

**Tobacco Control in the 21st Century:
Policies to Address Traditional and Emerging Tobacco Products**

by

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Dedication

This dissertation is dedicated to my parents (Troy and Kathryn Kiessling), sister (Kaitlyn (Kiessling) DeFouw), and family members who always believed in me to be smart and successful.

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This dissertation is dedicated to the friends, family, and loved ones who supported me throughout this process. Thank you all for being proud of me when I found it hard to be proud of myself. To my parents and sister- thank you for encouraging me to always be unique, curious, and tenacious. A special thank you to Michael Linn for his unwavering support and encouragement.

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Abstract

Within the past decade, the US tobacco product market has transitioned from being dominated by cigarettes to now offering an expanding array of different products. Of these, electronic cigarettes (e-cigarettes) have gained in popularity and become widely used by youth and younger Americans. Given the sharp increase in high school and even middle school students vaping, there has been pressure across all levels of government to address the issue through enhanced tobacco control policies. This dissertation focuses on the ground-level implementation of recently passed policies to identify gaps in tobacco control across the US. Presented in three research papers, the overarching aim is to understand how new tobacco control policies, such as Tobacco 21 and flavor restrictions, are implemented within communities. Additionally, features of the US political system which impact implementation are explored as well as potential solutions to issues identified.

In the first paper, observations from tobacco retail locations in two Michigan cities (Grand Rapids and Detroit) assessed the retail environment for presence and advertising of menthol tobacco products. These assessments were used to identify if disparities in mentholated product availability and marketing existed across racially and economically diverse neighborhoods. Contrary to previous studies, neighborhoods with a higher percentage of non-Hispanic Black residents were no more likely to have mentholated products and had higher, not lower, prices for Newport menthol cigarettes (a popular menthol brand). In this study, Hispanic communities, instead, were observed to have greater availability and advertising for mentholated

products. Some retailers also had illegal self-service displays, indicating lack of effective enforcement.

The focus of the second paper was testing Theda Skocpol's theory of advocacy using Tobacco 21 as a case. The spread of policies raising the age of sale for tobacco products to 21 (Tobacco 21) has been used as a classic example of a grassroots movement in public health literature, but this does not align with Skocpol's work which indicates politics are often driven by advocacy organizations rather than truly grassroots activists. Through interviews with public health advocates in Colorado and Virginia, I found evidence that Skocpol's theory holds true: national advocacy organizations played a pivotal role in spreading Tobacco 21 across the US with minimal citizen involvement outside of professionals promoting the policy as a public health measure.

The third and final paper studied enforcement of minimum legal sales age policies, identifying factors which differentially impact retailer compliance rates across the country. Those factors include: a network of two federal enforcement regimes along with varying state policies and a possibility for local regimes in some states; Tobacco 21 increasing the age of sale resulting in state law changes; and the COVID-19 pandemic limiting retailer inspections.

Across the three studies, it is apparent that institutions within the US government and power structures which favor national advocacy organizations contribute to vastly different policies across states which are implemented to varying degrees. At the ground level, this results in some states and localities having excellent updated policies and enforcement while other regimes lack the funding and infrastructure to enforce federal mandates.

Chapter 1: Introduction

Despite years of tobacco control efforts, tobacco remains the largest cause of preventable death in the United States, with over 480,000 deaths per year from cigarette smoking alone (Centers for Disease Control and Prevention 2022b). Within the past decade, the popularity of new and emerging tobacco products such as e-cigarettes, vaping devices, and alternative nicotine products has become concerning for the public health community and the nation at large. Prior to these alternatives arriving on the market, cigarette smoking was the most common form of tobacco use among US middle and high school students, followed by cigar use and smokeless tobacco use (Jebai et al. 2023). Since 2014, however, e-cigarettes have become the most popular tobacco product, with the use of e-cigarettes (i.e., vaping) among youth increasing dramatically. The most recent estimates of vaping indicate about 1 in 30 middle school students (3.3%) and more than 1 in 7 high school students (14.1%) used vapor products within the past 30 days (Centers for Disease Control and Prevention 2023d). Additionally, the use of more than one tobacco product, poly product use, has also risen among youth as e-cigarettes became more popular, causing concern as patterns of use become more complex (Jebai et al. 2023).

Due to the elevated use among youth and limited research on short- and long-term health effects of novel products, all levels of government have been under pressure to address the issue (Office on Smoking and Health and Centers for Disease Control and Prevention 2023; Borst 2022). Tobacco control policies and politics in the United States are highly complex and contested due to many factors, including a politically strong tobacco industry as well as the fragmented nature of the US political system (Shete, Yu, and Shete 2021; Action on Smoking

and Health 2020; Bayer and Colgrove 2009). The federal level receives the majority of the energy and attention in tobacco control research and practice; with the focus being on national decision making linked to the passage of national laws, development of national regulations, and the financing of national programs (Boakye et al. 2023; Benowitz and Henningfield 2018). In this dissertation, I take a different, but complementary approach, analyzing the politics and public health implications of tobacco control policies at ground level. While federal laws are important, there are also many policies passed at the state and local level which alter the tobacco control policy landscape (Donovan et al. 2023; Leas et al. 2020; Luke et al. 2016).

1.1 A Decade of Disruption and Innovation in Tobacco Control

Over the past decade, advocates have used a few key policies to respond to the changing market and increase in vaping by youth. The first major set of policies to spread across the US was Tobacco 21. These policies minimally involved raising the minimum legal sales age to 21, but could include other policy components such as a tobacco retailer licensing (American Heart Association et al. 2019). Tobacco 21 gained popularity as a way to reduce youth access to tobacco products; what began as a local policy in Massachusetts in 2013 passed in over 500 local jurisdictions and 19 states before becoming a national law in December, 2019 (Dai et al. 2021; Dobbs et al. 2021; Preventing Tobacco Addiction Foundation 2023d).

In addition to the rapid passage of T21 policies, restrictions on flavored products have also been increasing in the past decade. The US Food & Drug Administration (FDA) officially assumed authority over tobacco products in 2009 due to the Family Smoking Prevention and Tobacco Control Act; an act which also prohibited cigarettes from being sold in ‘characterizing flavors’ other than menthol (Campaign for Tobacco-Free Kids 2023b; Corey et al. 2015; Truth Initiative 2019). Recognizing that flavors are a key reason youth use tobacco products (Harrell et

al. 2017), states and localities began to fully or partially restrict the sale of flavored products (Campaign for Tobacco-Free Kids 2023b; Schneller et al. 2022). A ban is considered full, or comprehensive, if all flavors across all products are prohibited; a partial ban indicates some flavors are exempted, some tobacco products are exempted, or not all retailers are subject to the ban (Kurti et al. 2020; Zeng et al. 2022; Czaplicki et al. 2019). Menthol bans are a specific type of flavor ban which focus on prohibiting menthol in cigarettes as menthol was the only flavor exempted from the 2009 Family Smoking Prevention and Tobacco Control Act. While menthol bans may cover other tobacco products, menthol cigarettes are the primary target as there is substantial evidence that menthol cigarettes have been disproportionately targeted to minority, especially African American, communities (Wailoo 2021; Villanti et al. 2017; Gardiner and Clark 2010).

Despite the passage of Tobacco 21, flavor restrictions, and other tobacco control policies across the national, state, and local level, youth continue to access and use tobacco products regularly (Noguchi 2023). To better understand why these novel policy innovations are failing to address youth tobacco use, this dissertation focuses on the ground-level implementation of recently passed policies to identify gaps in tobacco control across the US.

1.2 New Policies and Products Require a Renewed Focus on Implementation

Policy implementation is a key part of the policymaking process after a policy is enacted. As the Centers for Disease Control and Prevention state, “Policies won’t work if the process stops at enactment” (Centers for Disease Control and Prevention 2021). For tobacco control policies, there are changes required to enforce the new law including establishing which entity has enforcement authority, informing retailers and the public about the new policy, and updating enforcement procedures. If these actions are not completed, the policy may have no effect or a

far lesser impact than originally planned (Jarman, Kiessling, et al. 2019). Even though Tobacco 21, flavor restrictions, and other policies have passed, there may be key implementation issues preventing success. This dissertation aims to examine implementation of these policies at the state and local level to better understand what factors may be preventing existing policies from more fully addressing youth access to tobacco products and promoting public health.

1.3 Structure of the Dissertation

Presented in three research papers, the overarching intention is to understand how new tobacco control policies, such as Tobacco 21 and flavor restrictions, are implemented within communities. Additionally, features of the US political system which impact implementation are explored as well as potential solutions to issues identified.

The three papers comprising this dissertation explore these overarching questions using original data. In the first paper, *Menthol Product Availability, Placement, and Advertisement Across Neighborhoods in Michigan*, I assess variations in the retail environment across diverse neighborhoods to determine differences in how menthol-flavored tobacco products are sold and advertised. Contrary to previous studies, I find neighborhoods with a higher percentage of non-Hispanic Black residents were no more likely to have mentholated products and had higher, not lower, prices for Newport menthol cigarettes (a popular menthol brand). In this study, Hispanic communities, instead, were observed to have greater availability and advertising for mentholated products. A number of retailers also had illegal self-service displays, indicating lack of effective enforcement.

In the second paper, *Examining a Grassroots Movement in Public Health Advocacy: Who Was Advocating for Tobacco 21?*, I test political scientist Theda Skocpol's theory of advocacy using tobacco control politics as a case study. As Tobacco 21 is considered to be a classic

example of a grassroots movement in public health, it was an excellent case to test if Skocpol's theory of professional, memberless organizations dominating policymaking applied. Combining political science theory and tobacco control policymaking in this way makes clear that a small number of tobacco control advocacy groups were responsible for spreading Tobacco 21 and other policies, not citizens. Rather than a truly grassroots movement, I find that Skocpol was correct and the process was even less democratic than expected. Opportunities for citizen involvement were rare and constituents who were involved in decision-making were either public health professionals or specific types of citizens (youth, parents, educators, and medical professionals) directly chosen by advocacy groups to participate.

In the third paper, *Fixing Tobacco Enforcement: Retail Compliance Failures During COVID-19 and Proposed Solutions*, I examine the current retail compliance and enforcement regime for tobacco control products in the United States. With an emphasis on minimum legal sales age policies, this paper identifies factors which differentially impact retailer compliance rates across the country. I find that the existing network of two federal enforcement regimes, varying state policies, and occasional local regimes has been poorly coordinated and flawed for years. In addition to underlying structural issues, Tobacco 21 was passed nationally, increasing the age of sale while relying on the existing network of enforcement to adjust their practices to meet the new mandate. Finally, the COVID-19 pandemic severely limited retailer inspections causing a lapse of enforcement in addition to the pre-existing issues resulted in fewer retailers being in compliance.

Evidence for the conclusions in these three papers is drawn from original research. The first project utilized structured observations of retail stores conducted in two Michigan counties: Kent County and Wayne County. A sample of retailers in each county was drawn from zip code

tabulated areas (ZCTAs) and purposively sampled to account for key neighborhood demographics: racial makeup, income, and rurality. 15 retailers from each ZCTA were randomly selected to be visited. Data inside and outside of retailers was collected for 122 stores, assessing product availability, placement, and advertising using a modified version of a validated survey tool (State and Community Tobacco Control 2023; 2016; Counter Tools 2023b). Observational procedures were selected based on community partner advice from a previous youth trainer for Michigan FDA Tobacco Compliance Program and existing best practices (Lee et al. 2014; Feld et al. 2016). This study was conducted in partnership with the Urban League of West Michigan and the Making it Count Community Development Corporation. With these partners, the project was funded by the Dissemination and Implementation pilot grant from the Advancing Science and Policy in the Retail Environment (ASPiRE) center, a National Cancer Institute funded program.

The second paper drew upon insights from elite semi-structured interviews with 30 decision makers and tobacco control advocates as well as representatives of national organizations. Colorado and Virginia were selected as case studies after being compared to all 50 states. Based on key factors which influence Tobacco 21 passage (Jarman, Mendez, et al. 2019), Colorado and Virginia have similar tobacco use rates and moderate ideologically compared to other states. However, the two states exhibit variety in all other factors so were chosen to estimate the T21 political process across the US (Gerring 2008). Interviews were conducted between April 2022 and June 2022. Trint, a subscription service, was used to transcribe recorded interviews. A research assistant reviewed the transcripts to ensure accuracy. Interviews were then analyzed using MAXQDA 2022 and best practices for qualitative coding (Johnny Saldaña 2015).

The third paper utilized information from the retailer observations and semi-structured interviews in addition to review of relevant laws, literature, and policy documents to better understand enforcement policies and procedures. Alongside the scrutiny from my doctoral committee, the research plan for this dissertation was approved by the University of Michigan's Institutional Review Board.

1.4 Stronger Implementation is Needed to Achieve Health Equity

This research exposes the unequal infrastructure for implementation and enforcement across states and localities in the United States, resulting in inconsistent outcomes. Recent state-based tobacco control policies, like Tobacco 21 and flavor restrictions, have been layered atop a network of inadequate and incongruent federal enforcement regimes. Despite these structural issues, recent tobacco control policies have been successful in reducing youth tobacco use. Given the patchwork nature of the current US federal system, the potential benefits of new and existing policies are not distributed evenly across all populations. While youth tobacco use has been reduced, there are many communities which are disproportionately impacted by tobacco-related morbidity and mortality. The weaknesses in the US enforcement system must be resolved to protect those targeted by the tobacco industry. In addition to improvements in enforcement, policy, and retailer education at the state level, federal policy change should be pursued to create equal opportunities across the states to succeed. At the federal level, removing state-based preemption, creating one cohesive enforcement regime, and increasing funding equitably would have a large impact on reducing disparities and improving overall public health.

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Chapter 2: Menthol Product Availability, Placement, and Advertisement Across Neighborhoods in Michigan

The first paper of this dissertation focuses on evaluating the tobacco retail environment to determine if menthol-flavored products are sold or advertised differently across diverse neighborhoods. Given the marketing history of menthol products, especially cigarettes, being targeted to non-White, lower-income areas, this study explores if disparities exist for other products like e-cigarettes, cigarillos, and smokeless tobacco. Utilizing a modified version of the verified Standardized Tobacco Assessment for Retail Settings (STARS), this study describes the retail environment for all menthol tobacco products in two Michigan counties. Using information about neighborhood characteristics, this study determined there are differences in product availability and advertisement across communities based on demographics. However, these differences did not present in the manner that pre-pandemic studies suggested. Non-Hispanic Black neighborhoods were expected to have greater availability and advertising for menthol or mint products, but instead these communities had less availability of tobacco products in general and higher prices for Newport menthol cigarettes. Similarly, Hispanic communities were observed to have greater availability and advertising for menthol and mint products despite this not aligning with expectations.

2.1 Background

In recent years there has been accumulating evidence that menthol flavored cigarettes, compared to non-menthol cigarettes, are linked to higher rates of initiation, lower odds of

successful cessation, and increased health risk due to the chemical composition and cooling nature of the product (Villanti et al. 2017; Gardiner and Clark 2010). In response to these findings and health equity concerns, the US Food and Drug Administration (FDA) announced its intention to ban menthol as a characterizing flavor in cigarettes and all flavored cigars in April 2021 (Office of the Commissioner 2021). Early data on menthol bans show increases in cessation attempts and cessation success (M. Chaiton, Schwartz, et al. 2020), while modeling projects greater smoking reductions in the future, especially among African American populations (Cadham et al. 2020; Levy et al. 2011).

A number of other countries and some parts of the United States have already banned menthol cigarettes (Cadham et al. 2020). Since 2020, Massachusetts has banned all flavored products including menthol cigarettes (Brown and Chen 2019). New Jersey, New York, and Rhode Island subsequently passed flavor restrictions as well, but only for flavored e-cigarettes (Campaign for Tobacco-Free Kids 2023). California, in 2022, became the second state to ban all menthol cigarettes (including restrictions for some flavored tobacco products, primarily flavored e-cigarettes)(California Department of Public Health 2023). At the local level, jurisdictions in California (115), Colorado (6), Illinois (1), Maine (5), Massachusetts (24), Minnesota (20), New York (1), Ohio (1), and Oregon (2) have all passed flavor restrictions which include menthol cigarettes as well as other products (Campaign for Tobacco-Free Kids 2023). Tobacco control advocates in other states and localities are currently pursuing policies to remove menthol and other flavored products from the market, including advocates in Michigan. Following a failed attempt by the governor of Michigan to ban flavors in e-cigarettes via executive action, discussion of restricting flavors of tobacco has shifted to legislative action (LeBlanc 2021). While local jurisdictions are preempted by state law from passing flavor restrictions, local

decisionmakers in Detroit and Washtenaw County have passed resolutions urging the Michigan legislature to ban the sale of all flavored tobacco, including menthol (Covino 2023; Bruckner 2023; Mackay 2023).

As state and local communities and the federal government consider menthol policies, little is known about how the retail environment landscape will change and what the equity implications are for suggested product restrictions. While this topic has been studied by many influential scholars, there has yet to be a comprehensive review of the retail environment which includes all menthol products as well as products which may be used as substitutes. Due to the FDA definition of menthol as a ‘characterizing flavor’, tobacco products labeled as ‘menthol’ are not the only products which contain menthol flavor additives. Rather, many ‘mint’ products are mentholated but do not contain enough menthol to have the flavor be considered the characterizing flavor (Lauren Kass Lempert et al. 2022; Omaiye et al. 2022). In this study mint products and cigarettes with menthol flavor capsules are recorded alongside products labeled as menthol to better understand what alternatives may be available if only menthol-labeled products are banned. Data from this study is intended to provide information about what menthol products are currently available at the point-of-purchase and if availability and advertising differs by neighborhood demographics as it has in the past. This information provides valuable insight into what would be available to consumers once a ban is implemented and which communities may be more impacted by a ban.

Previous research on tobacco retailers has strongly supported a link between the use of tobacco products and exposure to advertising, product placement, and promotions at the point-of-sale (POS, sometimes referred to as point-of-purchase [POP]). For people who smoke, POS marketing increases urges to purchase and makes impulse buying of cigarettes more likely

(Siahpush et al. 2016). Additionally, POS tobacco availability has been linked to cravings to smoke and can negatively impact cessation attempts (Kirchner et al. 2013). Studies of college students have associated recall of e-cigarette and cigar marketing with susceptibility to use e-cigarettes as well as cigars and actual use of cigars, respectively, but showed no impact of cigarette or smokeless tobacco marketing on tobacco susceptibility or use (Pasch et al. 2018). Another study of young adults has suggested some ethnic disparities in e-cigarette use may be a result of increased exposure to POS e-cigarette advertising (Pokhrel et al. 2022). Around college campuses, increased exposure to little cigar and cigarillo POS marketing was also linked to future use of those products (Zhu et al. 2021). Advertisements for one product may also influence use of other products. Mantey et al. recently found e-cigarette displays reduced cigarette cessation among college students who smoked. Additionally, both e-cigarette and cigarette advertising increased use of e-cigarettes for cigarette cessation (Mantey et al. 2019). Whether displays or advertising lead to purchase and use of the intended product, there is substantial evidence that POS displays directly influence tobacco use.

Strong evidentiary data shows POS marketing impacts tobacco outcomes for youth, defined within this dissertation as minors aged 18 or younger. Exposure to POS tobacco advertising increases youth curiosity about products (Portnoy et al. 2014) and has also been connected to use of products. A study in Scotland found that adolescents who self-reported recalling POS e-cigarette displays were more likely to report use of, or intent to use, e-cigarettes, similar to studies of traditional cigarettes (Best et al. 2016). Similarly, in the United States studies have found retail store advertisement was related to youth e-cigarette use (Camenga et al. 2018) and exposure to marketing also increased susceptibility to future use (Mantey et al. 2016; Margolis et al. 2018). Another study found youth exposure to POS tobacco advertisements

increased use of four categories of tobacco products: e-cigarettes, smokeless tobacco, cigarettes, and cigars (Beleva et al. 2019). In California, one more study found students attending alternative high schools spontaneously associated tobacco retail outlets with nicotine and tobacco products rather than other items like snack foods (Pike et al. 2019). Lastly, in a targeted study of youth aged 11 to 15, African American youth were more likely to recognize Newport menthol cigarettes and less likely to recognize Marlboro (non-menthol) cigarettes compared to other students. Youth who recognized Newport cigarettes, regardless of race, were more likely to progress from never smoking to trying smoking within the study period (Dauphinee et al. 2013). Given these findings, and recognizing advertising clearly reaches youths as well as adults, it is important to consider what products are made available and advertised at retailers.

The goal of this study is to observe the tobacco product retail environment in a sample of stores in two Michigan counties to gain a better understanding of the availability and advertising for menthol and mint tobacco products post-COVID-19. While there are many studies focusing on menthol cigarettes at the POS before COVID-19, far less is known about the availability of other menthol tobacco products (chewing tobacco, e-cigarettes, etc.) or other possible substitutes (non-menthol cigarettes, flavored capsule cigarettes, non-cigarette mint products, etc.) after an FDA ban goes into effect (Denlinger-Apte et al. 2021; Cadham et al. 2020; Wackowski et al. 2018; Courtemanche, Palmer, and Pesko 2017; M. Chaiton, Papadhima, et al. 2020; Carpenter and Nguyen 2021). The key questions of this study are:

- 1) Since the COVID-19 pandemic, is the availability of menthol tobacco products still different across neighborhoods with different demographic characteristics?*

2) *Is local point-of-sale advertising for menthol products still different across neighborhoods?*

3) *Is this consistent with prior research?*

The products this study focuses on include cigarettes, cigarillos, cigars, smokeless tobacco (defined as chewing tobacco, snuff, snus), and e-cigarettes. To a lesser extent, loose (pipe) tobacco and hookah/shisha were also explored. In addition to data being recorded before the COVID-19 pandemic, previous studies have been narrowly focused on one product type, like e-cigarettes, without comparing how traditional tobacco products like cigarettes and chewing tobacco may be presented differently at point-of-sale. Rather than having a narrow definition for retailers (such as just specialty stores like vape shops), this project intends to identify all places where any tobacco products are being sold. Only selecting tobacco- or vape-specific shops is also a major limitation for previous studies as specialty stores often have age restrictions to enter (Schleicher et al. 2019). Other locations which sell e-cigarettes and other tobacco products (such as gas stations and convenience stores) do not have such restrictions and therefore may allow youth greater access. By identifying all locations where tobacco products are available, this study aims to more accurately depict the retail environment for menthol products and potential substitutes. Finally, it is important to know where menthol products are available and advertised to better understand what the impact of a menthol ban may be, especially in the aftermath of COVID-19. Therefore, this study will also contribute to baseline data which can be used to evaluate the effect of the national menthol ban and other local policies which may be passed in the post-COVID-19 period.

This study further aims to provide clear and compelling information on existing disparities and update prior research. The goals of this study and methods were chosen in

collaboration with community partners in Grand Rapids and Detroit. In the state of Michigan there is no licensing for tobacco retailers and local community data was being requested to inform policy efforts addressing menthol and flavored tobacco. Through organized dissemination efforts by community partners in Grand Rapids and Detroit, this data is expected to inform community members and decisionmakers of retail conditions so they can create policies with the intent to improve general health and reduce tobacco-related disparities. The key socioeconomic characteristics of neighborhoods which have been correlated with differing tobacco retailer environments are race and ethnicity, as well as income. Both topics will be examined in turn using studies prior to the COVID-19 pandemic to produce hypotheses for this study.

