. "Remember When Mike Dukakis Led George Bush by 17 Points?" *TheWrap*, 10 Aug. 2016, <https://www.thewrap.com/trump-clinton-polls-mike-dukakis-led-george-bush-by-17-points/>
- Rickershauser, Jill & Aldrich, John. (2007). "It's the electability, stupid" – or maybe not? Electability, substance, and strategic voting in presidential primaries. *Electoral Studies - ELECT STUD.* 26. 371-380. 10.1016/j.electstud.2006.09.003.
- "UCLA Presents Voteview.com Beta." Voteview, 2022, <https://voteview.com/>
- Utych, Stephen M. "Man Bites Blue Dog: Are Moderates Really More Electable than Ideologues?" *The Journal of Politics*, vol. 82, no. 1, 2020, pp. 392–396., <https://doi.org/10.1086/706054>