2.1.1 Race and Ethnicity

Mentholated tobacco products, particularly cigarettes, have been shown to be disproportionately marketed to African American neighborhoods across a number of studies (Laws et al. 2002; Henriksen, Schleicher, and Fortmann 2022; Lee et al. 2015; Roberts et al. 2015), and tobacco advertising overall has also been observed to be greater in these neighborhoods (Mills et al. 2018; John, Cheney, and Azad 2009). Adding to these findings, retailer density was identified as higher in African American communities (Mills et al. 2022). Along with greater numbers of retailers and advertisements, studies suggest menthol cigarettes cost less in these communities. In California, Newport cigarettes (a popular brand of menthol cigarettes) have been noted to cost between \$0.20-\$0.25 less in neighborhoods with the highest percentage of African American residents (Henriksen, Schleicher, and Fortmann 2022). In addition to costing less, research has found that price promotions for Newport cigarettes are more common in predominately African American communities (Mills et al. 2018). Beyond cigarettes, little cigars and cigarillos have also been reported to be advertised more heavily

within Black neighborhoods (Ribisl et al. 2017; Cantrell et al. 2013). Flavored cigars specifically were more readily available and advertised more in African American neighborhoods in a recent group study (Rose et al. 2022). Results from a national study with a representative sample of stores across the US also found that areas with a higher percentage of Black residents were more likely to sell flavored cigars in addition to being more likely to display price promotions (Ribisl et al. 2017). Adding to concerns about disparities, a study in St. Louis, Missouri from Moreland-Russell et al. additionally found that “as the proportion of black children in a census tract increased, the proportion of menthol marketing near candy also increased”(Moreland-Russell et al. 2013). These findings together provide robust evidence suggesting African American neighborhoods are subjected to higher levels of tobacco availability and marketing, especially when it comes to menthol cigarettes. It is a reasonable assumption that this may extend to other tobacco products as well.

Latino communities have also been noted to have disproportionate menthol product marketing compared to non-Hispanic White neighborhoods, but to a lesser extent than African American communities (Laws et al. 2002). Studies identified a greater density of tobacco retailers in Hispanic communities (Mills et al. 2022), but data was unclear on which products are available and advertised to Latino communities. Rose et al. recently found that Hispanic neighborhoods in Washington, D.C. had more POS flavored smokeless tobacco advertising, but no other results were significant for this community (Rose et al. 2022). In a nationally representative study, Ribisl et al. found the opposite: areas with greater amounts of Hispanic residents were less likely to sell smokeless tobacco products as well as flavored cigars (Ribisl et al. 2017). As for Asian American communities, it is also unclear if this demographic subgroup is targeted by tobacco companies. While a few studies have found that Asian American

communities are more likely to be exposed to menthol POS advertising (Mills et al. 2018), even more articles suggest no association (Lee et al. 2015). Given these mixed and null results, no association is expected between menthol product availability and advertising for the Hispanic and Asian neighborhoods studied in this paper.

For e-cigarettes, studies indicate that socio-demographic disparities exist across communities, but the results are not consistent. Within Los Angeles County, California, Escobedo et al. found that American Indian, low-income African American, Hispanic/Latino, and Korean American communities were all less likely than a non-Hispanic White comparison community to sell e-cigarette products (including flavored products), have self-service displays, or have e-cigarettes placed near youth-friendly items (Escobedo et al. 2020). However, Venugopal et al. examined vape shop density across the entire contiguous United States in relation to schools and found “vape shops are more densely distributed, and are in closer proximity to schools, in school districts with higher proportions of Asian and Black or African American populations”(Venugopal et al. 2020).

A study of the POS environment in Ohio found e-cigarettes were more likely to have promotions in African American neighborhoods (Roberts et al. 2015). Echoing concerns about disproportionate amounts of advertising in communities of color, especially those which are disadvantaged, Ganz et al. (2015) found that in 2013 over a quarter of stores in Central Harlem (in New York City) had exterior advertising for e-cigarettes and many sold them (Ganz et al. 2015). A similar national study and an analysis from Omaha, Nebraska found that approximately one third and one half, respectively, of tobacco retail outlets sold e-cigarettes, making it difficult to determine if communities of color are in fact targeted (Wan et al. 2017). Additionally, existing point-of-sale studies on menthol e-cigarettes, specifically, found these products were less likely

to be found in African American neighborhoods but were instead more common in non-Hispanic White neighborhoods (Smiley et al. 2021; Laestadius et al. 2018). As this study is focused on menthol products, the same result is expected. Predominately Non-Hispanic White areas are also expected to have greater levels of smokeless tobacco advertising as this is consistent with existing studies on these product types (Widome et al. 2012; Lee et al. 2015).

Based on the findings above from previous studies, the hypotheses for how race and ethnicity will interact with menthol product availability and advertising are as follows:

1. Non-Hispanic Black neighborhoods will have greater menthol flavored product availability and advertising for cigarettes and cigarillos.
2. Hispanic neighborhoods and Asian neighborhoods will not be more or less likely to have menthol flavored product availability or advertising.
3. Non-Hispanic White areas will have greater availability and advertisement of all flavors of smokeless tobacco as well as menthol e-cigarettes.

2.1.2 Income

Low-income communities have been subjected to greater levels of advertising for mentholated products (Laws et al. 2002; Mills et al. 2018), and more tobacco advertising overall (Lee et al. 2015; Roberts et al. 2015). Newport cigarettes were found to be sold at a cheaper price point in low-income neighborhoods (Mills et al. 2018). As the median income of an area increases, there are notably fewer tobacco retailers (Mills et al. 2022). A greater number of POS advertisements are prevalent in low-income areas (John, Cheney, and Azad 2009). While these trends are fairly consistent for cigarettes, cigars, and smokeless tobacco products (Roberts et al. 2015), it is unclear how e-cigarette availability and marketing relates to neighborhood wealth.

Venugopal et al. found that vape shops were further away from neighborhoods with higher poverty, indicating these areas may not be targeted as a marketing opportunity (Venugopal et al. 2020; Ganz et al. 2015). This later finding, however, is in direct contrast with a study by Chido-Amajuoyi et al. Chido-Amajuoyi et al. examined vape shop density in Austin, Texas, and found census tracts containing at least one vape shop were more likely to be classified as a “poverty area” compared to census tracts without a vape shop (Chido-Amajuoyi, Ozigbu, and Zhang 2020). Yet another study in New York City found no difference in e-cigarette availability across neighborhoods with different median household incomes, indicating that the affluence of an area may have no effect on whether these products are available (Giovenco, Spillane, and Merizier 2019). In Omaha, Nebraska, a study on POS advertising similar to this study directly contradicts the New York City study and found lower median household income significantly associated with increased advertising (Wan et al. 2018). However, while these discrepancies may exist simply based on the different areas the studies were conducted, these findings combined demonstrate the need for further research (Roberts et al. 2017).

With this information, the hypotheses for how income will interact with menthol product availability and advertising are as follows:

1. Areas with lower income or higher poverty will have greater menthol product availability and advertising, especially for cigarettes, cigars, and smokeless tobacco.
2. E-cigarette availability and advertisement will not differ by economic factors.

2.2 Methods

This cross-sectional study includes (1) identifying tobacco retailers; (2) geographic information systems (GIS) mapping retailers for sample selection; (3) structured observations of

the retail environment at POS; and (4) analysis of zip code characteristics to determine if there are differences in product availability and marketing across neighborhoods. Methods and measures were selected based on best practices from the literature review, particularly observational procedures for tobacco products (Lee et al. 2014; Feld et al. 2016). The study was conducted in two Michigan counties: Kent County and Wayne County.

2.2.1 Case Selection

The two counties selected for this study in the state of Michigan are Kent County and Wayne County. The major cities in each county are Grand Rapids and Detroit, respectively. The chosen counties have substantial African American populations (among other minority communities) and variety in income levels across neighborhoods, allowing a determination to be made if differences in retail environments exist. Community partners in each city were contacted and collaborated on this project; The Urban League of West Michigan serves the Grand Rapids area while the Making it Count Community Development Corporation serves the Detroit metropolitan area. Both organizations are specifically concerned about the impact of menthol tobacco products in their area and helped shape the goals and methods of this research. Over a series of months, the primary researcher met with members of each organization to discuss the project. Additionally, the Urban League of West Michigan and Making it Count Community Development Corporation contributed to an application for a pilot grant which was awarded for the project.

Partners also assisted in recruiting high school and college students in Detroit and Grand Rapids, respectively, who later collected data within their own communities. With local partners, there has been community involvement in every part of this project. Feedback and discussion has occurred throughout the project to help contextualize the data and provide information which

local decisionmakers could utilize. The Urban League of West Michigan and Making it Count Community Development Corporation additionally plan to disseminate findings to their respective communities in collaboration with the primary researcher.

Besides partner involvement, Kent and Wayne counties were selected based on socio-demographic factors and youth tobacco product use rates. As much of the previous literature reviewed above indicated, racial makeup and income distribution are likely to impact retail environment. The counties selected vary in these two regards, making it easier to discern if differences in retail environments exist between neighborhoods. As points of reference, Kent County has a relatively high Hispanic population, Wayne County has a large non-Hispanic Black population, and each county has at least one zip code with fewer minority residents by comparison (see Chapter 2 Appendix Table A.1). Furthermore, youth vaping rates vary across the two counties, indicating there may be differences in retail environments. Lastly, Detroit and Grand Rapids were both cities of interest to tobacco companies when determining menthol cigarette marketing strategies and specifically mentioned in company records (Wailoo 2021). Targeted advertising campaigns from companies were designed by studying these cities; this creates a legacy and it would be expected that these differences would be apparent to this day across communities.

2.2.2 Retailer Identification

The first portion of the project focused on identifying all retailers in Kent and Wayne counties. To draw a stratified sample for structured observations, a comprehensive list of tobacco retailers was needed. Michigan does not have licensing for tobacco products, so alternative methods were used to identify retailers. The national Synar program overseen by the Substance Abuse and Mental Health Services Administration (SAMHSA) requires each state to have a

minimum age of sale and conduct compliance checks with retailers to ensure minors cannot get access to tobacco products (Substance Abuse and Mental Health Services Administration 2022). For this program, Michigan maintains a master retailer list (MRL) used to sample for Synar compliance checks. A copy of this list was requested but unavailable for this project as the list is not approved by the Michigan Department of Health and Human Services (MDHHS) to be shared with external users.

Alternatively, a three-pronged approach was used to identify retailers. The first strategy involved contacting local coalitions which have undertaken mapping efforts. Only one group, the Hamtramck Drug Free Community Coalition, was able to provide a list of local retailers. As this list was only focused on one community in Wayne County, a database was created using other methods. Retailers included those which typically sell tobacco products (grocery and convenience stores, pharmacies, tobacco shops, etc.) and specialty stores (vape shops). The primary sources of data were the Michigan Liquor Control Commission database through the Department of Licensing and Regulatory Affairs (LARA)(State of Michigan 2023a) (as tobacco products are often sold along with alcohol)(Wagoner et al. 2014); the FDA compliance check inspection database (US Food and Drug Administration 2023a); ReferenceUSA (Infogroup, Inc.) and D&B Hoovers databases (Dunn and Bradstreet) databases (each was searched for primary North American Industry Classification System (NAICS) codes). A small group of NAICS codes cover the vast majority of tobacco retailers and has been noted as a reliable way to identify retailers (D'Angelo et al. 2014). Following protocols from other studies (Ribisl et al. 2017), NAICS codes which may contain potential tobacco retailers were identified and data was pulled.

For Wayne County, data from the Advancing Science & Practice in the Retail Environment (ASPiRE) Center Tobacco Retailer Mapping study in Detroit was available to

supplement these methods (Advancing Science & Practice in the Retail Environment Center 2023).

The search process was intended to be thorough as there is no set method or clear way of identifying possible tobacco retailers (Kong et al. 2017). After data from all the sources above was compiled, the data was deduplicated so each retailer would only appear once. Stores known to not sell tobacco were excluded (i.e., CVS, Trader Joe's, etc.). The data was then cleaned and connected with zip-code level demographic data from the American Community Survey (US Census Bureau 2023).

2.2.3 Mapping for Zip Code and Retailer Selection

With limited resources, it was not feasible to survey all stores within Kent County and Wayne County, thus a sample of retailers in each county was drawn from purposely selected zip codes. This was accomplished by geocoding and merging retailers identified into ArcGIS. Demographic data for each county was available from the State of Michigan GIS Open Data website and was integrated into this analysis (State of Michigan 2023b). 5 ZIP Code Tabulation Areas (ZCTAs) from Kent County and 6 ZCTAs from Wayne County were selected based on key neighborhood demographics: racial makeup, income, and rurality (see Table 2.1). Wayne County has one more ZCTA area selected than Kent County due to heterogeneity; adding the sixth zip code allowed comparison with a ZCTA with a large Middle Eastern and sizeable Asian population. Neighborhoods will be defined by these ZCTAs. From the list of retailers compiled in the first portion of this project, 15 retailers from each ZCTA were randomly selected to be visited. The goal was to have at least 10 viable store observations in each ZCTA for a total of at least 50 tobacco retailers in each county to comprise a large enough sample so differences could be detected between neighborhoods.

2.2.4 Structured Observation of the Retail Environment

The goal of the structured observations was to assess the following: 1) advertising inside/outside; 2) product placement; 3) promotions (special offers/coupons); 4) types of products. To achieve this, a modified version of the Standardized Tobacco Assessment for Retail Settings (STARS) tool was created (Ganz et al. 2015; State and Community Tobacco Control 2023).

The STARS tool and its extensions, the STARS: Vape Shop (vSTARS) (State and Community Tobacco Control 2016) and STARS: Flavored Tobacco (fSTARS) (Counter Tools 2023a) documents, aim to create standardized, policy-relevant data using a comprehensive set of measures for store characteristics, availability of tobacco devices and products, as well as price promotions and messaging (Kong et al. 2017; State and Community Tobacco Control 2016; Counter Tools 2023c) (available in Appendix Figure B.2, B.3, and B4). Considered together, the tools cover all relevant tobacco products and include information on flavors (Henriksen et al. 2016). These three separate documents were aggregated into one cohesive tool focused on the goal of this research: assessing menthol product placement across neighborhoods. Using the STARS document as a base, relevant questions about vaping products were added from the vSTARS document and questions about flavors were added from the fSTARS document. The tool was designed to cover all tobacco products likely to be flavored: cigarettes, cigars (large and small), e-cigarettes, smokeless tobacco, loose (pipe) tobacco, and hookah/shisha. One important distinction added was a separation between menthol and mint flavors. As there have been concerns that a ban on characterizing flavor would only affect products with the label “menthol” and leave other products containing menthol on the market labeled as a version of “mint”, this was an important distinction to make (Cadham et al. 2020; Truth Initiative 2022; Kaur et al. 2020). See Chapter 2 Appendix Figure B.1 for a copy of the modified STARS data form.

Given that the benefits of crowdsourcing were not sufficient for this extensive study (Kim, Lieberman, and Dench 2015), high school and undergraduate students local to each county were recruited and hired to conduct observations alongside the main investigator. Observers received thorough online training on conducting unscheduled, on-site visual observations with personal safety as a priority. The training involved reviewing the research protocol, education on various tobacco products, and familiarization with the paper-and-pencil survey tool. Visits were conducted in pairs with the second observer added to increase safety and the quality of observations. Utilizing the modified STARS tool, observers assessed the outside of the retail location first to decide if it was safe to proceed. If at any time a student felt unsafe, they were trained to leave the situation and move to the next retailer. Assuming there were no threats present, observers recorded advertising present on the outside of the retailer before moving inside. Once inside, the observer would complete the remainder of the assessment if possible. Any spatial questions were estimated instead of measured (ex. Within one foot of candy, advertisement within three feet of the ground). Consent from retailers was not required since the study was observational, but assessments were discontinued if assessors were asked to leave. If a clerk or owner of a retailer establishment questioned the legitimacy of the study or asked for further information, an observer would provide a letter with relevant study information and answer any questions. If a staff member of the establishment wanted to share further information, the primary investigator took notes and would discuss the topic further to gather qualitative information. Assessments were estimated to take 10-15 minutes to complete. Observational procedures were selected based on community partner advice from a previous youth trainer for Michigan FDA Tobacco Compliance Program and existing best practices (Lee et al. 2014; Feld et al. 2016).

2.2.5 Analysis of Demographic and Geographic Data

Observational data was collected from observers, compiled and cleaned. The few discrepancies that existed between observers were reconciled by the primary investigator in the following ways: any data was preferred over missing data; the primary investigator was assumed correct if student partner disagreed; a product was assumed to be available if one observer marked “yes.” Once reconciliation was completed, data was merged into Stata (version 17) for analysis. Rurality data was included from the 2010 US Decennial Census and the remaining sociodemographic variables for each area was available from American Community Survey 5-year estimates (US Census Bureau 2023).

Descriptive statistics were used to analyze initial results. Analysis of menthol product availability and advertising across neighborhoods was also done for chosen demographic characteristics. The majority of data was coded as 1 (present) or 0 (not present). Cigarette prices and the number of different products available for a given measure were continuous variables. For dichotomous variables, mixed-effects logistic regression was utilized and mixed-effects linear regression was used for continuous variables. In line with sampling design, observations were grouped by county (level 1) and zip code (level 2). Additionally, all models are controlled for store type as previous studies have shown that convenience stores are more likely to have advertising and promotions compared to other store types (James et al. 2021; Jeong et al. 2020). Throughout the results, race and ethnicity regressions controlled for median income, rurality, store type, and county (denoted by “*”). Wealth regressions controlled for rurality, store type, and county (denoted by “^”).

2.3 Results

2.3.1 Store Characteristics

Of 177 retailers randomly selected, 112 stores were successfully observed in total, with 56 in Kent County and 56 in Wayne County. Many of the stores which were excluded from the study did not sell tobacco (n=30) or observers were asked to leave (n=12). Stores originally selected but later found to not exist were also excluded (n=9). In Wayne County, 7 stores were excluded because they were closed when observers arrived and in Kent County, and one store was not visited as the observers felt unsafe conducting the observation. A summary of the final sample is available (see Chapter 2 Appendix Figure A.1).

The “other” reasons stores could not be surveyed in Wayne County included observers being told to “come back later” or that the “boss isn’t here” so the clerk was unable to obtain permission to allow the observation. There were also a few cases where owners did not want to be audited. Additionally, there were two cases where a language barrier prevented communication, with one being resolved by the employee (who spoke Spanish) contacting his supervisor. In the other case, the audit was completed but the accuracy is unclear as products were kept under the counter (the language was unknown). While rare, this was one of the 4 (3.3%) retailers which sold tobacco out of view of customers. In the other cases products were either located above the cashier out of view or in the register of the retailer. Only three stores (2.9%) had age restrictions, including the only two vape shops surveyed and one tobacco shop. All stated the store was only for customers of 21 years of age or older. While conversing with a particularly friendly vape shop employee, two young-looking individuals were asked to leave when they entered.

Table 2.2 summarizes the types of stores included in this study. In both counties, the main store types which sold tobacco were convenience stores with gas and beer, wine stores, and liquor stores. The proportions of store types were similar across both counties for most

categories. 5% of retailers were pharmacies and 9.5% of retailers had a pharmacy counter in-store. Beyond store type, it was observed that retail chains restricted products or displayed tobacco products in particular ways. Meijer grocery stores, for example, did not sell tobacco products if they had an accompanying Meijer Gas Station. The gas station instead sold the products. Kroger, by comparison, sold tobacco products in its grocery stores but all products were in a locked, clear cabinet at the front of the store by the checkout areas. Retail chains were consistent across stores and voluntarily restricted the retail environment more so than independent retailers. In addition to grocers and mass merchandisers, discount stores also had a more restrictive environment: across these stores, tobacco products were kept in a clear case behind the registers and check-out areas.

2.3.2 Summary of Product Availability and Advertising

The most commonly sold tobacco products were cigarettes, then cigarillos, then e-cigarettes, followed by smokeless tobacco, and finally large cigars. Fewer than twenty percent of stores sold hookah, shisha, or pipe (loose) tobacco products. Table 2.3 summarizes product availability including products sold, if products were available without retailer assistance (self-service), and if products were near (within one foot) of child-friendly products like candy or toys. Cigarettes were primarily sold behind the counter, but it was common to see disposable e-cigarettes (specifically Breeze Smoke) near the cash register. Cigarillos, especially single cigars, were often directly by the cash register as well. Interestingly, pod-type e-cigarettes were often located behind the counter with cigarettes, chewing tobacco, and other smokeless tobacco products. Color groupings also appeared to be a factor in product placement: cigarettes were in bright white boxes while e-cigarettes all had dark colors on the packaging, often black with a deep color of blue or green. Cigarettes which had a menthol capsule (ex. Camel Crush) also had

black, dark packaging. Large cigars were fairly rare, but when present they were almost always in a display case which could be secured, or were in a separate room. Tobacco and vape stores displayed the majority of tobacco products in a transparent glass case or behind the counter with the exception of hookah shops, where waterpipes and products were more openly displayed and within customer's reach.

Nearly 30% of stores had menthol products representing less than 10% of tobacco products available (see Table 2.5 and Figure 2.1). For over 40% of stores, menthol flavored products were 11-25% of available products and the remaining nearly 30% of stores had over 25% of products menthol flavored. While mint products followed a relatively similar pattern, other flavored products and non-flavored products were more likely to represent a retailer's POS environment. It is important to note product availability was assessed visually at POS and is not indicative of the profit stores make from products. While profitability was not measured during observations, one owner stressed that menthol cigarettes were a large part of their business (1/4th of their income) despite not visually appearing so.

42.86% of retailers had advertisements for tobacco products outside, 19.33% had advertisements below three feet inside the store, and 57.14% of retailers offered a promotion on at least one type of product (see Table 2.6). Cigarillos (n=29), cigarettes (n=28), and e-cigarettes (n=20) were the most common advertisements outside of retailers. Among cigarillos, non-flavored (n=23) and other flavored (n=19) advertisements were most prominent. For cigarettes, the same number of outdoor ads were observed for non-menthol cigarettes as there were for menthol cigarettes (n=21). E-cigarette advertisements were more diverse, with other flavors being most common (n=14), then non-flavored (n=13), mint (n=12), and finally menthol (n=9).

Tables 2.3 through 2.6 provide both count and percentage data which is referenced in the discussion of regression results below.

2.3.3 Regression Results

Regression analysis was used to determine if differences existed across zip code demographics. In one area, exterior advertisements, no significant differences across neighborhoods were observed so are not discussed below (see Appendix Table A.10). Across all other analyses, the following four key themes were the most significant: First, the results for menthol cigarettes differed across neighborhoods, but not as previous research suggested. Second, neighborhood characteristics were also associated with availability and advertising for other menthol and mint tobacco products in an unexpected way. Lastly, there were significant differences across communities related to products which were accessible without the assistance of an employee (self-service), including cigarettes and smokeless tobacco which is prohibited by the FDA. All regression results from the following sections are reported in Appendix Table A.2 through Appendix Table A.12.

2.3.3.1 Menthol Cigarettes and Other Cigarette Products

The most commonly sold product across stores was cigarettes, with 95.8% of stores selling at least one type of cigarette (see Table 2.3). Nearly all stores which sold cigarettes offered at least a menthol and non-menthol option. No neighborhood characteristics were associated with any type of cigarette recorded being significantly more likely. Instead, the only significant difference was non-Hispanic Asian areas being significantly less likely to sell Newport menthol cigarettes (OR= 0.22 (p-value 0.020; CI 0.06, 0.79*)). Additionally, 71.6% of stores sold cigarettes with menthol capsules (e.g., Camel Crush, Marlboro NXT); these products

were significantly more likely to be in non-Hispanic White areas (OR=1.67; p-value 0.014; CI 1.11, 2.52*).

Considering pricing, the cheapest non-menthol and menthol brands were most often Mavericks or Lucky Strike, with each brand having the same price in a store for both the non-menthol and menthol version of the brand. After adjusting for sales tax, the cheapest non-menthol cigarettes were, on average, \$7.06 (see Table 2.4). The cheapest menthol cigarettes were \$7.16 on average. Contrary to expectations, the cheapest non-flavored cigarettes cost less as median income increased (coef.= -0.09; p-value 0.007; CI -0.16, -0.03[^]) but cost more as the poverty rate increased (coef.= 0.26; p-value 0.003; CI 0.9, 0.43[^]) (see Appendix Table A.2). The cheapest menthol cigarettes also cost more as the poverty rate increased (coef.= 0.20; p-value 0.019; CI 0.03, 0.36[^]). Comparatively, Newport menthol cigarettes were \$9.30 on average.

While Newport cigarettes were no more likely to be in one neighborhood type over another, prices were significantly higher in non-Hispanic Black communities (coef.=0.05; p-value 0.009; CI 0.01, 0.09*) and significantly less in Hispanic communities (coef.= -0.05;p-value 0.048; CI -0.10, 0.01*)(see Appendix Table A.2). While conducting observations, clerks in non-Hispanic Black neighborhoods speculated that their area was being up-charged for Newport menthol cigarettes, and this appears in line with findings from the regression.

1.3.3.1.1 Tobacco Near Child-Friendly Products

To assess if tobacco products were near items that are appealing to children, the modified STARS data tool asked: “[is the] Product within 12 inches of toys, candy, gum, slushy/soda machines, or ice cream?” Nearly three-quarters of retailers placed no tobacco products by child-friendly items, there were also over a quarter of stores which did. However, most of the tobacco products by child-friendly items were not cigarettes. Only five retailers had cigarettes near child-

friendly items while the majority kept the cigarettes behind the counter and near other adult-oriented items (see Table 2.3).

1.3.3.1.2 Advertisement within Three Feet of the Floor

While over 80% of stores did not have any advertisements within three feet of the ground within stores, the remainder had one or more advertisements at a level visible to children. Cigarettes were the third most likely product to be advertised below three feet, with over 7.5% of stores advertising in this way (see table 2.6). Across products, non-Hispanic Black neighborhoods were less likely to have any advertisement under three feet (OR=0.80; p-value 0.033; CI 0.65, 0.98*) while Hispanic neighborhoods were more likely to place an ad below three feet (OR=1.33; p-value 0.017; CI 1.05, 1.68*) (see Appendix Table A.2).

1.3.3.1.3 Product Promotions

Over half of stores (57.14%) had a promotion for at least one type of product. Most promotions were for non-menthol and menthol cigarettes. Across products, non-Hispanic Black areas were less likely to have any type of promotion (OR=0.81; p-value 0.014; CI 0.69, 0.96*) while Hispanic communities were more likely to have any promotion (OR=1.30; p-value 0.034; CI 1.02, 1.67*) (see Appendix Table A.2).

2.3.3.2 Menthol and Mint Flavors in Other Tobacco Products

Besides cigarettes, the next most prevalent products were cigarillos, with over 90% of stores selling at least one variety. Of these, the majority sold non-flavored cigarillos and a wide variety of flavors besides mint and menthol. Menthol cigarillos were more likely to be sold in Hispanic communities (OR=1.32; p-value 0.041; CI 1.01, 1.71*). Mint cigarillos were less likely

in non-Hispanic Black neighborhoods (OR =0.69; p-value 0.043; CI 0.49, 0.99*), but were more likely to be sold in higher income areas (OR=1.32; p-value 0.016; CI 1.05, 1.66*).

E-cigarettes were available in over 68% of retailers, with mint and flavors besides menthol being the most common POS options available. Mint was inversely related to neighborhood income (OR=0.80; p-value 0.010; CI 0.68, 0.95[^]) and mint e-cigarettes were significantly more likely to be in higher poverty areas (OR=1.74; p-value 0.028; CI 1.06, 2.86[^]). Cumulatively, over 38% of stores sold at least one menthol e-cigarette. Observers reported the menthol e-cigarette available at most retailers was the brand Vuse, which sells pod-based e-cigarettes. Less than 20% of stores sold disposable menthol e-cigarettes, and less than 6% sold blu menthol e-cigarettes. Menthol e-cigarettes were significantly less likely to be in non-Hispanic Black neighborhoods (OR= 0.81; p-value 0.032; CI 0.68, 0.98*). While menthol-flavored disposable e-cigarettes were not particularly common, mentholated flavors (“iced” or “frozen”) were plentiful (coded as “mint”) and available at nearly every location that sold e-cigarettes. Overall, e-cigarettes were less likely to be sold in higher income areas (OR=0.78; p-value 0.005; CI 0.65, 0.93[^]).

Smokeless tobacco products were the next most prevalent across retailers, with over 60% of stores selling any type. Non-flavored and mint smokeless tobacco products were most common, but over 35% of stores sold a menthol option (see table 2.3). Non-Hispanic Black areas were less likely to have any smokeless tobacco products (OR=0.71; p-value 0.005; CI 0.55, 0.90*), and even less likely to have mint smokeless products (OR=0.54; p-value 0.044; CI 0.29, 0.98*). Non-Hispanic White areas showed the opposite, being more likely to have any smokeless tobacco product (OR=1.62; p-value 0.004; CI 1.17, 2.25*), with mint being even more likely (OR=2.43; p-value 0.005; CI 1.31, 4.51*). Economic factors also were associated with smokeless

tobacco availability: smokeless tobacco was more likely to be available in areas with a greater median income (OR=1.35; p-value 0.019; CI 1.05, 1.74[^]). Mint smokeless tobacco, specifically, was more likely in areas with higher median income (OR=1.97; p-value 0.014; CI 1.15, 3.38[^]) and less likely in areas with greater poverty (OR=0.27; p-value 0.041; CI 0.08, 0.95[^]).

Large cigars, pipe tobacco, and hookah/shisha were less common across the sample. Hispanic neighborhoods were more likely to have large cigars (OR=1.60; p-value 0.003; CI 1.18, 2.17^{*}). Large cigars were also positively associated with median income (OR=1.36; p-value 0.011; CI 1.07, 1.73[^]). While the majority of large cigars observed were non-flavored, menthol, mint, and other flavors (primarily alcohol) were available as well. Areas with higher poverty rates were less likely to have any large cigar (OR=0.47; p-value 0.045; CI 0.22, 0.98[^]), especially mint (OR=0.47; p-value 0.050; CI 0.22, 1.00[^]). Loose (pipe) tobacco was less likely to be in non-Hispanic Black areas (OR=0.73; p-value 0.023; CI 0.55, 0.96^{*}), especially menthol loose tobacco (OR=0.59; p-value 0.017; CI 0.38, 0.91^{*}). Non-Hispanic White communities were more likely to have menthol loose tobacco (OR=1.53; p-value 0.009; CI 1.11, 2.11^{*}). No significant differences between neighborhoods were observed with hookah/shisha.

Prices were also recorded for menthol disposable e-cigarettes. The cheapest menthol disposable e-cigarettes were \$11.58 on average, with the most common product being Breeze Smoke. Breeze Smoke had two different versions of their disposable e-cigarettes, Breeze Plus and Breeze Pro, which were both available in menthol. Breeze Pro is the newer, larger version of the product and was more expensive when available. Another brand which was less common in Michigan, blu menthol disposable e-cigarettes, were \$8.56 on average. When clerks were asked if this product was sold, they replied the product was no longer popular and there were only a few left. They stated blu e-cigarettes were not selling nor restocked because newer products, like

Breeze Smoke, were superior. No significant differences were observed for disposable menthol e-cigarettes across neighborhoods.

While the prices of little cigars and cigarillos were not specifically recorded, some of these products are nearly indistinguishable from cigarettes at the storefront and sold for \$2 or cheaper per pack (ex. Smoker's Choice) and come in flavors other than menthol (e.g., Strawberry Cheyenne). 75.42% of stores sold cigarillos for under \$1 and 65.25% of stores sold single cigarillos (typically for 69¢). 80% of single cigarillos were from the brand Black and Mild, with the next most common being Backwoods (8.22%). Single cigarillos were more likely to be sold in Hispanic neighborhoods (OR=1.30; p-value 0.032; CI 1.02, 1.65*).

1.3.3.2.1 Tobacco Near Child-Friendly Products

Over a quarter of stores displayed tobacco products by child friendly items; of these, most had 5 or fewer types of tobacco products near child-friendly items. The remainder of retailers had up to 11 different types of products displayed within one foot of candy, toys, or other child-focused items. E-cigarettes were the most likely to be located by child-friendly items (over 20% of stores). Cigarillos were also located next to child-friendly products in over 10% of retailers. Both e-cigarettes and cigarillos were likely to be located on a store counter near the register with candy or other snack food displayed direct below the counter where the tobacco products sat. The only significant difference among neighborhoods was that Hispanic neighborhoods were more likely to sell menthol e-cigarettes near child-friendly products (OR=1.38; p-value 0.032; CI 1.03, 1.86*)(see Table 2.3 and Appendix Table A.2 through Appendix Table A.9).

1.3.3.1.2 Advertisement within Three Feet of the Floor

Of the approximately 20% of stores with advertisements below three feet, the majority had four or fewer advertisements for different product types at this level. However, there were up to 14 different product categories advertised in a store at one time below the height of three feet. E-cigarettes were the most likely product to be advertised below three feet, then cigarillos, then cigarettes (see table 2.6). Cigarillo advertisements (OR=1.25; p-value 0.041; CI 1.01, 1.54[^]) and e-cigarette advertisements under three feet (OR=1.63; p-value 0.008; CI 1.13, 2.34*) were significantly more likely in Hispanic neighborhoods. Lastly, as median income increased menthol smokeless tobacco ads under three feet were more likely (1.43; p-value 0.045; CI 1.01, 2.03[^]) (see Appendix Table A.2 through Appendix Table A.9).

1.3.3.1.3 Product Promotions

Promotions included special prices (sales, limited time offers, etc.) for products or multi-pack discounts (buy-one-get-one-free, any special for buying additional units, etc.). This did not include “everyday” prices, such as “2 for 99¢” or “low price” language. While most stores only had one or two promotions available, some had more with one store having 14 promotions available for different product categories. While cigarettes were the most likely product to be promoted at the POS approximately 15% of stores had promotions for smokeless tobacco and just over 13% had promotions for e-cigarettes. In addition to being less likely to have any type of promotion, non-Hispanic Black areas were less likely to have any e-cigarette price promotion (OR=0.02; p-value 0.034; CI 0.01, 0.74*). Conversely, Hispanic communities were more likely to have any price promotion, as well as promotions for: any cigarillo (OR=1.60; p-value 0.041; CI 1.01, 2.51*); any e-cigarette (OR=1.24; p-value <0.001; CI 1.36, 2.81*); and menthol e-cigarettes (OR=1.83; p-value 0.001; CI 1.28, 2.64*) (see Appendix Table A.3, A.7, and A.9).

Neighborhood median income and poverty level were also associated with price promotions (see Table 2.7). Price promotions for any cigarillo, particularly menthol cigarillos, were more likely in areas with a higher median income. Also, as median income increased, any smokeless tobacco was more likely to have a price promotion. This was also true for menthol and mint smokeless tobacco products. In contrast, as poverty increased neighborhoods were less likely to have menthol or mint smokeless tobacco product price promotions (see Appendix Table A.6 and A.7).

2.3.3.3 Self-Service Displays

Self-service is defined as being accessible without the assistance of a clerk or employee. Over 75% of stores did not have any self-service tobacco products. Nearly a quarter of retailers, however, did have at least one tobacco product accessible without the assistance of an employee. Of those, most stores sold 10 or fewer different types of self-service products, but in certain instances up to 19 different self-service product types (out of a possible 26 categories) were sold. None of the three age-restricted stores in the sample set sold self-service products. Hispanic communities were more likely to have any self-service tobacco display (OR=1.44; p-value 0.032; CI 1.03, 2.00*) whereas non-Hispanic Black communities were less likely to have any self-service display (OR=0.38; p-value 0.019; CI 0.17, 0.85*) (see Appendix Table A.12).

The product most likely to be sold as self-service were large cigars. While most cigars were in a glass display case or room that could lock, the doors were not locked and products were accessible without assistance at 17 stores. Large cigar self-service displays were more likely in Hispanic neighborhoods (OR=1.76; p-value 0.001; CI 1.26, 2.45*) and less likely in non-Hispanic Black neighborhoods (OR=0.29; p-value 0.048; CI 0.09, 0.99*). The second most likely self-service product were cigarillos, especially single cigarillos which were often placed

directly next to the main cash register in convenience stores (with or without gas). Any cigarillo self-service display was more likely in communities with more Hispanic residents (OR=1.66; p-value 0.001; CI 1.22, 2.25*) and, again, less likely in non-Hispanic Black communities (OR=0.21; p-value 0.018; CI 0.57, 1.56*). Menthol cigarillos, specifically, were also more likely to be sold via self-service in Hispanic areas (OR=1.51; p-value 0.019; CI 1.10, 2.14*).

Cigarettes and e-cigarettes were the next most likely to be available via self-service. Menthol cigarette self-service displays were more likely in Hispanic neighborhoods (OR=1.53; p-value 0.018; CI 1.08, 2.19*). E-cigarettes were also more likely to be available through self-service in Hispanic communities (OR=1.69; p-value 0.006; CI 1.17, 2.45*). Every product category had at least one store which sold the product within reach of the public.

2.3.4 Tobacco and Vaping Industry Oppose Menthol Restrictions at POS

In addition to in-store promotions and other marketing, some retailers also chose to display campaign materials from Altria Client Services, LLC. The first reads “Nix the Tobacco Tax” with a QR code and then a prompt to “Scan this code to stop the federal tax increase on all tobacco products.” In small text at the bottom of the message there was the following: “Paid for by Altria Client Services, LLC on behalf of Phillip Morris USA, U.S. Smokeless Tobacco Co., John Middleton, and Helix innovations.” A second sign read “The FDA is trying to ban menthol cigarettes and flavored cigars: Stop the Ban” with a prompt to scan another QR code to “add your comments here.” Again, small text at the bottom of the flyer noted the campaign was paid for by “Altria Client Services, LLC on behalf of Phillip Morris USA and John Middleton.” Images of these two signs are available in Chapter 2 Appendix Figure C.1.

2.4 Discussion

Contrary to previous studies, non-Hispanic Black neighborhoods did not have greater menthol flavored product availability or advertising, even for cigarettes and cigarillos. Instead, in many ways the non-Hispanic Black communities studied had lower availability of certain products (mint cigarillos, menthol pipe tobacco, mint smokeless tobacco, and menthol e-cigarettes). Additionally, Newport menthol cigarettes cost more in these neighborhoods. This is in direct contrast to the recent findings of Henriksen, Schleicher, and Fortmann (2022) in California. The results for Hispanic neighborhoods were also contrary to what was predicted. Hispanic neighborhoods were more likely to have certain products (menthol cigarillos, single cigarillos, large cigars), advertise products under three feet (child height), have price promotions for a range of products, and also have self-service displays, even for menthol cigarettes. While these differences may be explained in part by demographic differences in areas studied or methods of analysis, the findings in this paper suggest more research is needed.

Similarly, results based on the median income and poverty level of a neighborhood were also contrary to what was expected. In every product category, menthol products were predicted to be more likely in lower income and higher poverty areas. This was true for none of the tobacco product categories. Instead, higher median income was more likely to be associated with large cigars, smokeless tobacco products, mint cigarillos, and mint smokeless tobacco. Areas with higher poverty rates were less likely to have some of these products, including large cigars (especially mint) and mint smokeless tobacco. As far as advertising, menthol smokeless tobacco advertisements at child-level were more common in higher median income zip codes, rather than less common. Higher median income zip codes also had more price promotions for cigarillos (especially menthol) and smokeless tobacco (especially mint and menthol). Neighborhoods with

high poverty rates were less likely to have price promotions for menthol or mint smokeless tobacco products. One of the most perplexing findings was that the cheapest non-menthol cigarette brands cost less in areas with a higher median income. The cheapest cigarettes, menthol and non-menthol, also cost more as the poverty rate in a zip code increased, even after being adjusted for rurality. E-cigarette availability and advertising was not expected to vary by income or poverty level of an area. While advertising did not vary by these economic factors, availability did as e-cigarettes were less likely to be sold in higher income areas, especially mint e-cigarettes. Additionally, mint (but not menthol) e-cigarettes were significantly more likely to be in higher poverty areas.

There were significant differences for Asian communities when none were expected. As the number of non-Hispanic Asian residents increased, Newport menthol cigarettes were less likely to be sold. This is an interesting finding, but it is also notable that no other findings were significant. This could possibly be due to sample size, as only one neighborhood with a higher ‘Asian’ population, Hamtramck, was chosen. While the area is coded as ‘Asian’ in sources using the US Census (including ACS), it has a large Middle Eastern population. However, ACS and census data overall makes it difficult to study Middle Eastern populations. Middle Eastern people in general are considered “White” while some groups, such as Pakistani individuals, fall under “Asian” (City of Hamtramck Michigan 2021; US Census Bureau 2022). Regardless of this complexity, hookah (which has cultural significance to certain Middle Eastern communities) was not more likely in this neighborhood than others studied.

In non-Hispanic White areas, smokeless tobacco was more common than in other areas, and mint smokeless tobacco availability was significantly greater in these areas as well. This aligns with a study by Widome et al. which found higher smokeless tobacco advertising in areas

with higher non-Hispanic White populations (Widome et al. 2012). Additionally, cigarettes with menthol capsules as well as menthol loose tobacco were more likely in non-Hispanic White areas. While this aligns the most with predictions, these findings add more information.

2.4.1 Self-Service

In this study, nearly a quarter (24.58%) of retailers had self-service products. There are only three products studied which are formally banned by the FDA for self-service: cigarettes, roll-your-own (loose) tobacco, and smokeless tobacco products (Center for Tobacco Products 2021; Counter Tools 2023b). Despite this federal rule, over 8% of retailers sold cigarettes this way, over 7% sold loose tobacco, and 5% sold smokeless tobacco within reach of the public. This is concerning as youth may have direct access to these products- theft and use is a clear concern, but even just seeing them increases brand recognition.

2.4.2 Why Are These Results So Different?

As this is the first study to assess the retail environment following the COVID-19 pandemic, it is likely the massive changes society underwent impacted the tobacco retail environment. However, the effects of the pandemic do not explain why the patterns shifted and why Hispanic neighborhoods had greater product availability and advertising.

One possible factor contributing to the change could be store chain policies that made certain retailers unlike other stores in that category, but as a result of a business practice and not a local or state regulation. Examples of this include Meijer grocery stores not carrying tobacco in stores with a gas station and then having a policy against stocking e-cigarettes. Other stores such as Rite Aid also voluntarily did not stock e-cigarettes. Kroger grocery stores displayed tobacco in locked cases away from the cash registers and Dollar General also had tobacco in locked cases,

but behind the register. Across stores of a certain chain these policies would be the same and limit product availability in a way that other stores, especially independent stores, did not. The companies in this study do not appear to publish their tobacco policies online, but some of this is mentioned in news stories as well as unreliable “articles”(Urie 2020; Talk Radio News 2022).

Besides pandemic-related factors, the tobacco retail environment rapidly changes, especially when it comes to e-cigarette products. This study specifically searched for blu menthol e-cigarettes, a specific brand which was noted to be common in other studies (Gaber et al. 2022; Giovenco, Spillane, and Merizier 2019; Beleva et al. 2019). However, only 7 retailers sold this product. When asked, many commented that the product was out of date and there were better options on the market. Additionally, over the past decade there have been major regulatory changes through the FDA (US Food and Drug Administration 2023b) and policies such as Tobacco 21 (US Food and Drug Administration 2021) which continue to impact the market. The difference in results may also be due to these larger shifts and deserves further study.

There is an array of alternative explanations to the results above which should also be studied further. First, retailer practices which make tobacco products improperly accessible may be spreading due to lower enforcement and education during the pandemic (Giovenco et al. 2021; Zajac et al. 2022; US Food and Drug Administration 2023a). Second, Michigan could be unique in some important way, such as weaker tobacco control policies and enforcement. This cannot be determined without comparing across states, however. Third, there could have been a change in industry tactics to target Hispanic communities instead of Black communities. While it is unclear why Hispanic communities would be targeted, public health and civil rights organizations have devoted large amounts of money and man hours to educate the public and legislators on the targeting of menthol products to African American communities. National

organizations are involved such as the African American Tobacco Control Leadership Council, which is self-described as “our country’s leading public health education and advocacy organization taking on Big Tobacco to save Black lives”(African American Tobacco Control Leadership Council 2023). In Michigan, groups like the West Michigan Health Equity Coalition, Urban League of West Michigan (Flores 2022), and Making it Count Community Development Corporation have been heavily involved in similar efforts (The Michigan Chronicle 2023). This also ties into the final, more positive hypothesis: tobacco control efforts are working to reduce disparities in certain communities, particularly non-Hispanic Black communities. Not only are the efforts mentioned happening, but they are making an impact on policy and raising awareness. An example of this is Chicago’s regulation of menthol products in 2013 (Tobacco Control Legal Consortium 2016) as well as recent news attention (Cary Junior II 2021; Sei 2023).

2.4.3 Policy Options

In Michigan, where there are relatively few restrictions on the retail environment for tobacco, products are readily available. One way to address this would be to require tobacco products be placed out of sight, as a few of the stores in this study chose to do. This is a possible solution to concerns about POS availability and advertising without removing products. Another placement option would be to require tobacco products be placed a certain distance away from objects like candy, snacks, toys, and other child-friendly items (Warner et al. 2022).

As youth access is often a concern, one strategy for addressing this is having an age restriction for stores. Over 97% of retailers in this study had no age policy posted, and the only ones which did were tobacco or vape shops. Beyond this category, other stores could consider a 21 and older section or option. Additionally, owners have expressed a willingness to stop selling tobacco, accepting advertisements, or running promotions for a price (Laws et al. 2002). While the

study by Laws et al. may be outdated, future research should assess what financial incentives would be required to encourage retailers to voluntarily stop selling or promoting tobacco products.

Over 9% of retailers who sold tobacco products were pharmacies, which can be seen as contrary to their ideals of selling health products. Retailers whose primary business is pharmaceutical retail (such as Rite Aid, Walgreens, small businesses, etc.) have faced pressure to stop selling tobacco products. CVS is an example of a store which has stopped selling tobacco products completely in 2015 and other stores such as Rite Aid do not sell e-cigarettes but continue to sell cigarettes, cigars, and smokeless tobacco (CVS Health 2019; Public Health Law Center 2018). Stores which have a pharmacy but have another primary business, such as grocers, mass merchandisers, or convenience stores, do not seem to have faced the same pressures.

Other than restricting availability and placement, there are also minimum price policies, tax increases, minimum pack size policies, and other tobacco control measures. While counter-marketing and messaging, such as graphic warning posters, are an option at POS, these may actually increase smoking initiation, as seen in an experiment of POS signage conducted by Shadel et al. As such, promotions or signage in the retail environment should be reduced through regulation (Shadel et al. 2019). Similar to price, promotions at the POS can also be regulated (Warner et al. 2022).

Lastly, product standards for tobacco products can be changed as well. While menthol flavored products make up a large proportion of retailer stock currently, removing the characterizing flavor will not remove menthol from products. The majority of tobacco products, even “non-flavored” contain a low level of menthol additive to increase product appeal (similar to how sugars, licorice extract, and cocoa (chocolate) is added to cigarettes) (PhillipMorrisUSA

2015; Ai et al. 2016; Maa and Wigand 2022). Beyond this, mint flavors and other mentholated flavors (like Lush Ice) were also shown in this study to be widely available. When considering menthol bans and other flavor policies it is important to recognize what products are similar but not affected by a ban as it can lead to loopholes and decreased efficacy of a policy (Maa and Wigand 2022; M. O. Chaiton et al. 2022; Lauren Kass Lempert et al. 2022; Public Health Law Center 2022). A good example of this is capsule cigarettes as they were introduced in Canada and other countries to circumvent existing menthol bans (Kyriakos, Zatoński, and Filippidis 2023). Cigarettes with menthol capsules were available in over 70% of stores in this study; their widespread availability therefore suggests that they may become substitutes for menthol cigarettes if they are not also banned. To prevent this problem, decision makers should carefully review policy language to ensure it is comprehensive and will actually remove targeted products and prevent replacements.

There are many alternatives to menthol products available beyond capsule cigarettes. In other states and countries which have banned menthol, menthol-flavored cards and other products have been created to recreate the experience of menthol cigarettes with non-menthol cigarettes (Jewett and Baumgaertner 2023). This indicates that paraphernalia that alters tobacco products should also be closely monitored and regulated when possible. Tobacco product paraphernalia in itself can also influence use rates: In England, POS displays are banned but not for e-cigarettes or tobacco paraphernalia. While there was no difference in display visibility for these products it is important to keep in mind what is excluded from a ban as it may still impact tobacco use rates (Brocklebank et al. 2022).

It was interesting to find tobacco and vaping industry campaign materials at the POS, but it does make sense as a way to encourage grassroots opposition to FDA action from tobacco

users directly. Future studies should explore this type of signage further to understand if it is effective in notifying tobacco users of tobacco control initiatives and if it creates effective pushback.

2.4.4 Educational Opportunities

Even without policy change, there are numerous ways education for retailers could be improved to reduce self-service and promote change at the POS. While education may have been lacking due to the pandemic, the results from the Hispanic communities indicate there may be some language barriers or educational deficits specific to that community. However, if it was a language issue then similar issues would be expected for stores in the Middle Eastern zip code. Without knowing more about the languages spoken by store owners and clerks, it is unclear how much language is a barrier. A previous study in Ohio which interviewed store clerks found over one-third were from a country outside the US, with the most common languages being Arabic, Hindi, Spanish, and Urdu (Jarman et al. 2019). More information would need to be collected to determine if retailers who have employees with a first language other than English are less likely to be in compliance or if other factors are at play.

As mentioned above, the prices for cigarettes were not what was expected based on previous literature. The results for cigarette prices observed in this study could be used for educational purposes. Having the lowest prices be in higher income neighborhoods and the highest cheap cigarette prices being in the neighborhoods with higher poverty rates is very concerning as individuals with a lower socioeconomic status (SES) are more likely to use tobacco products. In Michigan, 2021 data showed low SES individuals had the highest smoking rate: 43.8% compared to the state average of 17% that year (Shamo 2023). For Newport menthol cigarettes in this study, the prices were higher in non-Hispanic Black communities and

significantly lower in Hispanic communities. It is worth noting that Newport prices have been increased by their maker throughout the pandemic to today, increasing by a “combined \$1.78 since January 2020”(Craver 2022). These increases may not be the same across communities and may be taking advantage of communities who have a history of using Newport products, while also lowering the price in other communities to entice new users. A Goldman Sachs analyst report covered by the Winston-Salem Journal noted popular cigarette brands like Newport “have a very loyal customer base and strong/effective promotions should be able to keep those consumers within the franchise”(Craver 2022), indicating that market experts believe those who use cigarettes will continue to smoke their preferred brand even if the price keeps rising.

Lastly, raising awareness about these disparities is key to addressing them. While some studies have shown educational campaigns can increase cessation across various demographic groups (Prochaska et al. 2019; Nonnemaker et al. 2014), others have noted that disparities still exist despite these educational efforts (Kingsbury et al. 2020; Colston et al. 2021). Changes in education tailored for certain groups or areas, like urban/rural, would be beneficial to help close these gaps (Mumford et al. 2019). The role of racism and targeting specific communities needs to be better understood, but communicating current evidence and incorporating it into educational campaigns will be helpful to acknowledging and assessing disparities.

2.4.5 Limitations

This study focused on availability and advertising of (primarily) menthol and mint tobacco products in two communities in Michigan. Due to the limited scope of this study, non-flavored and other flavored product data was collected but was not thoroughly analyzed. This paper discussed overall trends for these products, but regressions were not run for those categories. The data is available for further analysis, as well as data on rurality. Likewise, future

studies could utilize the GIS mapping to understand how proximity to certain areas, like schools or transportation hubs, relates to availability and advertising of tobacco products. Mapping would also be useful in examining the overlap of race and income.

This audit focused on the presence or absence of products and advertisements and did not count individual products or advertisements, share of advertising voice, or content of advertising, making it difficult to compare to other studies. Similar to other observational studies, the methods used have drawbacks. This study is based only on what could be observed; items may have been hidden from sight and is not indicative of sales or use. Unfortunately, it was difficult to see cigarillo brands like Cheyenne and Smokers Choice (for example) as they looked very similar to cigarettes and were also behind the counter, meaning the availability of cigarillos may have been undercounted. This is especially problematic for mint or menthol cigarillos because the flavor is often in small letters and hard to see if far away. Further training and education may have helped with this, but online training was chosen due to the COVID-19 pandemic as well as scope and capabilities of this pilot project. Additionally, there were many different products available and store layout varied so it could be very difficult to spot a specific product type.

The methods were carefully considered to improve reliability, but reliability was not measured. Spatial analysis was not considered for this pilot project, but future studies with more retailers may add this component. Future studies could also expand upon this study by measuring youth and adult use, interviewing clerks, reviewing sales data, or analyzing the presence and advertising of other products or flavors. The landscape of tobacco products evolves quickly and, as such, data could not be collected on all product types. This study focused on disposable and pod-based e-cigarettes and did not explore other subgroups of Electronic Nicotine Devices such as cigalike and e-hookah devices. Future studies could explore this area further.

2.5 Conclusion

Contrary to expectations from research prior to the pandemic, non-Hispanic Black neighborhoods did not have greater availability and advertising for menthol or mint products. Instead, these communities had less availability of certain products and higher prices for Newport menthol cigarettes. Unexpectedly, Hispanic communities were observed to have greater availability and advertising for menthol and mint products. These findings suggest there have been significant changes to the tobacco retailer environment during COVID-19, and there are many improvements which could be made to enforcement, policy, and retailer education. Further research is necessary to determine why the results in Kent County and Wayne County vary so greatly from previous study findings.

2.6 Chapter 2 Acknowledgements

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2.7 Chapter 2 Exhibits

Location	ZCTA	%Non-Hispanic White*	% Non-Hispanic Black*	%Non-Hispanic Asian*	% Hispanic (Any Race)*	% Below Poverty Rate^	Median household income^	% Under 18>	% Rural+
Kent County	49301	87.9%	1.2%	3.8%	4.2%	1.8%	\$149,356	28.5%	43.6%
	49319	88.8%	0.9%	1.0%	5.1%	6.8%	\$93,422	24.8%	35.4%
	49504	91.1%	0.3%	0.3%	5.1%	7.5%	\$70,770	21.3%	76.3%
	49507	74.4%	7.0%	1.4%	13.6%	17.5%	\$57,413	20.5%	0.0%
	49509	27.8%	30.4%	1.1%	0.34%	26.2%	\$47,216	30.7%	0.0%
Wayne County	48111	65.9%	23.9%	1.8%	3.7%	9.9%	\$64,318	19.9%	16.9%
	48209	18.0%	8.8%	0.0%	71.0%	36.3%	\$34,104	33.1%	0.0%
	48212	41.9%	22.0%	27.5%	1.0%	41.3%	\$32,439	31.2%	0.0%
	48221	7.6%	87.0%	1.5%	0.9%	16.9%	\$46,209	22.2%	0.0%
	48227	1.1%	95.3%	0.0%	0.8%	32.1%	\$31,211	24.5%	0.0%
	48236	84.5%	8.6%	2.0%	2.0%	5.7%	\$120,156	23.6%	0.0%

American Community Survey 2021 5-year estimates; *Table DP05, ^S1701, >S1901
+Decennial Census 2010 Table P2 (US Census Bureau 2023)

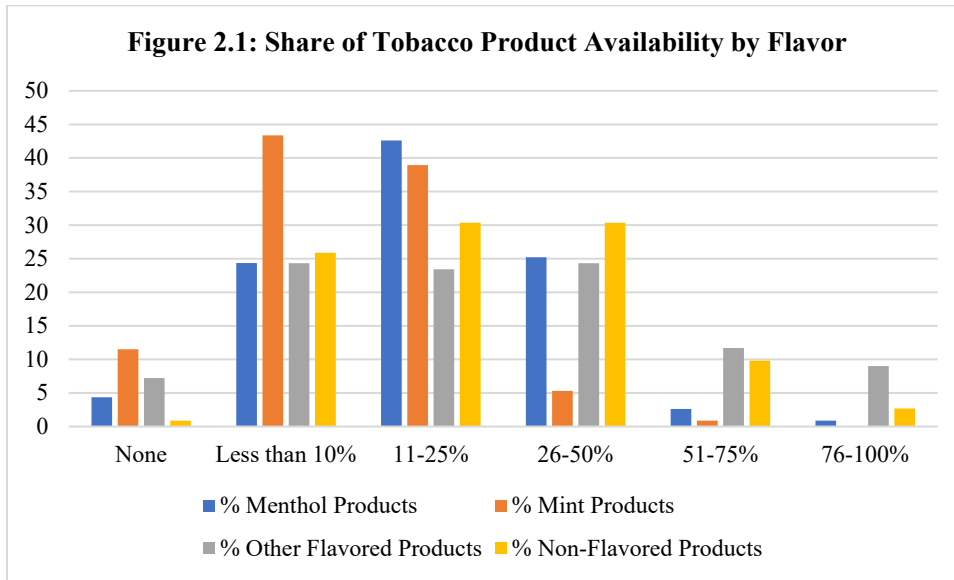
	Grand Rapids	Detroit	Total
Convenience store with gas (e.g., Exxon, Shell)	18	18	36
Convenience store without gas (e.g., 7-Eleven)	9	3	12
Drug store or pharmacy (e.g., Walgreens, Rite Aid)	2	4	6
Beer, wine, liquor store	14	19	33
Grocery store (e.g., deli, small grocer, Kroger)	7	7	14
Mass merchandiser (e.g., Walmart, Meijer, Costco)	0	1	1
Discount store (e.g., Dollar General, Family Dollar)	6	4	10
Tobacco shop (e.g., Wild Bill's, cigar shops, hookah bars)	2	6	8
Vape shop/head shop with vaping products	1	1	2
Total	59	63	122

Table 2.3 Product Availability						
	Product Sold (n)	Product Sold (%)	Self Service (n)	Self Service (%)	Near Child-Friendly Products (n)	Near Child-Friendly Products (%)
Cigarettes	114	95.8	10	8.47	5	4.20
Any non-menthol	111	94.07	9	7.63	2	1.68
Menthol (except Newport)	109	92.37	9	7.63	4	3.39
Newport specifically	110	94.02				
Cigarillo	107	90.68	15	12.71	14	11.86
Non-Flavored	102	87.18	13	11.02	14	11.86
Menthol	18	15.79	8	6.78	1	0.84
Mint	15	13.16	3	2.52	2	1.68
Other Flavor	97	83.62	9	7.63	12	10.17
Large Cigars	31	26.5	17	14.41	3	2.52
Non-Flavored	26	22.22	14	11.86	3	2.52
Menthol	10	8.7	6	5.04	0	0
Mint	8	6.9	2	1.68	0	0
Other Flavor	16	13.68	8	6.78	0	0
Pipe (Loose) Tobacco			9	7.63	0	0
Non-Flavored			8	6.78	0	0
Menthol			7	5.88	0	0
Mint			3	2.52	0	0
Other Flavor			4	3.39	0	0
Smokeless Tobacco	70	60.87	6	5.04	1	0.84
Non-Flavored	65	56.52	6	5.04	0	0
Menthol	40	35.09	4	3.39	1	0.84
Mint	59	51.3	3	2.52	0	0
Other Flavor	47	41.23	9	7.63	0	0
E-Cigarettes	81	68.07	10	8.47	25	21.19
Non-Flavored	60	50.85	9	7.63	15	12.71
Menthol	44	38.26	8	6.78	11	9.32
Mint	71	61.74	7	5.88	21	17.8
Other Flavor	77	65.25	7	5.88	20	16.95
Any Product	122		29	24.58	30	25.21
Obs.	122		119		119	

	Product Sold (n)	Product Sold (%)	Self Service (n)	Self Service (%)	Near Child-Friendly Products (n)	Near Child-Friendly Products (%)
Hookah	19	16.1	5	4.20	1	0.84
Non-Flavored	20	16.95	4	3.39	1	0.84
Menthol	2	1.72	2	1.68	1	0.84
Mint	4	3.45	5	4.20	1	0.84
Other Flavor	4	3.45	5	4.20	1	0.84
Shisha	14	11.97				
Non-Flavored	11	9.4				
Menthol	1	0.85				
Mint	9	7.69				
Other Flavor	14	11.97				
Any Product	122		29	24.58	30	25.21
Obs.	122		119		119	

	Observations	Min	Max	Mean	Standard Deviation
Cheap Non-menthol	108	4.24	9.43	7.11	0.97
Cheap Menthol	107	4.24	9.43	7.16	0.91
Newport Menthol	107	7.79	10.69	9.30	0.52
Cheap disposable e-cig	20	6.99	18.82	11.58	3.77
Blu disposable e-cigarette	7	7.49	12	8.56	1.54

	% Menthol Products	% Mint Products	% Other Flavored Products	% Non-Flavored Products
None	4.35	11.5	7.21	0.89
Less than 10%	24.35	43.36	24.32	25.89
11-25%	42.61	38.94	23.42	30.36
26-50%	25.22	5.31	24.32	30.36
51-75%	2.61	0.88	11.71	9.82
76-100%	0.87	0	9.01	2.68



	Outside Ads (n)	Outside Ads (%)	Ad. 3ft (n)	Ad. 3ft (%)	Promotion (n)	Promotion (%)
Cigarettes	28	22.58	9	7.63	62	52.10
Non-Menthol	21	17.8	8	6.78	46	38.98
Menthol	21	17.65	7	5.88	56	47.46
Cigarillo	29	23.39	10	8.47	7	5.88
Non-Flavored	23	19.33	10	8.47	6	5.08
Menthol	3	2.56	5	4.20	4	3.39
Mint	0	0	3	2.52	2	1.68
Other Flavor	19	15.97	4	3.39	3	2.52
Large Cigars	2	1.61	3	2.52	6	5.04
Non-Flavored	1	0.85	3	2.52	5	4.20
Menthol	0	0	2	1.68	4	3.39
Mint	0	0	1	0.84	1	0.84
Other Flavor	1	0.85	2	1.68	3	2.52
Pipe Tobacco			3	2.52	5	4.20
Non-Flavored			3	2.52	4	3.39
Menthol			3	2.52	4	3.39
Mint			3	2.52	1	0.85
Other Flavor			2	1.68	2	1.68
Any Outdoor Ad	54	42.86	23	19.33	68	57.14
Observations			119		119	

Table 2.6 Advertising at POS (continued)						
	Outside Ads (n)	Outside Ads (%)	Ad. 3ft (n)	Ad. 3ft (%)	Promotion (n)	Promotion (%)
Smokeless Tobacco	11	8.73	5	4.20	18	15.13
Non-Flavored	9	7.5	4	3.39	14	11.86
Menthol	4	3.36	4	3.39	12	10.17
Mint	5	4.2	3	2.52	17	14.41
Other Flavor	3	2.54	2	1.68	14	11.86
E-Cigarettes	20	16.13	11	9.24	16	13.45
Non-Flavored	13	10.92	5	4.20	10	8.47
Menthol	9	7.69	8	6.78	13	11.02
Mint	12	10.08	6	5.04	8	6.78
Other Flavor	14	11.76	7	5.88	10	8.62
Hookah	5	4.03	2	1.68	1	0.84
Non-Flavored	4	3.39	2	1.68	1	0.84
Menthol	2	1.71	1	0.84	1	0.84
Mint	2	1.69	1	0.84	1	0.84
Other Flavor	3	2.54	1	0.84	1	0.84
Any Outdoor Ad	54	42.86	23	19.33	68	57.14
Observations			119		119	

Table 2.7 Price Promotion and Income		
Type	Median Income	Below Poverty
Any Cigarillo	1.34 (p-value 0.011; CI 1.07, 1.69)^	Not significant
Menthol Cigarillo	1.40 (p-value 0.031; CI 1.03, 1.89)^	Not significant
Any Smokeless	1.23 (p-value 0.027; CI 1.02, 1.47)^	Not significant
Menthol Smokeless	1.33 (p-value 0.031; CI 1.03, 1.71)^	0.28 (p-value 0.018; CI 0.10, 0.80)^
Mint Smokeless	1.50 (p-value 0.002; CI 1.16, 1.95)^	0.26 (p-value 0.009; CI 0.09, 0.71)^

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2.9 Chapter 2 Appendix A

	Kent	Wayne	Michigan (all counties)
Population	653,786	1,753,893	9,995,915
% below 18 years of age	24.1%	23.6%	21.7%
% Non-Hispanic Black	9.7%	38.3%	13.8%
% American Indian & Alaska Native	0.8%	0.5%	0.7%
% Asian	3.4%	3.5%	3.4%
% Native Hawaiian/Other Pacific Islander	0.1%	0.0%	0.0%
% Hispanic	10.7%	6.1%	5.2%
% Non-Hispanic White	73.5%	49.5%	74.9%
% Rural	15.7%	0.7%	25.4%
Median household income	\$61,700	\$46,400	\$56,600
Income inequality*	4.2	5.8	4.7
Adult smoking	15%	21%	19%
Middle school vaping	9.8%	7.7%	n/a
High school vaping	22.2%	24.2%	n/a

Sources: Michigan Profile for Healthy Youth (MiPHY), 2017-2018 data; rates are for any past 30-day use (State of Michigan 2021)

Appendix Table A.2. All Cigarette Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income [^]	Below Poverty [^]
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Cigarettes	0.92 (p-value 0.673; CI 0.64, 1.34)	0.57 (p-value 0.223; CI 0.23, 1.41)	0.39 (p-value 0.111; CI 0.12, 1.24)	(Omitted)	0.92 (p-value 0.608; CI 0.67, 1.26)	1.04 (p-value 0.07; CI 0.41, 2.62)
Cheap Non-Flavored Cigarette Sold	1.02 (p-value 0.884; CI 0.75, 1.39)	0.68 (p-value 0.285; 0.33, 1.38)	0.60 (p-value 0.260; 0.25, 1.46)	1.16 (p-value 0.412; 0.81, 1.67)	0.88 (p-value 0.265; CI 0.69, 1.11)	1.22 (p-value 0.536; CI 0.65, 2.29)
Cheap Menthol Cigarettes Sold	1.16 (p-value 0.317; CI 0.87, 1.54)	0.52 (p-value 0.061; CI 0.26, 1.03)	0.46 (p-value 0.068; CI 0.20, 1.06)	1.12 (p-value 0.458; CI 0.83, 1.52)	1.07 (p-value 0.553; CI 0.85, 1.36)	0.65 (p-value 0.202; CI 0.34, 1.26)
Newport Menthol Cigarettes Sold	0.99 (p-value 0.975; CI 0.59, 1.67)	0.72 (p-value 0.489; CI 0.29, 1.81)	0.22 (p-value 0.020; CI 0.06, 0.79*)	(Omitted)	0.99 (p-value 0.985; CI 0.64, 1.54)	0.60 (p-value 0.346; CI 0.20, 1.75)
Menthol Capsule Cigarettes	0.80 (p-value 0.117; CI 0.60, 1.06)	1.67 (p-value 0.014; CI 1.11, 2.52*)	0.99 (p-value 0.988; CI 0.35, 2.78)	0.99 (p-value 0.951; CI 0.67, 1.47)	0.95 (p-value 0.703; CI 0.74, 1.23)	0.76 (p-value 0.444; CI 0.39, 1.52)

Price	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Cheap Non-Flavored Cig Price	0.03 (p-value 0.382; CI - 0.04, 0.10)	-0.08 (p-value 0.084; CI - 0.18, 0.01)	0.13 (p-value 0.337; CI - 0.13, 0.38)	0.01 (p-value 0.908; CI - 0.08, 0.09)	-0.09 (p-value 0.007; CI - 0.16, -0.03^)	0.26 (p-value 0.003; CI 0.9, 0.43^)
Cheap Menthol Cig Price	0.04 (p-value 0.281; CI - 0.03, 0.10)	-0.08 (p-value 0.100; CI - 0.17, 0.01)	0.09 (p-value 0.514; CI - 0.19, 0.38)	-0.01 (p-value 0.945; -0.09, 0.08)	-0.06 (p-value 0.055; CI - 0.12, 0.01)	0.20 (p-value 0.019; CI 0.03, 0.36^)
Newport Price	0.05 (p-value 0.009; CI 0.01, 0.09*)	-0.04 (p-value 0.151; CI - 0.10, 0.01)	-0.01 (p-value 0.985; CI - 0.16, 0.16)	-0.05 (p-value 0.048; CI - 0.10, 0.01*)	0.02 (p-value 0.335; CI - 0.02, 0.05)	-0.04 (p-value 0.402; CI - 0.14, 0.06)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Cigarette Self-service	(Omitted)	3.40 (p-value 0.363; CI 0.24, 47.38)	1.16 (p-value 0.918; CI 0.07, 19.57)	2.73 (p-value 0.071; CI 0.92, 8.12)	1.40 (p-value 0.443; CI 0.59, 3.28)	0.88 (p-value 0.800; CI 0.33, 2.36)
Menthol Cigarette Self-service	0.26 (p-value 0.180; CI 0.04, 1.87)	1.61 (p-value 0.381; CI 0.56, 4.65)	0.92 (p-value 0.899; CI 0.24, 3.55)	1.53 (p-value 0.018; CI 1.08, 2.19*)	1.19 (p-value 0.370; CI 0.82, 1.72)	0.46 (p-value 0.229; CI 0.13, 1.64)
Any Cigarette Ad Below 3 Feet	(Omitted)	1.44 (p-value 0.652; CI 0.29, 7.10)	(Omitted)	22.32 (p-value >0.000; CI 16.78, 29.71*)	1.47 (p-value 0.245; CI 0.77, 2.79)	0.98 (p-value 0.924; CI 0.61, 1.57)
Menthol Cigarette Ad Below 3 Feet	(Omitted)	1.16 (p-value 0.765; CI 0.44, 3.02)	(Omitted)	20.49 (p-value >0.000; CI 15.06, 27.90*)	1.39 (p-value 0.087; CI 0.95, 2.02)	0.92 (p-value 0.942; CI 0.11, 7.58)
Any Cigarette Price Promo	0.88 (p-value 0.129; CI 0.75, 1.04)	1.21 (p-value 0.115; CI 0.95, 1.54)	0.86 (p-value 0.595; CI 0.49, 1.51)	1.08 (p-value 0.429; CI 0.89, 1.33)	0.98 (p-value 0.775; CI 0.85, 1.13)	0.49 (p-value 0.459; CI 0.07, 3.24)
Menthol Cigarette Price Promo	0.86 (p-value 0.100; CI 0.71, 1.03)	1.06 (p-value 0.691; CI 0.80, 1.41)	1.22 (p-value 0.565; CI 0.62, 2.39)	1.18 (p-value 0.164; CI 0.93, 1.49)	1.05 (p-value 0.554; CI 0.87, 1.25)	0.90 (p-value 0.586; CI 0.61, 1.32)
Any Cigarette Near Candy	0.86 (p-value 0.398; CI 0.60, 1.22)	0.78 (p-value 0.519; CI 0.38, 1.64)	(Omitted)	1.53 (p-value 0.068; CI 0.97, 2.41)	1.02 (p-value 0.916; 0.74, 1.39)	0.92 (p-value 0.842; CI 0.41, 2.06)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.3. All Cigarillo Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income^	Below Poverty^
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Cigarillo	1.13 (p-value 0.479; CI 0.81, 1.56)	0.71 (p-value 0.250; CI 0.39, 1.28)	(Omitted)	1.21 (p-value 0.325; CI 0.83, 1.78)	1.16 (p-value 0.313; CI 0.87, 1.54)	0.59 (p-value 0.160; CI 0.28, 1.23)
Menthol Cigarillo	0.78 (p-value 0.062; CI 0.61, 1.01)	1.23 (p-value 0.369; CI 0.78, 1.93)	0.71 (p-value 0.525; CI 0.24, 2.05)	1.32 (p-value 0.041; CI 1.01, 1.71*)	1.09 (p-value 0.519; CI 0.84, 1.41)	1.14 (p-value 0.707; CI 0.58, 2.22)

Mint Cigarillo	0.69 (p-value 0.043; CI 0.49, 0.99*)	1.48 (p-value 0.056; CI 0.99, 2.22)	1.35 (p-value 0.565; CI 0.48, 3.77)	1.21 (p-value 0.264; CI 0.86, 1.70)	1.32 (p-value 0.016; CI 1.05, 1.66^)	0.69 (p-value 0.352; CI 0.31, 1.51)
Single Cigarillo	0.93 (p-value 0.466; CI 0.78, 1.12)	0.86 (p-value 0.315; CI 0.65, 1.15)	0.88 (p-value 0.699; CI 0.46, 1.68)	1.30 (p-value 0.032; CI 1.02, 1.65*)	1.02 (p-value 0.791; CI 0.86, 1.22)	1.23 (p-value 0.340; CI 0.80, 1.90)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Cigarillo Under \$1	1.11 (p-value 0.335; CI 0.90, 1.37)	0.73 (p-value 0.063; CI 0.52, 1.02)	0.61 (p-value 0.170; CI 0.31, 1.23)	1.17 (p-value 0.295; CI 0.87, 1.56)	0.91 (p-value 0.279; CI 0.76, 1.08)	1.45 (p-value 0.143; CI 0.88, 2.40)
Any Cigarillo Self-service	0.21 (p-value 0.018; CI 0.57, 1.56*)	1.23 (p-value 0.484; CI 0.69, 2.17)	0.99 (p-value 0.983; CI 0.29, 3.39)	1.66 (p-value 0.001; CI 1.22, 2.25*)	1.20 (p-value 0.196; CI 0.91, 1.57)	0.94 (p-value 0.89; CI 0.41, 2.16)
Menthol Cigarillo Self-service	0.27 (p-value 0.186; CI 0.04, 1.87)	1.58 (p-value 0.392; CI 0.55, 4.55)	0.91 (p-value 0.892; CI 0.24, 3.44)	1.51 (p-value 0.019; CI 1.10, 2.14*)	1.08 (p-value 0.690; CI 0.74, 1.56)	1.11 (p-value 0.820; CI 0.45, 2.77)
Mint Cigarillo Self-service	0.06 (p-value 0.007; CI 0.01, 0.48*)	1.67 (p-value 0.220; CI 0.74, 3.76)	1.31 (p-value 0.617; CI 0.46, 3.71)	1.30 (p-value 0.211; CI 0.86, 1.96)	0.41 (p-value 0.571; CI 0.02, 8.79)	(Omitted)
Any Cigarillo Ad Below 3 Feet	0.95 (p-value 0.699; CI 0.72, 1.25)	1.08 (p-value 0.771; CI 0.63, 1.86)	1.02 (p-value 0.974; CI 0.39, 2.62)	1.06 (p-value 0.753; CI 0.74, 1.51)	1.25 (p-value 0.041; CI 1.01, 1.54^)	0.62 (p-value 0.116; CI 0.35, 1.12)
Menthol Cigarillo Ad Below 3 Feet	0.70 (p-value 0.430; CI 0.28, 1.71)	1.70 (p-value 0.284; CI 0.65, 4.46)	1.58 (p-value 0.422; CI 0.52, 4.85)	1.05 (p-value 0.807; CI 0.69, 1.60)	1.28 (p-value 0.059; CI 0.99, 1.66)	0.60 (p-value 0.158; CI 0.29, 1.22)
Mint Cigarillo Ad Below 3 Feet	0.82 (p-value 0.621; CI 0.38, 1.79)	(Omitted)	(Omitted)	0.42 (p-value 0.789; CI 0.01, 222.81)	1.30 (p-value 0.102; CI 0.95, 1.79)	0.57 (p-value 0.222; CI 0.23, 1.40)
Any Cigarillo Price Promo	0.24 (p-value 0.151; CI 0.03, 1.68)	0.93 (p-value 0.805; CI 0.55, 1.60)	1.60 (p-value 0.374; CI 0.57, 4.49)	1.60 (p-value 0.041; CI 1.01, 2.51*)	1.34 (p-value 0.011; CI 1.07, 1.69^)	0.75 (p-value 0.519; CI 0.31, 1.80)
Menthol Cigarillo Price Promo	(Omitted)	1.01 (p-value 0.986; CI 0.30, 3.42)	(Omitted)	17.11 (p-value >0.000; CI 12.12, 24.16*)	1.40 (p-value 0.031; CI 1.03, 1.89^)	0.42 (p-value 0.063; CI 0.17, 1.05)
Mint Cigarillo Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Cigarillo Near Candy	1.10 (p-value 0.355; CI 0.90, 1.34)	0.75 (p-value 0.135; CI 0.51, 1.09)	0.58 (p-value 0.242; CI 0.23, 1.44)	1.06 (p-value 0.638; CI 0.83, 1.36)	0.88 (p-value 0.370; CI 0.67, 1.16)	1.15 (p-value 0.616; CI 0.69, 1.97)
Any Cigarillo Near Candy	1.05 (p-value 0.657; CI 0.85, 1.30)	0.80 (p-value 0.263; CI 0.55, 1.18)	0.76 (p-value 0.554; CI 0.31, 1.87)	1.08 (p-value 0.594; CI 0.82, 1.41)	0.88 (p-value 0.406; CI 0.66, 1.18)	(Omitted)
Menthol Cigarillo Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Cigarillo Near Candy	0.72 (p-value 0.566; CI 0.23, 2.22)	(Omitted)	(Omitted)	(Omitted)	0.77 (p-value 0.690; CI 0.21, 2.81)	1.22 (p-value 0.529; CI 0.66, 2.27)

*Controlled for median income, rurality, store type, and county

^Controlled for rurality, store type, and county

Coefficients in bold are significant at p<0.05.

(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.4. All Large Cigar Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income [^]	Below Poverty [^]
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Large Cigar	0.72 (p-value 0.052; CI 0.51, 1.00)	1.09 (p-value 0.701; CI 0.71, 1.65)	(Omitted)	1.60 (p-value 0.003; CI 1.18, 2.17*)	1.26 (p-value 0.059; CI 0.99, 1.60)	0.47 (p-value 0.045; CI 0.22, 0.98[^])
Menthol Large Cigars	0.03 (p-value 0.116; CI 0.01, 2.34)	1.33 (p-value 0.555; CI 0.51, 3.47)	(Omitted)	2.19 (p-value 0.064; CI 0.96, 5.01)	1.25 (p-value 0.316; CI 0.81, 1.95)	0.65 (p-value 0.479; CI 0.20, 2.12)
Mint Large Cigars	0.43 (p-value 0.264; CI 0.10, 1.89)	1.50 (p-value 0.227; CI 0.78, 2.89)	(Omitted)	1.40 (p-value 0.089; CI 0.95, 2.07)	1.36 (p-value 0.011; CI 1.07, 1.73[^])	0.47 (p-value 0.050; CI 0.22, 1.00[^])
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Large Cigar Self-service	0.29 (p-value 0.048; CI 0.09, 0.99*)	2.42 (p-value 0.168; CI 0.69, 8.46)	0.62 (p-value 0.606; CI 0.10, 3.78)	1.76 (p-value 0.001; CI 1.26, 2.45*)	1.37 (p-value 0.234; CI 0.82, 2.30)	0.57 (p-value 0.442; CI 0.14, 2.40)
Menthol Large Cigars Self-service	0.57 (p-value 0.289; CI 0.20, 1.62)	1.39 (p-value 0.331; CI 0.72, 2.68)	1.30 (p-value 0.609; CI 0.48, 3.51)	1.26 (p-value 0.231; CI 0.86, 1.84)	1.16 (p-value 0.250; CI 0.90, 1.49)	0.79 (p-value 0.504; CI 0.39, 1.59)
Mint Large Cigars Self-service	(Omitted)	0.85 (p-value 0.824; CI 0.21, 3.50)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Cigar Ad Below 3 Feet	(Omitted)	1.00 (p-value 0.998; CI 0.32, 3.11)	(Omitted)	(Omitted)	1.25 (p-value 0.157; CI 0.92, 1.69)	0.59 (p-value 0.246; CI 0.24, 1.45)
Menthol Large Cigar Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Large Cigar Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Cigar Price Promo	(Omitted)	1.62 (p-value 0.183; CI 0.80, 3.31)	1.23 (p-value 0.698; CI 0.44, 3.45)	2.03 (p-value 0.203; CI 0.68, 6.06)	1.27 (p-value 0.058; CI 0.99, 1.62)	0.70 (p-value 0.448; CI 0.28, 1.76)
Menthol Large Cigar Price Promo	0.70 (p-value 0.439; CI 0.28, 1.73)	1.67 (p-value 0.297; CI 0.64, 4.41)	1.56 (p-value 0.436; CI 0.51, 4.76)	1.05 (p-value 0.816; CI 0.69, 1.60)	1.21 (p-value 0.174; CI 0.92, 1.60)	0.71 (p-value 0.385; CI 0.33, 1.53)
Mint Large Cigar Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Cigar Near Candy	(Omitted)	1.16 (p-value 0.825; CI 0.32, 4.22)	(Omitted)	19.31 (p-value >0.000; CI 13.94, 26.75*)	1.41 (p-value 0.067; CI 0.98, 2.05)	0.44 (p-value 0.134; CI 0.15, 1.28)
Menthol Large Cigar Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Large Cigar Near	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

Candy						
<p>*Controlled for median income, rurality, store type, and county ^Controlled for rurality, store type, and county Coefficients in bold are significant at p<0.05. (Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.</p>						

Appendix Table A.5. All Pipe Tobacco Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income^	Below Poverty^
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Pipe Tobacco	0.73 (p-value 0.023; CI 0.55, 0.96*)	1.33 (p-value 0.054; CI 0.99, 1.79)	0.88 (p-value 0.707; CI 0.44, 1.74)	1.20 (p-value 0.120; CI 0.95, 1.50)	0.84 (p-value 0.113; CI 0.68, 1.04)	1.15 (p-value 0.569; CI 0.71, 1.87)
Menthol Pipe Tobacco	0.59 (p-value 0.017; CI 0.38, 0.91*)	1.53 (p-value 0.009; CI 1.11, 2.11*)	1.02 (p-value 0.955; CI 0.46, 2.30)	1.20 (p-value 0.174; CI 0.92, 1.57)	0.76 (p-value 0.125; CI 0.54, 1.08)	1.33 (p-value 0.417; CI 0.67, 2.65)
Mint Pipe Tobacco	0.52 (p-value 0.140; CI 0.21, 1.24)	1.62 (p-value 0.060; CI 0.98, 2.66)	0.32 (p-value 0.455; CI 0.02, 6.36)	1.21 (p-value 0.253; CI 0.87, 1.69)	0.84 (p-value 0.304; CI 0.59, 1.18)	0.97 (p-value 0.924; CI 0.48, 1.95)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Pipe Tobacco Self-service	0.39 (p-value 0.144; CI 0.11, 1.37)	1.94 (p-value 0.124; CI 0.83, 4.50)	0.98 (p-value 0.975; CI 0.28, 3.49)	1.36 (p-value 0.068; CI 0.98, 1.90)	0.78 (p-value 0.436; CI 0.42, 1.45)	1.69 (p-value 0.323; CI 0.60, 4.79)
Menthol Pipe Tobacco Self-service	0.60 (p-value 0.240; CI 0.26, 1.40)	1.54 (p-value 0.160; CI 0.84, 2.81)	1.10 (p-value 0.845; CI 0.43, 2.83)	1.13 (p-value 0.456; CI 0.82, 1.58)	0.71 (p-value 0.261; CI 0.39, 1.29)	1.57 (p-value 0.284; CI 0.69, 3.58)
Mint Pipe Tobacco Self-service	0.79 (p-value 0.699; CI 0.25, 2.57)	(Omitted)	0.55 (p-value 0.771; CI 0.01, 32.09)	0.32 (p-value 0.462; CI 0.02, 6.65)	1.04 (p-value 0.882; CI 0.59, 1.83)	0.30 (p-value 0.412; CI 0.02, 5.23)
Any Pipe Tobacco Ad Below 3 Feet	(Omitted)	0.82 (p-value 0.727; CI 0.27, 2.47)	(Omitted)	0.97 (p-value 0.973; CI 0.19, 4.93)	1.72 (p-value 0.360; CI 0.54, 5.51)	0.50 (p-value 0.351; CI 0.11, 2.16)
Menthol Pipe Tobacco Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	0.12 (p-value 0.273; CI 0.01, 5.42)
Mint Pipe Tobacco Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	0.12 (p-value 0.273; CI 0.01, 5.42)
Any Pipe Tobacco Price Promo	(Omitted)	1.85 (p-value 0.326; CI 0.54, 6.27)	1.17 (p-value 0.837; CI 0.27, 5.13)	2.10 (p-value 0.194; CI 0.68, 6.45)	1.07 (p-value 0.759; CI 0.68, 1.70)	1.31 (p-value 0.610; CI 0.47, 3.64)
Menthol Pipe Tobacco Price Promo	0.59 (p-value 0.389; CI 0.18, 1.94)	1.41 (p-value 0.392; CI 0.64, 3.09)	1.15 (p-value 0.782; CI 0.42, 3.12)	1.19 (p-value 0.370; CI 0.82, 1.73)	1.01 (p-value 0.955; CI 0.75, 1.36)	1.18 (p-value 0.697; CI 0.51, 2.74)

Mint Pipe Tobacco Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Pipe Tobacco Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Menthol Pipe Tobacco Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Pipe Tobacco Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.6. All Smokeless Tobacco (ST) Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income^	Below Poverty^
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any ST	0.71 (p-value 0.005; CI 0.55, 0.90*)	1.62 (p-value 0.004; CI 1.17, 2.25*)	1.50 (p-value 0.307; CI 0.69, 3.25)	1.14 (p-value 0.359; CI 0.86, 1.53)	1.35 (p-value 0.019; CI 1.05, 1.74^)	0.58 (p-value 0.077; CI 0.32, 1.06)
Menthol ST	0.86 (p-value 0.502; CI 0.55, 1.34)	1.06 (p-value 0.864; CI 0.56, 1.98)	0.88 (p-value 0.878; CI 0.18, 4.38)	1.23 (p-value 0.496; CI 0.68, 2.24)	1.04 (p-value 0.827; CI 0.73, 1.48)	0.63 (p-value 0.380; CI 0.22, 1.77)
Mint ST	0.54 (p-value 0.044; CI 0.29, 0.98*)	2.43 (p-value 0.005; CI 1.31, 4.51*)	2.38 (p-value 0.346; CI 0.39, 14.47)	1.10 (p-value 0.773; CI 0.58, 2.09)	1.97 (p-value 0.014; CI 1.15, 3.38^)	0.27 (p-value 0.041; CI 0.08, 0.95^)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any ST Self-service	(Omitted)	(Omitted)	(Omitted)	22.33 (p-value >0.000; CI 16.58, 30.08*)	1.41 (p-value 0.266; CI 0.77, 2.59)	0.53 (p-value 0.483; CI 0.09, 3.11)
Menthol ST Self-service	(Omitted)	1.19 (p-value 0.701; CI 0.49, 2.88)	(Omitted)	18.51 (p-value >0.000; CI 13.63, 25.13*)	1.23 (p-value 0.129; CI 0.94, 1.61)	0.66 (p-value 0.298; CI 0.30, 1.44)
Mint ST Self-service	(Omitted)	1.32 (p-value 0.644; CI 0.40, 4.34)	(Omitted)	17.14 (p-value >0.000; CI 12.12, 24.24*)	1.37 (p-value 0.063; CI 0.98, 1.92)	0.47 (p-value -1.46; CI 0.17, 1.30)
Any ST Ad Below 3 Feet	(Omitted)	0.98 (p-value 0.973; CI 0.32, 3.04)	(Omitted)	(Omitted)	1.24 (p-value 0.165; CI 0.91, 1.69)	0.59 (p-value 0.252; CI 0.24, 1.46)

Menthol ST Ad Below 3 Feet	(Omitted)	1.43 (p-value 0.546; CI 0.45, 4.58)	(Omitted)	18.21 (p-value >0.000; CI 13.06, 25.39*)	1.43 (p-value 0.045; CI 1.01, 2.03^)	0.43 (p-value 0.123; CI 0.15, 1.26)
Mint ST Ad Below 3 Feet	0.77 (p-value 0.663; CI 0.24, 2.49)	1.86 (p-value 0.265; CI 0.62, 5.56)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any ST Price Promo	0.42 (p-value 0.109; CI 0.15, 1.21)	1.48 (p-value 0.085; CI 0.95, 2.31)	(Omitted)	1.20 (p-value 0.274; CI 0.87, 1.65)	1.23 (p-value 0.027; CI 1.02, 1.47^)	0.56 (p-value 0.087; CI 0.29, 1.09)
Menthol ST Price Promo	0.56 (p-value 0.142; CI 0.25, 1.22)	1.35 (p-value 0.229; CI 0.83, 2.19)	0.32 (p-value 0.690; CI 0.01, 84.23)	1.42 (p-value 0.104; CI 0.93, 2.16)	1.33 (p-value 0.031; CI 1.03, 1.71^)	0.28 (p-value 0.018; CI 0.10, 0.80^)
Mint ST Price Promo	0.50 (p-value 0.154; CI 0.19, 1.30)	1.47 (p-value 0.109; CI 0.92, 2.37)	0.45 (p-value 0.729; CI 0.01, 41.05)	1.34 (p-value 0.180; CI 0.87, 2.04)	1.50 (p-value 0.002; CI 1.16, 1.95^)	0.26 (p-value 0.009; CI 0.09, 0.71^)
Any ST Near Candy	(Omitted)	0.80 (p-value 0.769; CI 0.17, 3.64)	(Omitted)	(Omitted)	0.52 (p-value 0.742; CI 0.01, 25.63)	2.40 (p-value 0.530; CI 0.16, 36.59)
Menthol ST Near Candy	(Omitted)	1.66 (p-value 0.469; CI 0.42, 6.54)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint ST Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.7. All E-Cigarette Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income^	Below Poverty^
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any E-cigarette	0.93 (p-value 0.529; CI 0.74, 1.16)	1.00 (p-value 0.989; CI 0.75, 1.35)	0.59 (p-value 0.163; CI 0.29, 1.24)	1.29 (p-value 0.168; CI 0.90, 1.85)	0.78 (p-value 0.005; CI 0.65, 0.93^)	1.61 (p-value 0.069; CI 0.96, 2.69)
Menthol E-cigarette	0.81 (p-value 0.032; CI 0.68, 0.98*)	1.23 (p-value 0.115; CI 0.95, 1.60)	0.83 (p-value 0.614; CI 0.41, 1.69)	1.21 (p-value 0.100; CI 0.96, 1.52)	0.99 (p-value 0.869; CI 0.84, 1.16)	1.07 (p-value 0.775; CI 0.69, 1.65)
Cheap Menthol E-Cigarette Sold	1.00 (p-value 0.986; CI 0.83, 1.21)	0.98 (p-value 0.912; CI 0.74, 1.31)	1.06 (p-value 0.862; CI 0.53, 2.11)	1.00 (p-value 0.970; CI 0.79, 1.27)	0.93 (p-value 0.487; CI 0.76, 1.14)	1.07 (p-value 0.782; CI 0.66, 1.74)
blu Menthol E-cigarette Sold	0.82 (p-value 0.294; CI 0.57, 1.19)	1.34 (p-value 0.249; CI 0.82, 2.19)	2.77 (p-value 0.121; CI 0.77, 10.02)	0.89 (p-value 0.737; CI 0.45, 1.76)	1.08 (p-value 0.653; CI 0.78, 1.49)	0.70 (p-value 0.499; CI 0.24, 1.99)
Mint E-cigarette	0.98 (p-value 0.838; CI 0.80, 1.20)	0.89 (p-value 0.417; CI 0.68, 1.17)	0.92 (p-value 0.833; CI 0.44, 1.94)	1.17 (p-value 0.291; CI 0.87, 1.56)	0.80 (p-value 0.010; CI 0.68, 0.95^)	1.74 (p-value 0.028; CI 1.06, 2.86^)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio

Any E-cigarette Self-service	0.22 (p-value 0.054; CI 0.05, 1.03)	1.64 (p-value 0.340; CI 0.59, 4.52)	(Omitted)	1.69 (p-value 0.006; CI 1.17, 2.45*)	1.22 (p-value 0.331; CI 0.82, 1.81)	0.72 (p-value 0.563; CI 0.23, 2.22)
Menthol E-cigarette Self-service	(Omitted)	1.22 (p-value 0.807; CI 0.25, 6.08)	(Omitted)	22.76 (p-value >0.000; CI 17.11, 30.29*)	0.98 (p-value 0.912; CI 0.66, 1.45)	1.41 (p-value 0.469; CI 0.56, 3.56)
Mint E-cigarette Self-service	(Omitted)	0.93 (p-value 0.869; CI 0.39, 2.22)	(Omitted)	(Omitted)	0.98 (p-value 0.912; CI 0.66; 1.45)	1.41 (p-value 0.469; CI 0.56, 3.56)
Any E-cigarette Ad Below 3 Feet	0.75 (p-value 0.072; CI 0.55, 1.03)	0.96 (p-value 0.885; CI 0.53, 1.74)	(Omitted)	1.63 (p-value 0.008; CI 1.13, 2.34*)	1.07 (p-value 0.643; CI 0.80, 1.45)	0.90 (p-value 0.788; CI 0.42, 1.94)
Menthol E-cigarette Ad Below 3 Feet	(Omitted)	1.53 (p-value 0.476; CI 0.47, 4.97)	(Omitted)	1.96 (p-value 0.070; CI 0.95, 4.06)	1.17 (p-value 0.520; CI 0.72, 1.92)	0.85 (p-value 0.794; CI 0.25, 2.86)
Mint E-cigarette Ad Below 3 Feet	0.09 (p-value 0.280; CI 0.01, 7.43)	1.23 (p-value 0.532; CI 0.65, 2.32)	(Omitted)	1.90 (p-value 0.173; CI 0.75, 4.79)	1.26 (p-value 0.099; CI 0.96, 1.65)	0.61 (p-value 0.206; CI 0.28, 1.31)
Any E-cigarette Price Promo	0.02 (p-value 0.034; CI 0.01, 0.74*)	1.22 (p-value 0.604; CI 0.57, 2.60)	(Omitted)	1.24 (p-value <0.001; CI 1.36, 2.81*)	1.26 (p-value 0.246; CI 0.85, 1.86)	0.78 (p-value 0.705; CI 0.21, 2.86)
Menthol E-cigarette Price Promo	0.34 (p-value 0.073; CI 0.11, 1.11)	0.93 (p-value 0.793; CI 0.54, 1.60)	(Omitted)	1.83 (p-value 0.001; CI 1.28, 2.64*)	1.19 (p-value 0.222; CI 0.90, 1.59)	0.91 (p-value 0.847; CI 0.36, 2.31)
Mint E-cigarette Price Promo	0.73 (p-value 0.393; CI 0.35, 1.51)	0.92 (p-value 0.713; CI 0.57, 1.47)	(Omitted)	1.45 (p-value 0.097; CI 0.94, 2.24)	1.21 (p-value 0.098; CI 0.97, 1.51)	0.67 (p-value 0.384; CI 0.28, 1.64)
Any E-cigarette Near Candy	1.06 (p-value 0.655; CI 0.83, 1.34)	0.71 (p-value 0.057; CI 0.49, 1.01)	0.63 (p-value 0.268; CI 0.28, 1.43)	1.18 (p-value 0.238; CI 0.90, 1.56)	0.85 (p-value 0.225; CI 0.64, 1.11)	1.44 (p-value 0.273; CI 0.70, 2.76)
Menthol E-cigarette Near Candy	0.90 (p-value 0.515; CI 0.66, 1.23)	0.67 (p-value 0.424; CI 0.25, 1.81)	0.18 (p-value 0.439; CI 0.01, 14.38)	1.38 (p-value 0.032; CI 1.03, 1.86*)	1.08 (p-value 0.664; CI 0.76, 1.52)	0.70 (p-value 0.459; CI 0.28, 1.79)
Mint E-cigarette Near Candy	1.02 (p-value 0.869; CI 0.82, 1.27)	0.81 (p-value 0.246; CI 0.57, 1.15)	0.83 (p-value 0.655; CI 0.37, 1.88)	1.13 (p-value 0.387; CI 0.86, 1.48)	0.90 (p-value 0.398; CI 0.70, 1.16)	1.25 (p-value 0.449; CI 0.70, 2.26)
any E-cigarette	1.00 (p-value 0.989; CI 0.76, 1.32)	0.83 (p-value 0.408; CI 0.54, 1.28)	0.67 (p-value 4.14; CI 0.26, 1.74)	1.20 (p-value 0.263; CI 0.87, 1.67)	0.86 (p-value 0.307; CI 0.64, 1.15)	1.33 (p-value 0.436; CI 0.65, 2.71)

*Controlled for median income, rurality, store type, and county

^Controlled for rurality, store type, and county

Coefficients in bold are significant at p<0.05.

(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.8. All Hookah/Shisha Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income [^]	Below Poverty [^]
Availability	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Hookah	0.91 (p-value 0.464; CI 0.71, 1.17)	1.35 (p-value 0.129; CI 0.92, 1.98)	2.01 (p-value 0.077; CI 0.93, 4.36)	0.86 (p-value 0.296; CI 0.64, 1.15)	0.84 (p-value 0.179; CI 0.65, 1.08)	1.50 (p-value 0.159; CI 0.85, 2.62)
Hookah Menthol	0.83 (p-value 0.663; CI 0.37, 1.88)	(Omitted)	(Omitted)	(Omitted)	1.13 (p-value 0.534; CI 0.77, 1.64)	0.88 (p-value 0.808; CI 0.31, 2.49)
Hookah Mint	1.18 (p-value 0.465; CI 0.76, 1.82)	1.60 (p-value 0.305; CI 0.65, 3.94)	1.67 (p-value 0.446; CI 0.45, 6.20)	(Omitted)	1.02 (p-value 0.897; CI 0.73, 1.43)	0.95 (p-value 0.906; CI 0.38, 2.35)
Any Shisha	0.88 (p-value 0.427; CI 0.63, 1.22)	1.54 (p-value 0.149; CI 0.86, 2.76)	1.69 (p-value 0.293; CI 0.64, 4.49)	0.89 (p-value 0.568; CI 0.61, 1.31)	0.60 (p-value 0.121; CI 0.32, 1.14)	1.93 (p-value 0.179; CI 0.74, 5.01)
Sisha Menthol	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Sisha Mint	0.97 (p-value 0.919; CI 0.50, 1.86)	2.48 (p-value 0.180; CI 0.66, 9.37)	3.04 (p-value 0.298; CI 0.37, 24.82)	0.47 (p-value 0.225; CI 0.14, 1.59)	0.63 (p-value 0.331; CI 0.24, 1.61)	1.38 (p-value 0.693; CI 0.28, 6.97)
Marketing	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio	Odds Ratio
Any Hookah Self-service	0.73 (p-value 0.307; CI 0.39, 1.34)	(Omitted)	2.16 (p-value 0.106; CI 0.85, 5.49)	0.54 (p-value 0.431; CI 0.11, 2.54)	0.89 (p-value 0.635; CI 0.54, 1.46)	1.17 (p-value 0.748; CI 0.45, 3.02)
Menthol Hookah Self-service	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Hookah Self-service	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Hookah Ad Below 3 Feet	0.56 (p-value 0.353; CI 0.17, 1.90)	(Omitted)	(Omitted)	(Omitted)	0.88 (p-value 0.925; CI 0.06, 13.57)	2.60 (p-value 0.448; CI 0.22, 30.74)
Menthol Hookah Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Hookah Ad Below 3 Feet	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Hookah Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	0.90 (p-value 0.583; CI 0.61, 1.32)
Menthol Hookah Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Hookah Price Promo	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

Any Hookah Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Menthol Hookah Near Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Hookah Candy	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.9. All Product Advertising Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income^	Below Poverty^
Self-service Yes/No	0.50 (p-value 0.028; CI 0.27, 0.93*)	1.39 (p-value 0.269; CI 0.78, 2.47)	1.40 (p-value 0.603; CI 0.40, 4.92)	1.49 (p-value 0.035; CI 1.03, 2.15*)	1.24 (p-value 0.163; CI 0.92, 1.69)	0.67 (p-value 0.403; CI 0.26, 1.72)
Any Self-service	0.38 (p-value 0.019; CI 0.17, 0.85*)	1.70 (p-value 0.0054; CI 0.99, 2.93)	1.39 (p-value 0.617; CI 0.38, 5.14)	1.44 (p-value 0.032; CI 1.03, 2.00*)	1.09 (p-value 0.563; CI 0.81, 1.48)	0.81 (p-value 0.666; CI 0.31, 2.15)
Ad Below 3 Feet Yes/No	0.81 (p-value 0.054; CI 0.66, 1.00)	1.27 (p-value 0.201; CI 0.88, 1.83)	0.86 (p-value 0.676; CI 0.43, 1.73)	1.23 (p-value 0.077; CI 0.98, 1.55)	1.18 (p-value 0.119; CI 0.96, 1.46)	0.74 (p-value 0.241; CI 0.45, 1.22)
Any Ad Below 3 Feet	0.80 (p-value 0.033; CI 0.65, 0.98*)	1.18 (p-value 0.357; CI 0.83, 1.67)	0.98 (p-value 0.946; CI 0.48, 1.98)	1.33 (p-value 0.017; CI 1.05, 1.68*)	1.21 (p-value 0.075; CI 0.98, 1.48)	0.67 (p-value 0.116; CI 0.41, 1.10)
Promo Yes/No	0.86 (p-value 0.065; CI 0.73, 1.01)	1.11 (p-value 0.379; CI 0.88, 1.40)	1.22 (p-value 0.491; CI 0.69, 2.16)	1.14 (p-value 0.213; CI 0.93, 1.39)	1.10 (p-value 0.231; CI 0.94, 1.28)	0.92 (p-value 0.688; CI 0.63, 1.36)
Any Price Promo	0.81 (p-value 0.014; CI 0.69, 0.96*)	1.30 (p-value 0.034; CI 1.02, 1.67*)	1.18 (p-value 0.536; CI 0.69, 2.02)	1.18 (p-value 0.136; CI 0.95, 1.47)	1.12 (p-value 0.066; CI 0.99, 1.27)	0.88 (p-value 0.525; CI 0.58, 1.32)
Near Candy Yes/No	1.01 (p-value 0.941; CI 0.79, 1.29)	0.88 (p-value 0.510; CI 0.59, 1.30)	0.99 (p-value 0.984; CI 0.42, 2.32)	1.08 (p-value 0.620; 0.79, 1.48)	0.87 (p-value 0.286; CI 0.67, 1.12)	1.47 (p-value 0.208; CI 0.81, 2.65)
Any Near Candy	0.97 (p-value 0.732; CI 0.81, 1.16)	1.09 (p-value 0.653; CI 0.76, 1.55)	0.90 (p-value 0.745; CI 0.46, 1.73)	1.04 (p-value 0.744; CI 0.84, 1.29)	0.94 (p-value 0.466; CI 0.80, 1.11)	1.14 (p-value 0.586; CI 0.72, 1.79)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.10. All Product Exterior Advertising Results

	Race				Wealth	
	Non-Hispanic Black*	Non-Hispanic White*	Non-Hispanic Asian*	Hispanic*	Median Income [^]	Below Poverty [^]
Any Exterior Advertisement	0.97 (p-value 0.688; CI 0.83, 1.13)	0.95 (p-value 0.678; CI 0.75, 1.21)	1.28 (p-value 0.409; CI 0.71, 2.30)	1.05 (p-value 0.610; CI 0.86, 1.28)	0.93 (p-value 0.319; CI 0.80, 1.08)	1.44 (p-value 0.069; CI 0.97, 2.12)
Any Exterior Cigarette Ad	1.03 (p-value 0.786; CI 0.86, 1.23)	0.85 (p-value 0.264; CI 0.65, 1.13)	0.71 (p-value 0.420; CI 0.30, 1.64)	1.11 (p-value 0.355; CI 0.89, 1.39)	1.02 (p-value 0.800; CI 0.87, 1.20)	1.16 (p-value 0.510; CI 0.74, 1.83)
Menthol Cigarette Exterior Ad	0.93 (p-value 0.479; CI 0.76, 1.14)	1.04 (p-value 0.800; CI 0.77, 1.41)	0.75 (p-value 0.529; CI 0.30, 1.86)	1.14 (p-value 0.316; CI 0.88, 1.48)	0.97 (p-value 0.751; CI 0.79, 1.19)	1.33 (p-value 0.321; CI 0.76, 2.33)
Any Exterior Cigarillo Ad	1.04 (p-value 0.666; CI 0.88, 1.23)	0.85 (p-value 0.278; CI 0.63, 1.14)	0.72 (p-value 0.337; CI 0.37, 1.40)	1.08 (p-value 0.508; CI 0.87, 1.33)	0.84 (p-value 0.152; CI 0.66, 1.07)	1.38 (p-value 0.167; 0.87, 2.19)
Menthol Cigarillo Exterior Ad	0.05 (p-value 0.018; CI 0.01, 0.60*)	2.46 (p-value 0.134; CI 0.76, 8.00)	2.08 (p-value 0.410; CI 0.36, 11.90)	1.43 (p-value 0.135; CI 0.90, 2.27)	0.15 (p-value 0.533; CI 0.01, 58.9)	(Omitted)
Mint Cigarillo Exterior Ad	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Exterior Cigar Ad	(Omitted)	0.34 (p-value 0.138; CI 0.08, 1.41)	(Omitted)	(Omitted)	1.29 (p-value 0.204; CI 0.87, 1.90)	1.20 (p-value 0.848; CI 0.18, 8.13)
Menthol Large Cigar Exterior Ad	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Large Cigar Exterior Ad	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Any Exterior Chew Ad	0.83 (p-value 0.417; CI 0.54, 1.29)	1.94 (p-value 0.066; CI 0.96, 3.93)	1.35 (p-value 0.549; CI 0.51, 3.56)	0.68 (p-value 0.355; CI 0.30, 1.54)	0.83 (p-value 0.350; CI 0.57, 1.22)	1.16 (p-value 0.716; CI 0.52, 2.59)
Menthol Chew Exterior Ad	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Chew Exterior Ad	0.65 (p-value 0.131; CI 0.37, 1.14)	(Omitted)	(Omitted)	0.61 (p-value 0.568; CI 0.11, 3.38)	0.91 (p-value 0.753; CI 0.51, 1.63)	1.02 (p-value 0.968; CI 0.34, 3.04)
Any Exterior E-Cig Ad	1.09 (p-value 0.436; CI 0.88, 1.35)	0.85 (p-value 0.397; CI 0.58, 1.24)	0.78 (p-value 0.535; CI 0.35, 1.72)	0.98 (p-value 0.900; CI 0.73, 1.32)	0.94 (p-value 0.627; CI 0.72, 1.22)	1.43 (p-value 0.238; CI 0.79, 2.59)
Menthol E-cig Exterior Ad	1.02 (p-value 0.879; CI 0.78, 1.34)	1.02 (p-value 0.937; CI 0.59, 1.78)	1.05 (p-value 0.922; CI 0.40, 2.75)	0.95 (p-value 0.770; CI 0.67, 1.35)	1.06 (p-value 0.569; CI 0.84, 1.38)	1.09 (p-value 0.798; CI 0.55, 2.18)
Mint E-cig Exterior Ad	1.02 (p-value 0.878; CI 0.71, 1.48)	1.55 (p-value 0.178; CI 0.82, 2.91)	0.99 (p-value 0.986; CI 0.27, 3.58)	0.76 (p-value 0.264; CI 0.48, 1.22)	1.10 (p-value 0.613; CI 0.77, 1.56)	0.93 (p-value 0.872; CI 0.36, 2.35)
Any Exterior Hookah Ad	0.81 (p-value 0.496; CI 0.45, 1.48)	1.27 (p-value 0.592; CI 0.53, 3.05)	1.17 (p-value 0.787; CI 0.37, 3.68)	1.14 (p-value 0.640; CI 0.66, 1.95)	(Omitted)	7.58 (p-value 0.115; CI 0.61, 93.8)

Menthol Hookah Exterior Ad	0.05 (p-value 0.016; CI 0.01, 0.57*)	2.13 (p-value 0.149; CI 0.76, 5.97)	1.89 (p-value 0.313; CI 0.55, 6.55)	1.25 (p-value 0.394; CI 0.75, 2.07)	0.37 (p-value 0.608; CI 0.01, 16.54)	(Omitted)
Mint Hookah Exterior Ad	0.14 (p-value 0.000; CI 0.09, 0.23*)	9.13 (p-value 0.000; CI 3.59, 23.20*)	15.76 (p-value 0.000; CI 3.95, 62.81*)	0.36 (p-value 0.842; CI 0.01, 8295.18)	(Omitted)	(Omitted)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

Appendix Table A.11. Store Percent by Flavor Type Results

	Race				Wealth	
	Non-Hispanic Black Odds Ratio*	Non-Hispanic White Odds Ratio*	Non-Hispanic Asian Odds Ratio*	Hispanic Odds Ratio*	Median Income Odds Ratio^	Below Poverty Odds Ratio^
% Store Menthol	0.92 (p-value 0.305; CI 0.78, 1.08)	1.15 (p-value 0.262; CI 0.90, 1.46)	0.77 (p-value 0.426; CI 0.40, 1.47)	1.09 (p-value 0.439; CI 0.87, 1.37)	1.18 (p-value 0.053; CI 1.00, 1.39)	0.72 (p-value 0.168; CI 0.46, 1.15)
% Store Mint	0.95 (p-value 0.557; CI 0.79, 1.13)	1.21 (p-value 0.090; CI 0.97, 1.50)	0.74 (p-value 0.368; CI 0.39, 1.42)	0.98 (p-value 0.900; CI 0.77, 1.26)	1.11 (p-value 0.271; CI 0.92, 1.33)	0.63 (p-value 0.047; CI 0.40, 0.99^)
% Non-Flavored	0.94 (p-value 0.469; CI 0.78, 1.12)	1.36 (p-value 0.003; CI 1.11, 1.67*)	1.17 (p-value 0.629; CI 0.62, 2.20)	0.84 (p-value 0.106; CI 0.68, 1.04)	1.02 (p-value 0.831; CI 0.84, 1.23)	0.64 (p-value 0.030; CI 0.43, 0.96^)

*Controlled for median income, rurality, store type, and county
^Controlled for rurality, store type, and county
Coefficients in bold are significant at p<0.05.
(Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.

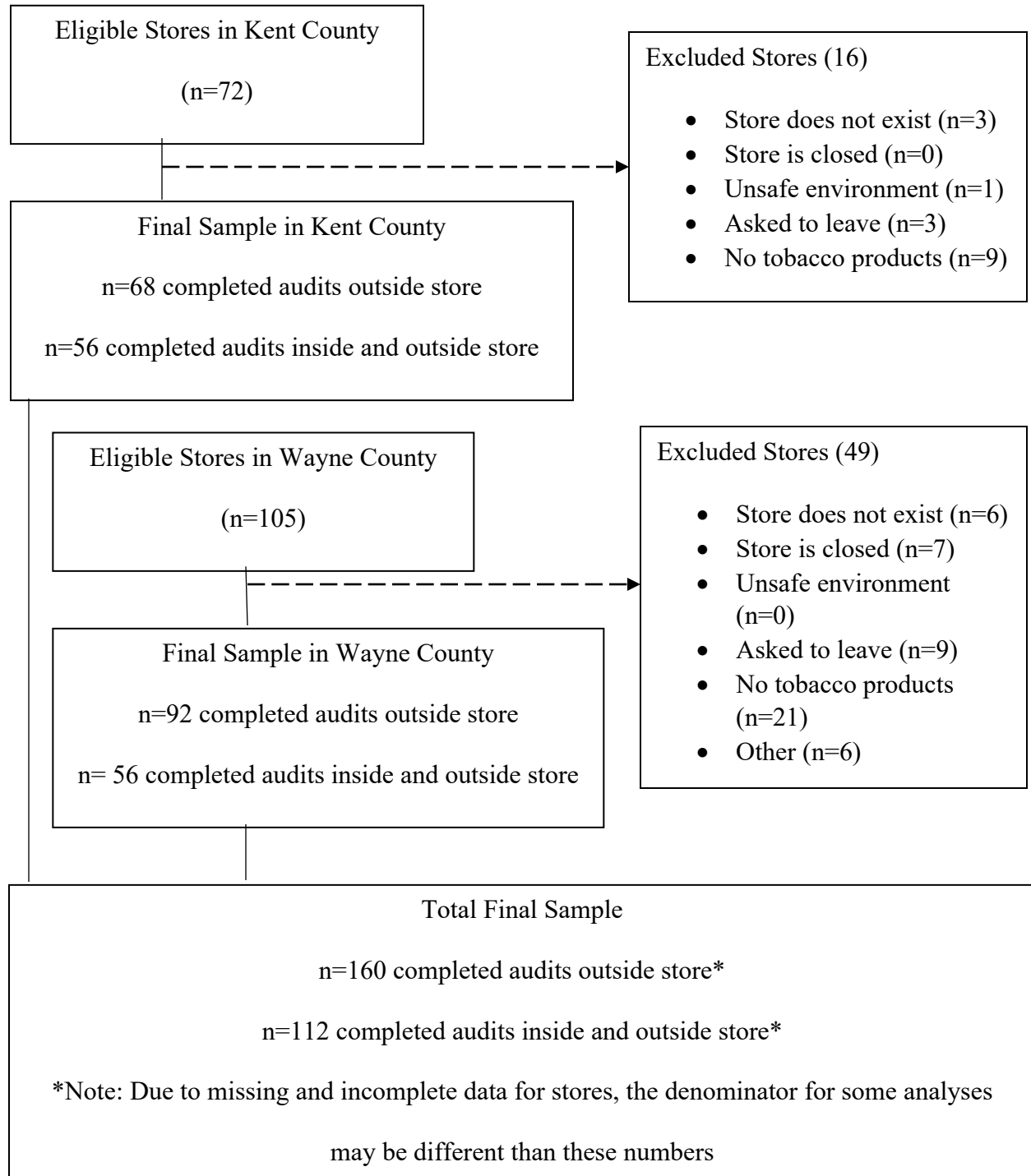
Appendix Table A.12. Self-service Across Products

	Race				Wealth	
	Non-Hispanic Black Odds Ratio*	Non-Hispanic White Odds Ratio*	Non-Hispanic Asian Odds Ratio*	Hispanic Odds Ratio*	Median Income Odds Ratio^	Below Poverty Odds Ratio^
Any Cigarette Self-service	(Omitted)	3.40 (p-value 0.363; CI 0.24, 47.38)	1.16 (p-value 0.918; CI 0.07, 19.57)	2.73 (p-value 0.071; CI 0.92, 8.12)	1.40 (p-value 0.443; CI 0.59, 3.28)	0.88 (p-value 0.800; CI 0.33, 2.36)
Menthol Cigarette Self-service	0.26 (p-value 0.180; CI 0.04, 1.87)	1.61 (p-value 0.381; CI 0.56, 4.65)	0.92 (p-value 0.899; CI 0.24, 3.55)	1.53 (p-value 0.018; CI 1.08, 2.19*)	1.19 (p-value 0.370; CI 0.82, 1.72)	0.46 (p-value 0.229; CI 0.13, 1.64)
Any Cigarillo Self-service	0.21 (p-value 0.018; CI 0.57, 1.56*)	1.23 (p-value 0.484; CI 0.69, 2.17)	0.99 (p-value 0.983; CI 0.29, 3.39)	1.66 (p-value 0.001; CI 1.22, 2.25*)	1.20 (p-value 0.196; CI 0.91, 1.57)	0.94 (p-value 0.89; CI 0.41, 2.16)
Menthol Cigarillo Self-service	0.27 (p-value 0.186; CI 0.04, 1.87)	1.58 (p-value 0.392; CI 0.55, 4.55)	0.91 (p-value 0.892; CI 0.24, 3.44)	1.51 (p-value 0.019; CI 1.10, 2.14*)	1.08 (p-value 0.690; CI 0.74, 1.56)	1.11 (p-value 0.820; CI 0.45, 2.77)

Mint Cigarillo Self-service	0.06 (p-value 0.007; CI 0.01, 0.48*)	1.67 (p-value 0.220; CI 0.74, 3.76)	1.31 (p-value 0.617; CI 0.46, 3.71)	1.30 (p-value 0.211; CI 0.86, 1.96)	0.41 (p-value 0.571; CI 0.02, 8.79)	(Omitted)
Any Large Cigar Self-service	0.29 (p-value 0.048; CI 0.09, 0.99*)	2.42 (p-value 0.168; CI 0.69, 8.46)	0.62 (p-value 0.606; CI 0.10, 3.78)	1.76 (p-value 0.001; CI 1.26, 2.45*)	1.37 (p-value 0.234; CI 0.82, 2.30)	0.57 (p-value 0.442; CI 0.14, 2.40)
Menthol Large Cigars Self-service	0.57 (p-value 0.289; CI 0.20, 1.62)	1.39 (p-value 0.331; CI 0.72, 2.68)	1.30 (p-value 0.609; CI 0.48, 3.51)	1.26 (p-value 0.231; CI 0.86, 1.84)	1.16 (p-value 0.250; CI 0.90, 1.49)	0.79 (p-value 0.504; CI 0.39, 1.59)
Mint Large Cigars Self-service	(Omitted)	0.85 (p-value 0.824; CI 0.21, 3.50)	(Omitted)	10.30 (p-value >0.000; CI 7.08, 15.00*)	(Omitted)	(Omitted)
Any Pipe Tobacco Self-service	0.39 (p-value 0.144; CI 0.11, 1.37)	1.94 (p-value 0.124; CI 0.83, 4.50)	0.98 (p-value 0.975; CI 0.28, 3.49)	1.36 (p-value 0.068; CI 0.98, 1.90)	0.78 (p-value 0.436; CI 0.42, 1.45)	1.69 (p-value 0.323; CI 0.60, 4.79)
Menthol Pipe Tobacco Self-service	0.60 (p-value 0.240; CI 0.26, 1.40)	1.54 (p-value 0.160; CI 0.84, 2.81)	1.10 (p-value 0.845; CI 0.43, 2.83)	1.13 (p-value 0.456; CI 0.82, 1.58)	0.71 (p-value 0.261; CI 0.39, 1.29)	1.57 (p-value 0.284; CI 0.69, 3.58)
Mint Pipe Tobacco Self-service	0.79 (p-value 0.699; CI 0.25, 2.57)	(Omitted)	0.55 (p-value 0.771; CI 0.01, 32.09)	0.32 (p-value 0.462; CI 0.02, 6.65)	1.04 (p-value 0.882; CI 0.59, 1.83)	0.30 (p-value 0.412; CI 0.02, 5.23)
Any ST Self-service	(Omitted)	(Omitted)	(Omitted)	22.33 (p-value >0.000; CI 16.58, 30.08*)	1.41 (p-value 0.266; CI 0.77, 2.59)	0.53 (p-value 0.483; CI 0.09, 3.11)
Menthol ST Self-service	(Omitted)	1.19 (p-value 0.701; CI 0.49, 2.88)	(Omitted)	18.51 (p-value >0.000; CI 13.63, 25.13*)	1.23 (p-value 0.129; CI 0.94, 1.61)	0.66 (p-value 0.298; CI 0.30, 1.44)
Mint ST Self-service	(Omitted)	1.32 (p-value 0.644; CI 0.40, 4.34)	(Omitted)	17.14 (p-value >0.000; CI 12.12, 24.24*)	1.37 (p-value 0.063; CI 0.98, 1.92)	0.47 (p-value -1.46; CI 0.17, 1.30)
Any E-cigarette Self-service	0.22 (p-value 0.054; CI 0.05, 1.03)	1.64 (p-value 0.340; CI 0.59, 4.52)	(Omitted)	1.69 (p-value 0.006; CI 1.17, 2.45*)	1.22 (p-value 0.331; CI 0.82, 1.81)	0.72 (p-value 0.563; CI 0.23, 2.22)
Menthol E-cigarette Self-service	(Omitted)	1.22 (p-value 0.807; CI 0.25, 6.08)	(Omitted)	22.76 (p-value 0.000; CI 17.11, 30.29*)	0.98 (p-value 0.912; CI 0.66, 1.45)	1.41 (p-value 0.469; CI 0.56, 3.56)
Mint E-cigarette Self-service	(Omitted)	0.93 (p-value 0.869; CI 0.39, 2.22)	(Omitted)	(Omitted)	0.98 (p-value 0.912; CI 0.66; 1.45)	1.41 (p-value 0.469; CI 0.56, 3.56)
Any Hookah Self-service	0.73 (p-value 0.307; CI 0.39, 1.34)	(Omitted)	2.16 (p-value 0.106; CI 0.85, 5.49)	0.54 (p-value 0.431; CI 0.11, 2.54)	0.89 (p-value 0.635; CI 0.54, 1.46)	1.17 (p-value 0.748; CI 0.45, 3.02)
Menthol Hookah Self-service	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)
Mint Hookah Self-service	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)	(Omitted)

Self-service Yes/No	0.50 (p-value 0.028; CI 0.27, 0.93*)	1.39 (p-value 0.269; CI 0.78, 2.47)	1.40 (p-value 0.603; CI 0.40, 4.92)	1.49 (p-value 0.035; CI 1.03, 2.15*)	1.24 (p-value 0.163; CI 0.92, 1.69)	0.67 (p-value 0.403; CI 0.26, 1.72)
Any Self- service	0.38 (p-value 0.019; CI 0.17, 0.85*)	1.65 (p-value 0.111; CI 0.89, 3.04)	1.39 (p-value 0.617; CI 0.38, 5.14)	1.50 (p-value 0.001; CI 1.19, 1.90*)	1.09 (p-value 0.563; CI 0.81, 1.48)	0.98 (p-value 0.955; CI 0.41, 2.33)
<p>*Controlled for median income, rurality, store type, and county ^Controlled for rurality, store type, and county Coefficients in bold are significant at p<0.05. (Omitted) values predicted success/failure perfectly or had insufficient data to run the analysis.</p>						

Appendix Figure A.1. Sampling Diagram



2.10 Chapter 2 Appendix B

Appendix Figure B.1. Modified STARS Data Tool

Modified Standardized Tobacco Assessment for Retail Settings (STARS)

1. Date of visit: _____ Start Time: _____ End Time: _____
2. Coder Name/ID: _____
3. Store Name/ID: Store name matches assigned name?
 Yes No (give correct name): _____
4. Store Address: Actual address matches assigned address?
 Yes No (give correct address): _____

5a. Can you survey this store? [If yes, continue, if not, STOP]

- Yes, I can
- No, store does not exist
- No, store is closed
- No, under 18 not allowed to enter
- No, membership or fee required
- No, environment unsafe for me
- No, asked to leave
- Other (specify): _____

b. Exterior sign stating policy regarding minors entering the store? No minimum age posted
 Yes, must be _____ or older to enter

6. Choose one best store type:

- Convenience store with gas (e.g., Exxon, Shell)
- Convenience store without gas (e.g., 7-Eleven)
- Drug store or pharmacy (e.g., Walgreens, Rite Aid)
- Beer, wine, liquor store
- Grocery store (e.g., deli, small grocer, Kroger)
- Mass merchandiser (e.g., Walmart, Meijer, Costco)
- Discount store (e.g., Dollar General, Family Dollar)
- Tobacco shop (e.g., Wild Bill's, cigar shops, hookah bars)
- Vape shop/head shop with vaping products
- Other store type not listed (e.g., donut shop, bait & tackle)
Specify: _____

EXTERIOR

7. Are any tobacco products advertised anywhere outside the store? These are ads on windows/doors facing out, building, sidewalk, gas pumps or elsewhere.

	Non-flavored (tobacco flavor)	Menthol	Mint, wintergreen, "iced"	Other flavors
a. Cigarettes	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No		
b. Cigarillos/little cigars/blunts	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Large/traditional cigars	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. Chew, snuff, dip, or snus	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. E-cigarettes	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
f. Hookah	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

INTERIOR

8. Are any tobacco products sold here (i.e., cigarettes, cigars, cigarillos/little cigars, chew, moist or dry snuff, dip, snus, or e-cigarettes)?


- Yes, and visible to customers
- Yes, but not visible to customers
- No [STOP]

9. Does the store have a pharmacy counter? Yes No


10. Does the store sell...

- a. Alcoholic beverages? Yes No
- b. Cannabis / Marijuana? Yes No
In e-juices/cartridges for vape products?
 Yes, CBD Yes, THC No
- c. Whipped cream chargers or dispensers (used for whippets)?
 Yes No
- d. Other psychoactive substances (e.g., kratom, K2 "spice", synthetic cannabinoids such as "herbal incense" or "Scooby Snax", salvia)?
 Yes No

11. WIC and/or SNAP (i.e., food stamps, EBT) accepted here?








Yes, WIC



Yes, SNAP

No

FIELD NOTES
Extra space for comments

PRICES	12. Cheapest Non-Flavored Cigarette 	13. Cheapest Menthol Cigarette 	14. Newport Menthol Cigarette 	15. Cheapest Menthol Disposable E-Cigarette 	16. Blu Disposable E-cigarette (Menthol) 
a. Sold here? (if no SKIP other rows)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Enter single pack/item price:	\$_____.	\$_____.	\$_____.	\$_____.	\$_____.
c. Brand	(e.g. Pall Mall Red): _____	(e.g. L&M Menthol): _____	Newport (regular hard pack)	(e.g. ECO Menthol): _____	Blu Menthol
c. Sales tax included?	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. How was the price obtained?	<input type="checkbox"/> Cashier provided price <input type="checkbox"/> Advertised price <input type="checkbox"/> Price unavailable	<input type="checkbox"/> Cashier provided price <input type="checkbox"/> Advertised price <input type="checkbox"/> Price unavailable	<input type="checkbox"/> Cashier provided price <input type="checkbox"/> Advertised price <input type="checkbox"/> Price unavailable	<input type="checkbox"/> Cashier provided price <input type="checkbox"/> Advertised price <input type="checkbox"/> Price unavailable	<input type="checkbox"/> Cashier provided price <input type="checkbox"/> Advertised price <input type="checkbox"/> Price unavailable

17. OTHER PRODUCTS SOLD	Non-flavored (tobacco flavor)	Menthol	Mint, "iced", wintergreen,	Other flavors
a. Cigarillos/little cigars/blunts	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
b. Large/traditional cigars	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
c. Pipe or roll your own tobacco	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
d. Chew, snuff, dip, or snus	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
e. E-cigarettes	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
f. Hookah pipes/water pipes	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No
g. Shisha (hookah tobacco)	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No

18. Are any cigarettes with menthol capsules in the filter sold here? (e.g. Camel Crush, Marlboro NXT)?

Yes No

19. Are any cigarillos, little cigars, or blunts advertised for less than \$1

Yes No

20. Single cigarettes or little cigars sold here?

Yes (what kind?): _____ No

FIELD NOTES

Extra space for comments

PLACEMENT AND PROMOTIONS	21. Self-service display?	22. Product within 12 inches of toys, candy, gum, slushy/soda machines, or ice cream?	23. Product ad within 3 feet of floor?	24. Any price promotions?
a. Cigarettes	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> No
b. Cigarillos/little cigars/blunts	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No
c. Large/traditional cigars	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No
d. Pipe or roll your own tobacco	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No
e. Chew, snuff, dip, or snus	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No
f. E-cigarettes	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No
g. Hookah	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No	<input type="checkbox"/> Yes- Non-flavored <input type="checkbox"/> Yes- Menthol <input type="checkbox"/> Yes- Other mint <input type="checkbox"/> Yes- Other flavors <input type="checkbox"/> No

TOBACCO PRODUCT INVENTORY

25. What percentage of store inventory is represented by:	None	Less than 10%	11-25%	26-50%	51-75%	76-100%
a. Menthol products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Mint or wintergreen products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Other-flavored products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Non-flavored products	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CIGARETTES



12. Answer these questions about cigarettes.

a. Any cigarettes sold here?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
b. Menthol cigarettes sold here?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
c. Any cigarettes (menthol or non-menthol) within 12 inches of toys, candy, gum, slushy/soda machines, or ice cream?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
d. Cigarette ad (menthol or non-menthol) within 3 feet of the floor?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
e. Any cigarette price promotions?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
f. Any menthol cigarette price promotions?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No




OTHER PRODUCTS

	13. Cigarillos/little cigars	14. Large cigars	15. Chew, moist/dry snuff, dip, or snus	16. E-cigarettes
a. Sold here?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
b. Flavored products?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
c. Singles sold here?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No			
d. Advertise d for less than \$1?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No			
e. Product within 12 inches of toys, candy, gum, slushy/soda machines, or ice cream?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
f. Product ad within 3 feet of floor?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
g. Self-service display?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No		<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
h. Any price promotions?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No		<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
i. Cross-product promotion with cigarettes?			<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No

17. WIC and/or SNAP (i.e., food stamps, EBT) accepted here?


- a.  ₁ Yes ₀ No
- b.  ₁ Yes ₀ No

PRICES

	18. Cheapest cigarette pack 	19. Newport menthol  (regular hard pack)	20. Blu disposable e-cigarette  (menthol)
a. Sold here?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No <small>[if cigarettes not sold here, skip to Q.20]</small>	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
b. Enter single pack/item price:	\$ ____ . ____	\$ ____ . ____	\$ ____ . ____
c. Sales tax included?	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No	<input type="checkbox"/> ₁ Yes <input type="checkbox"/> ₀ No
d. How was the price obtained?	<input type="checkbox"/> ₁ Cashier provided price <input type="checkbox"/> ₂ Advertised price <input type="checkbox"/> ₀ Unable to determine (e.g. only cartons sold)	<input type="checkbox"/> ₁ Cashier provided price <input type="checkbox"/> ₂ Advertised price <input type="checkbox"/> ₀ Sold here but price unavailable	<input type="checkbox"/> ₁ Cashier provided price <input type="checkbox"/> ₂ Advertised price <input type="checkbox"/> ₀ Sold here but price unavailable

2

Appendix Figure B.3. vSTARS Data Tool



Standardized Tobacco Assessment for Retail Settings: Vape Shops (vSTARS)
Beta Version 08/04/16

Start time: _____
End time: _____

vSTARS and its accompanying Training Manual are available for free at www.countertobacco.org/STARS

1. Date of visit: _____ 2. Store ID: _____ 3. Coder ID: _____

4. Store Name: Does the actual store name match the assigned store name?
 Yes
 No – Enter correct name: _____

5. Store Location: Does the actual store address match the assigned address?
 Yes
 No – Enter correct address: _____

6. Can you survey this store? (If not, then select an option below and STOP)
 Yes, I can
 No, store does not exist
 No, store is closed
 No, membership or fee required to enter
 No, environment unsafe for me
 No, asked to leave before completing the survey
 Other (specify): _____

7. Does this store sell vaping products?
 Yes (Continue to question #8)
 No (Discontinue this survey)

STORE DEMOGRAPHICS

8. Is this store best categorized as a...
 Vape shop
 Vape kiosk
 Head shop with vaping products
 Convenience store; pharmacy; beer/wine/liquor store; grocery store/supermarket; mass merchandiser/discount store --> use STARS
 Other: _____

9. Exterior sign stating policy regarding minors entering the store?
 Minimum age must be 18 or older to enter
 Minimum age must be 19 or older to enter
 Minimum age must be 21 or older to enter
 No minimum age posted to enter

10. Does the store sell...
a. Alcoholic beverages?
 Yes
 No
b. Cannabis / Marijuana?
 Yes
 No
c. Whipped cream chargers or dispensers (used for whippets)?
 Yes
 No
d. Other psychoactive substances (e.g., kratom, K2 "spice", synthetic cannabinoids such as "herbal incense" or "Scooby Snax", salvia)?
 Yes
 No

TYPES OF PRODUCTS SOLD

11. Tobacco devices or products sold:

a. Cigarettes?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Cigarillos/little cigars?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. Large Cigars?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
d. Pipe or roll your own tobacco?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. Smokeless tobacco products?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
f. Hookah pipes / Water pipes?	<input type="checkbox"/> Yes	<input type="checkbox"/> No
g. Shisha?	<input type="checkbox"/> Yes	<input type="checkbox"/> No

12. Electronic devices sold:

- a. Closed systems (cig-a-likes, e-cigarettes, or e-hookah that either use cartridges or do not have a refillable tank)?
 - ₁ Yes
 - ₀ No
- b. Vape pens/eGos/vape sticks, all with a tank to fill with e-juice?
 - ₁ Yes
 - ₀ No
- c. Mods/RBAs/RDAs?
 - ₁ Yes
 - ₀ No
- d. Herbal/dry-chamber vaporizers, designed for loose-leaves?
 - ₁ Yes
 - ₀ No

13. E-liquids/juices

a. Are e-liquids/juices sold?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No (check N/A for #13B – #14)
b. Candy/fruit flavored?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
c. Flavor of alcoholic drinks?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
d. Menthol/mint flavored?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
e. Nicotine-free?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
f. Contains THC?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
g. Contains CBD?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
h. Contains caffeine?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
i. Displayed in self-service display?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A

14. If e-liquids/juices are sold, does the store have a menu for them?

- ₁ Yes – booklet, pamphlet, or menu board on wall/counter
- ₀ No
- ₉ N/A – not sold

15. Cartridges

a. Are cartridges sold?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No (check N/A for #15b-i)
b. Candy/fruit flavored?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
c. Flavor of alcoholic drinks?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
d. Menthol/mint flavored?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
e. Nicotine-free?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
f. Contains THC?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
g. Contains CBD?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
h. Contains caffeine?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A
i. In self-service display?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No <input type="checkbox"/> ₉ N/A

16. Price promotions, including clearance, on e-liquids or devices?

- ₁ Yes
- ₀ No

17. Can customers sample products while inside the store/kiosk...

- a. If they bring their own device
 - ₁ Yes
 - ₀ No
- b. Using a device provided by the store
 - ₁ Yes
 - ₀ No

MESSAGING

18. One or more sign(s) posted inside the store/kiosk that...

a. Suggest vaping is safer than cigarettes (including customer testimonials)?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
b. Promote vaping as a way to quit smoking cigarettes (including customer testimonials)?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
c. Promote vaping as a cheaper alternative to conventional cigarettes?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
d. Promote vaping in places where smoking is not allowed?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
e. Promote a customer loyalty program?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
f. Are directed towards veterans or the military population?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
g. Are directed towards college students?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No
h. Display graphic health warnings?	<input type="checkbox"/> ₁ Yes	<input type="checkbox"/> ₀ No

19. Signs stating that vaping is allowed in the store/kiosk?

- ₁ Yes, vaping is allowed
- ₀ No, vaping is not allowed
- ₉ N/A, there are no signs

20. Anyone vaping while you completed this audit (including store staff)?

- ₁ Yes
- ₀ No

21. Branded marketing materials for vaping products placed in the interior of the store?

- ₁ Yes
- ₀ No

22. Branded marketing materials for vaping products placed on the exterior of the store, or on store property?

- ₁ Yes
- ₀ No

23. Ask clerk at the end of the survey:

- a. "Can store staff make e-liquids (mix propylene glycol, and/or vegetable glycerin, flavors, and/or nicotine) on-site?"
 - ₁ Yes
 - ₀ No
 - ₉ Refused to answer
- b. "Does the store allow customers/staff to mix e-liquids on-site?"
 - ₁ Yes
 - ₀ No
 - ₉ Refused to answer

FIELD NOTES

Appendix Figure B.4. fSTARS Data Tool

Standardized Tobacco Assessment for Retail Settings: Flavored Tobacco (fSTARS)



Version 2.0 fSTARS and its accompanying Training Guide are available for free at www.countertobacco.org/fSTARS

YOUR NAME _____
 STORE NAME _____
 ADDRESS _____
 CITY, STATE _____ ZIP _____
 DATE _____ START TIME _____ END TIME _____

SURVEY

1. Can you visit the store?

- Yes [Continue]
- No, store does not exist [Skip to Q20a]
- No, store closed [Continue with Q2-Q5, then skip to Q20a]
- No, under 18 not allowed [Continue with Q2-Q5, then skip to Q20a]
- No, members only [Continue with Q2-Q5, then skip to Q20a]
- No, unsafe [Skip to Q20a]
- No, other reason not listed [Continue with Q2-Q5, then skip to Q20a]

2. Does the actual store name match the assigned store name?

- Yes [Continue]
- No – Enter correct name: _____

3. Does the actual store address match the assigned store address?

- Yes [Continue]
- No – Enter correct address: _____

4. Choose one best store type:

- Convenience store with gas
- Convenience store without gas
- Drug store or pharmacy
- Beer, wine, liquor store
- Grocery store
- Mass merchandiser
- Tobacco shop
- Vape shop
- Other store type not listed

EXTERIOR

5. Are any tobacco products advertised anywhere outside the store? These are ads on windows/doors facing out, building, sidewalk, gas pumps or elsewhere.

- Yes [Continue]
- No [Skip to Q6a]

If yes, please indicate which of the following products are ADVERTISED anywhere outside the store:

a. Cigarettes – Non-menthol	<input type="checkbox"/> Yes	<input type="checkbox"/> No
b. Cigarettes – menthol	<input type="checkbox"/> Yes	<input type="checkbox"/> No
c. Cigarillos/little cigars/blunts	<input type="checkbox"/> Yes	<input type="checkbox"/> No [Skip to Q5f]
d. FLAVORED cigarillos/little cigars/blunts (including mint, menthol, or wintergreen)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
e. NON-FLAVORED cigarillos/little cigars/blunts	<input type="checkbox"/> Yes	<input type="checkbox"/> No
f. Traditional cigars	<input type="checkbox"/> Yes	<input type="checkbox"/> No [Skip to Q5i]



- | | | |
|---|------------------------------|---|
| g. FLAVORED traditional cigars (including mint, menthol, or wintergreen) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| h. NON-FLAVORED traditional cigars | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| i. Chew, snuff, dip, or snus? | <input type="checkbox"/> Yes | <input type="checkbox"/> No [Skip to Q5f] |
| j. FLAVORED chew, snuff, dip, or snus (including mint, menthol, or wintergreen) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| k. NON-FLAVORED chew, snuff, dip, or snus | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| l. E-Cigarettes | <input type="checkbox"/> Yes | <input type="checkbox"/> No [Skip to Q5o] |
| m. FLAVORED e-cigarettes (including mint, menthol, or wintergreen) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| n. NON-FLAVORED e-cigarettes (tobacco flavor only) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| o. Hookah | <input type="checkbox"/> Yes | <input type="checkbox"/> No [Skip to Q6a] |
| p. FLAVORED hookah (including mint, menthol, or wintergreen) | <input type="checkbox"/> Yes | <input type="checkbox"/> No |
| q. NON-FLAVORED hookah | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

INTERIOR

6a. Is WIC accepted here?

- Yes [Continue]
- No [Continue]
- Unsure [Continue]

6b. Is SNAP accepted here?

- Yes [Continue]
- No [Continue]
- Unsure [Continue]

7. Are alcoholic beverages sold here?

- Yes [Continue]
- No [Continue]

8. Is a pharmacy counter present?

- Yes [Continue]
- No [Continue]

9. Is tobacco sold here?

- Yes [Continue]
- No [Skip to Q20a]

10. Are there indications that mobile tobacco coupons are accepted here?

- Yes [Continue]
- No [Continue]

11. Are ANY tobacco products placed within 12" of youth products?

- Yes [Continue]
- No [Continue]

12. Are ANY tobacco products advertised within 3 feet of the floor?

- Yes [Continue]
- No [Continue]

CIGARETTES

13. Answer these questions about CIGARETTES:

- | | | |
|--|------------------------------|---|
| a. Are any cigarettes SOLD here? | <input type="checkbox"/> Yes | <input type="checkbox"/> No [Skip to 14a] |
| b. Are any NON-MENTHOL cigarettes SOLD here? | <input type="checkbox"/> Yes | <input type="checkbox"/> No [Skip to 13e] |
| c. Enter CHEAPEST advertised price of a single pack of non-menthol cigarettes: | \$ ____ . ____ ____ | |

- d. Enter BRAND information for the cheapest single pack of non-menthol cigarettes (e.g. Pall Mall Red): _____
- e. Are MENTHOL cigarettes SOLD here? Yes No [Skip to 13k]
- f. Enter CHEAPEST advertised price of a single pack of menthol cigarettes: \$ _____
- g. Enter BRAND information for the cheapest single pack of menthol cigarettes (e.g. Traffic Menthol Green, L&M Menthol, Pall Mall Menthol, etc.): _____
- h. Are Newport Menthol cigarette single packs (regular hard pack) sold here? Yes No [Skip to 13j]
- i. Enter the advertised price of Newport Menthol cigarette single pack (regular hard pack): \$ _____
- j. Are any cigarettes with menthol capsules in the filter sold here? (e.g. Camel Crush, Marlboro NXT)? Yes No
- k. Are there ANY cigarette price promotions? Yes No [Skip to 14a]
- l. Are there any NON-MENTHOL cigarette price promotions? Yes No
- m. Are there any MENTHOL cigarette price promotions? Yes No

CIGARILLOS/LITTLE CIGARS/BLUNTS

14. Answer these questions about CIGARILLOS/LITTLE CIGARS/BLUNTS:

- a. Are any cigarillos, little cigars, or blunts SOLD here? Yes No [Skip to 15a]
- b. Are FLAVORED cigarillos, little cigars, or blunts SOLD here? Yes No [Skip to 14e]
- c. Are cigarillos, little cigars, or blunts flavored with MINT, MENTHOL, or WINTERGREEN sold here? Yes No
- d. Are cigarillos, little cigars, or blunts with flavors OTHER THAN mint, menthol, or wintergreen sold here? Yes No
- e. Are NON-FLAVORED cigarillos, little cigars, or blunts sold here? Yes No
- f. Are there ANY cigarillos, little cigars, or blunts price promotions? Yes No [Skip to 14j]
- g. Any price promotions for cigarillos, little cigars, or blunts flavored with mint, menthol, or wintergreen? Yes No
- h. Any price promotions for cigarillos, little cigars, or blunts with flavors OTHER THAN mint, menthol, or wintergreen? Yes No
- i. Any price promotions for NON-FLAVORED cigarillos, cigars, or blunts? Yes No
- j. Are any cigarillos, little cigars, or blunts with AMBIGUOUS flavor descriptors sold here? (e.g., Black and Mild "Jazz," Garcia y Vega "Blue," Swisher Sweets "Island Madness") Yes No
- k. If yes, enter flavor name (include brand name E.g., White Owl "Tropical Twist") _____
- l. Are any SINGLE cigarillos, little cigars, or blunts sold here? Yes No
- m. Are any cigarillos, little cigars, or blunts advertised for less than \$1 Yes No
- n. Are any cigarillos, little cigars, or blunts in self-service displays? Yes No

TRADITIONAL CIGARS

15. Answer these questions about TRADITIONAL CIGARS:

- a. Are traditional cigars SOLD here? Yes No [Skip to 16a]
- b. Are traditional cigars flavored with MINT, MENTHOL, or WINTERGREEN sold here? Yes No
- c. Are traditional cigars with flavors OTHER THAN mint, menthol, or wintergreen sold here? Yes No



- d. Are NON-FLAVORED traditional cigars sold here? Yes No
- e. Are any cigarillos, little cigars, or blunts in self-service displays? Yes No

CHEW/SNUFF/DIP/SNUS

16. Answer these questions about CHEW/SNUFF/DIP/SNUS:

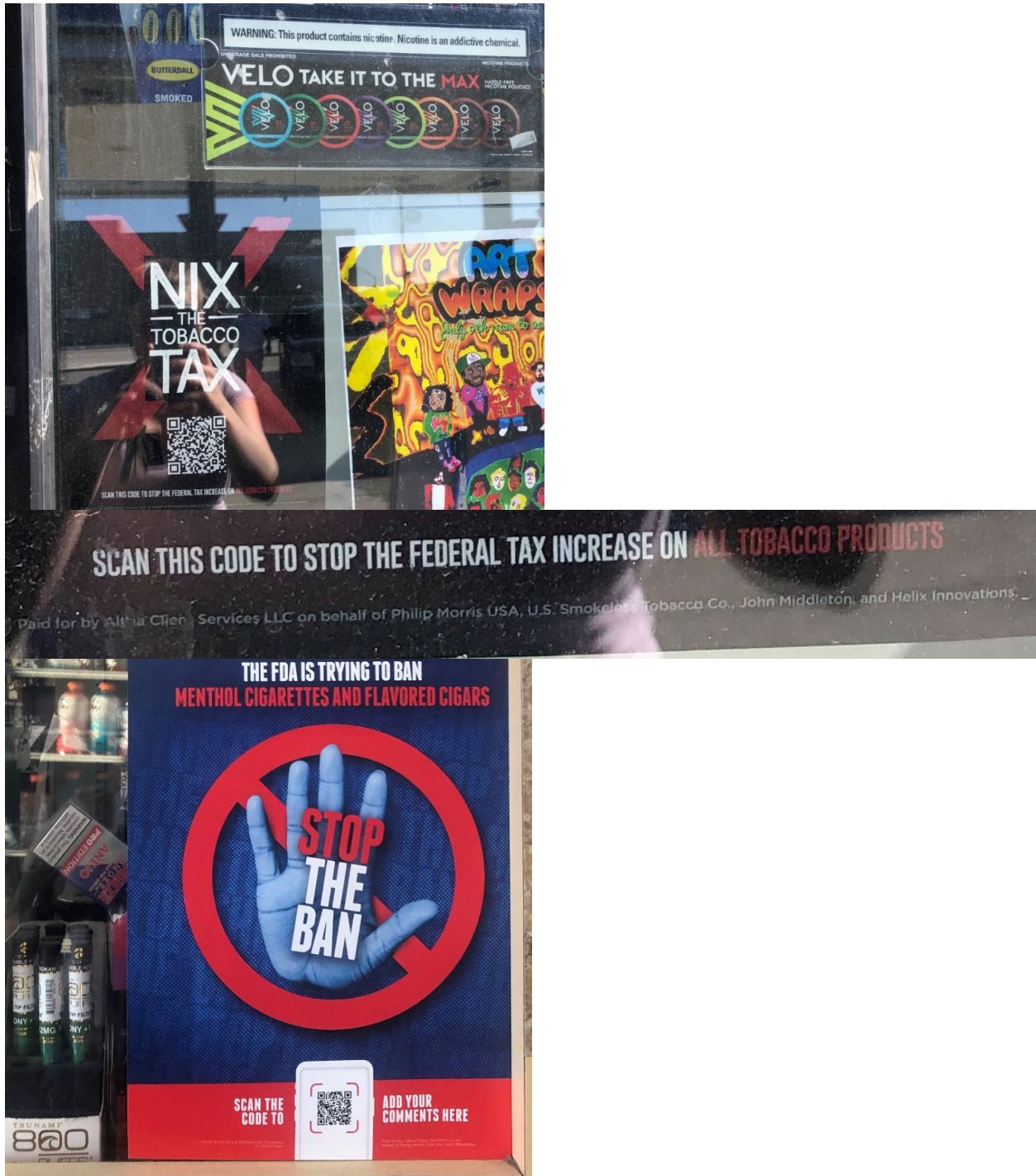
- a. Is chew, snuff, dip, or snus SOLD here? Yes No *[Skip to 17a]*
- b. Is chew, snuff, dip, or snus flavored with MINT, MENTHOL, or WINTERGREEN sold here? Yes No
- c. Is chew, snuff, dip, or snus with flavors OTHER THAN mint, menthol, or wintergreen sold here? Yes No
- d. Is NON-FLAVORED chew, snuff, dip, or snus sold here? Yes No
- e. Any there ANY price promotions for chew, snuff, dip, or snus? Yes No *[Skip to 17a]*
- f. Any price promotions for chew, snuff, dip, or snus flavored with MINT, MENTHOL, or WINTERGREEN? Yes No
- g. Any price promotions for chew, snuff, dip, or snus with flavors OTHER THAN mint, menthol, or wintergreen? Yes No
- h. Any price promotions for NON-FLAVORED chew, snuff, dip or snus? Yes No

E-CIGARETTE PRODUCTS

17. Answer these questions about E-CIGARETTE PRODUCTS:

- a. Are e-cigarette products SOLD here? Yes No *[Skip to 18a]*
- b. Are any e-cigarette products flavored with MINT, MENTHOL, or WINTERGREEN sold here? Yes No
- c. Are any e-cigarette products with flavors OTHER THAN mint, menthol, or wintergreen sold here? Yes No
- d. Are any NON-FLAVORED e-cigarette products sold here? (tobacco flavor only) Yes No
- e. Any there any e-cigarette price promotions? Yes No *[Skip to 17i]*
- f. Any price promotions for e-cigarette products flavored with MINT, MENTHOL, or WINTERGREEN? Yes No
- g. Any price promotions for e-cigarette products with flavors OTHER THAN mint, menthol, or wintergreen? Yes No
- h. Any price promotions for NON-FLAVORED e-cigarette products? (tobacco flavor only) Yes No
- i. Are e-liquid in droppers sold here? Yes No *[Skip to 17j]*
- j. What is the cheapest advertised price of a dropper of e-liquid? \$ _____
- k. How many ounces are in the cheapest dropper of e-liquid? _____ oz
- l. Are any single disposable e-cigarettes sold here? Yes No *[Skip to 17n]*
- m. Enter the CHEAPEST advertised price for a single disposable e-cigarette: \$ _____
- n. Are any "pod mod" e-cigarette products sold here (e.g. JUUL, MyBlu, Vuse Alto, NJOY ACE, etc.)? Yes No
- o. Are any "pod mod" devices sold here? Yes No *[Skip to 17q]*
- p. Enter the CHEAPEST advertised price for a "pod mod" device: \$ _____
- q. Are any "pod mod" cartridges sold here? Yes No *[Skip to 17t]*
- r. Enter the CHEAPEST advertised price for a pack of "pod mod" cartridges: _____

2.11 Chapter 2 Appendix C



Appendix Figure C.1. Tobacco and Vaping Industry Advertisements at the POS

2.12 Chapter 2 Appendix References

Michigan Department of Education. 2020. Michigan School Health Survey System. Available at <https://mdoe.state.mi.us/schoolhealthsurveys/ExternalReports/CountyReportGeneration.aspx>

Chapter 3: Examining a Grassroots Movement in Public Health Advocacy: Who Was Advocating for Tobacco 21?

Tobacco 21 policies are generally presented in the field of tobacco control as a grassroots movement involving community members in advocacy. Using Tobacco 21 as a case, this paper tests if a key mechanism in Theda Skocpol's theory of advocacy, the presence and biases of professional organizations, exists in the T21 movement. Focusing on the organizations involved in policymaking, elite interviews with individuals explore if memberless organizations are acting in the manner Skocpol theorized. By researching who was involved in the process, this paper supports the mechanism described by Skocpol and builds upon it by also exploring the institutions which support this type of policymaking.

Despite wanting and urging grassroots support, advocacy organizations are limited in their ability to mobilize citizens due to institutional structures that create top-down funding, restricted capacity, and over-reliance on polling and public opinion measures. Competition for limited resources, such as human capital and funding, additionally leads to national organizations having a stronger ability to control the political agenda at the state and local level in addition to the national level. Given this bias toward the priorities of national organizations, the Tobacco 21 movement and other tobacco control efforts do not have the civic engagement characteristic of grassroots movements.

3.1 Introduction

Since 2013, Tobacco 21 [T21] laws have spread rapidly across the United States to raise the legal age of the sale for tobacco products (including e-cigarettes, hookah, and sometimes paraphernalia) to 21 years of age. Health and tobacco control advocates promoted the measure as a way to reduce tobacco and nicotine use among youth, particularly high school students who utilize social connections with friends and family over the age of 18 to obtain tobacco products (Schneider et al. 2016). The efficacy of T21 laws was supported by an Institute of Medicine report published in 2015 which summarized studies on T21. The study found there is evidence that T21 policies reduce morbidity and mortality (Committee on the Public Health Implications of Raising the Minimum Age for Purchasing Tobacco Products, Board on Population Health and Public Health Practice, and Institute of Medicine 2015). Since then, T21 policies spread to over 570 cities and counties across 42 states and a national law was passed in December 2019 (Preventing Tobacco Addiction Foundation 2023e).

The rapid adoption of these policies has been attributed to the political nature and incremental approach of T21 policies; the political risks to politicians are low due to the focus on protecting youth and the policies are rather simple compared to smoke-free laws (Everett et al. 2018). Prior to 2018, this made passing a T21 policy attractive to cities and states, where there was a window of opportunity open due to concerns about the health effects of e-cigarettes and a lack of federal action (Ribisl and Mills 2019). In 2018, youth e-cigarette use was labeled an “epidemic” by Dr. Scott Gottlieb, the US Food and Drug Administration (FDA) Commissioner at the time (Office of the Commissioner 2020). Pressure mounted at all levels of the US government to respond to the crisis and reduce teen use of tobacco products, especially e-cigarettes. Given this opportunity, public health advocates were eager to act, and pushed to

disseminate T21 policies. Within the field of public health, and in tobacco control literature specifically, T21 efforts across the United States have been described as grassroots-based and community-driven from the beginning by tobacco control advocates involved in the T21 movement (Reynolds and Winickoff 2021; Reynolds, Crane, and Winickoff 2019). Useful definitions are provided in a recent article by Yunyi Qin: “In contemporary scholarly usage, the term “grassroots” generally refers to groups of citizens at the regional, and local level within the state’s jurisdiction, who are typically powerless and unaffiliated politically” (Qin 2023). This indicates that citizens outside a party, political elite, or others in power are participating and typically seeking to influence a legislative outcome. In a grassroots movement or campaign, these citizens take part in political action or debate to achieve a goal, like policy passage (Qin 2023; Bergan 2023). Advocacy groups, such as the American Academy of Pediatrics and American College of Cardiology, have also explicitly characterized T21 as a grassroots movement (American Academy of Pediatrics 2021; Miller, Lewis, and Waites 2018). The American Academy of Pediatrics was most clear in this respect, summarizing the spread of T21 as follows:

“The momentum for Tobacco 21 legislation began in 2005 in Needham, Massachusetts, with the local government passing a law that restricted tobacco sales to anyone under the age of 21. Grassroots efforts in other communities across the United States soon followed.” (American Academy of Pediatrics 2021)

Advocates of the policy maintain their position that T21 is truly a grassroots movement across the United States, stating: “As a result of efforts from an influential grassroots ‘Tobacco 21 Movement’, localized T21 laws were adopted prior to the national law...” (Woolsey et al. 2023). Other public health scholars as well as health organizations have continued to explicitly say or heavily imply the movement is grassroots (Woolsey 2022; Deakin Health Economics and

Centre for Population Health Research 2018; Bhatt et al. 2022; Juarez et al. 2022; Roche et al. 2015).

However, it is unclear if T21 policies were truly the product of a grassroots movement. It is imperative to understand the mechanisms that lead advocacy activities to result in policies within the United States political system because these mechanisms are reflective of the functioning of US democracy: the agendas that are developed and the issues that are given priority differ based on whether general citizens or powerful political actors are pursuing a political outcome. A grassroots movement with considerable civic engagement may choose to prioritize different issues or seek different solutions than an advocacy effort led by elite organizations or a few powerful actors. It is important to know who is involved as well as who is not represented in the process of advocacy, especially in public health where population-level policies affect all within a jurisdiction.

The question, then, is whether the T21 movement was a grassroots effort across the United States or if another political phenomenon is taking place. To address this question, theories from political science literature are helpful in exploring the extent to which citizens and organizations were involved in advocating for T21. The literature relating to political opportunity structures and urban regime theory were reviewed for possible hypotheses. However, both theoretical areas were insufficient for addressing the question above. Political opportunity structure theory focuses on factors which lead to a social movement or prevent one rather than determining if a movement was grassroots or led by other advocates. Additionally, much of the political opportunity structure literature focuses on social protest; the political actors are largely citizens or activists in general with no clear differentiation between individuals and organizations as political actors (Meyer and Minkoff 2004; de Moor and Wahlström 2019; MacIndoe and

Beaton 2019; Kitschelt 1986; Giugni 2009; Rootes 1999). This lack of distinction among political actors is necessary in this case to understand if the policy is coming from the bottom-up (grassroots) or top-down (from organizations or other actors). Comparatively, urban regime theory was also a poor fit as it focuses on the relationship between the government and the private sector (businesses) and the resulting effect on urban economic, rather than social, political issues (Mossberger and Stoker 2001; Orr and Stoker 1994; Stoker and Mossberger 1994). Neither conceptual framework adequately accounted for advocacy nor public health organizations which were key to T21 efforts.

A theoretical framework which better aligns with the aim to evaluate if T21 was a grassroots movement or driven by organizations is one provided by Theda Skocpol in her book *Diminished Democracy: From Membership to Management in American Civic Life*. Skocpol describes how civic engagement in the United States has changed dramatically since the 1960's and 1970's and discusses the shift during this time from large citizens groups with sizable membership bases to professional, memberless organizations (Skocpol 2003). With the rise of smaller, more nimble, management-style organizations, Skocpol found citizens were generally less involved than in prior decades. While the organizations may have constituencies they represent, they do not have members, per se. For many citizens, engagement in American politics has changed and there is less citizen-lead advocacy. As Skocpol noted, while some individuals may volunteer, it is usually through nonprofit institutions and individual donations that assist professionals in achieving their organization's goal (Skocpol 2003).

Skocpol's theory of advocacy provides a useful hypothesis: memberless groups are driving policy efforts in a top-down approach rather than bottom-up as they seemingly represent

(and speak for) a large number of people without actually getting their input. This argument and implications for democracy are summarized in this passage from *Diminished Democracy*:

“Touted as spontaneous and entirely bottom-up, many of today's “community organizations” or “grassroots” undertakings are not quite what they seem. Sparked by well-connected leaders, they frequently have -- or soon obtain -- outside funding from tax-exempt private foundations. There is nothing wrong with this, but we should not imagine that it is a fully democratic arrangement. Movements and groups that receive outside funding have to apply and reapply for resources while meeting detailed regulatory guidelines. Professionals often become key unelected leaders, because groups depend on their expertise and connections to the outside funders.” (p. 228-229; Skocpol 2003)

As pointed out by Skocpol above, there are many instances of grassroots movements being led by professionals within nonprofit organizations which are funded by outside organizations and not membership dues or other citizen-provided resources as membership organizations once were. In these arrangements, professionals must be responsive to funders and their needs, possibly displacing responsiveness to the community and citizens. Social movements which involve citizens, like the Tea Party (Williamson, Skocpol, and Coggin 2011) and Indivisible (Gose and Skocpol 2019), are the exception but are heavily focused on the national level or specific highly salient topics (abortion, voting rights, COVID-19). Less attention is being paid to routine public health and regulatory politics; whereas federated voluntary associations once tackled alcohol policy, the same types of organizations have not been around to address similar issue areas like tobacco policy (Skocpol 2003; 2008).

Skocpol's theory of advocacy predicts that memberless, professional organizations will be the most influential in setting the agenda within the state and key to what policies were put into place with little feedback from citizens as a whole. Following this logic from *Diminished Democracy*, we would expect there to be more emphasis on leadership from advocacy groups than citizen involvement. An existing evaluation using qualitative case studies of T21 in Ohio found a similar result (Jarman, Mendez, et al. 2019; Jarman, Kiessling, et al. 2019). However,

the case of T21 needs to be examined further to determine if it is one of many examples of the phenomenon Skocpol describes or if it offers a different view of organizations which incorporate more democratic components. Given that T21 is described in public health literature as a grassroots movement, it is also possible that citizen involvement has reemerged.

Tobacco control efforts provide an opportunity to test the extent to which memberless organizations lead policy advocacy in the US and further evaluate how these organizational arrangements impact policymaking. As a policy area, tobacco control is an issue which citizens are likely to have an opinion about across class divisions and places. Americans are familiar with tobacco use, particularly smoking. In the 1950's and 1960's, the peak of smoking rates, over half of adult men and about one in three women smoked cigarettes (Ahmed and Gleeson 1970). While tobacco use has fallen drastically, one in five Americans still use tobacco currently. Many more have experienced tobacco use secondhand; expressing concern about their child vaping, watching a coworker take a smoke break, caring for a sick relative with lung cancer, or attending the funeral of someone who has passed from the leading cause of preventable death in the United States (Centers for Disease Control and Prevention 2023b). With this familiarity, it is worth exploring who is involved and has a voice in creating tobacco control policies, especially for policies like T21. As mentioned, the story of T21 is used as a classic example of a grassroots movement and thus should easily refute the hypothesis of memberless organizations if citizens (Woolsey et al. 2023; American Academy of Pediatrics 2021).

The hypothesis about memberless organizations can be expanded on further. First, it is expected that Skocpol's view still holds true and that memberless advocacy organizations are the leaders in policy. Skocpol describes these more fully, detailing monetary arrangements and incentives for power. A key part of shifting away from voluntary associations is related to how

the groups are funded. In the past, members paid dues, but in non-profit organizations without members they rely on donations or grant funding. While citizens may contribute, impactful donations often come from wealthy donors. Many non-profit organizations fall under section 501(c)(3) of the federal tax code and have tax advantages: donors can write off donations to these organizations on their taxes and they are eligible to receive grant funding from foundations. These advantages come at a cost, however. Organizations with 501(c)(3) status cannot engage in campaigning and have restricted ability to lobby and partake in grassroots efforts. The Internal Revenue Service (IRS) gives the following guidance: “no organization may qualify for section 501(c)(3) status if a substantial part of its activities is attempting to influence legislation... A 501(c)(3) organization may engage in some lobbying, but too much lobbying activity risks loss of tax-exempt status.” While this is not entirely clear-cut, the IRS does outline what constitutes lobbying activity and provides ways to measure how much lobbying an organization conducts (Internal Revenue Service 2023). Organizations which fall under 501(c)(4) do not have these benefits nor restrictions so it is expected in this study that tax status will dictate involvement in policies and is an important consideration (Sobieraj and White 2004).

The other primary funding source for non-profit organizations, grant funding, often comes from the government or foundations. As Skocpol notes, it is not widely acknowledged how much non-profit organizations are intertwined with these sources of funding- the relationship also involves providing technical assistance or other services to “co-produce” programs and expand the capacity of the government to fulfill all it is tasked with doing. Skocpol characterizes this overlap as follows:

“Nonprofit institutions often brag of their independence from both the market and the government, but actually they are profoundly intertwined with both, especially with government. Not only do nonprofits regularly seek monetary contributions from the well-to-do, they cooperate closely with local and state governments to (as Berry puts it) “co-

produce” public programs. During an era when governments are trying to do more and more without hiring new “bureaucrats”, nonprofit institutions help them to implement publicly funded programs. As a by-product of their close involvement with public policy implementation, moreover, nonprofits are frequently approached by legislators and public administrators to provide research expertise and advice about policy design.” (p. 151; Skocpol 2003)

This close involvement with government is expected to have consequences for how organizations act in the policy arena. In *Diminished Democracy*, Skocpol notes the co-production of public programming favors smaller, professional groups better able to mediate relations between federal government and citizens. Based on this, it is expected that organizations instrumental in passing T21 may be involved in providing services on behalf of the state or national government and therefore have a vested interest in changing policy to their advantage.

This paper will test the key mechanism of Skocpol’s advocacy theory using T21 as a case. Assuming her theory holds true, it is expected that advocacy organizations without members will be advancing the T21 policy without involving citizens. The secondary hypothesis is that various institutions keep these groups in a privileged position to make policy, such as tax code incentives for donations or other funding mechanisms. This study involved fieldwork in Colorado and Virginia through interviewing relevant political actors to examine what individuals and groups were involved in T21 policy efforts. By analyzing the passage of this policy, I aim to better understand the role of organizations and citizens in public health policy and politics in general. Observing the politics around T21 will additionally add context about how organizations were able to successfully pass this policy in many parts of the US.

3.2 Methods

Execution of this project involved elite semi-structured interviews with 30 relevant decision makers and advocates in the areas where T21 policies have passed. 14 interviews were

conducted in Colorado, 10 interviews were conducted in Virginia, and 6 interviews were completed with individuals at the national level who had insight into the T21 movements in either state. Colorado and Virginia were both chosen as the cases for this study to test what organizations were involved and what role, if any, citizens played. All 50 states were compared across the following factors: timing of T21 passage, tobacco use rates, preemption status, political features, tobacco production, and demographic characteristics (for further discussion of this aspect of case selection, please see the Chapter 3 Appendix A). These key factors were selected as each was influential in Tobacco 21 success in previous research (Jarman, Mendez, et al. 2019).

Rather than selecting policy entrepreneurs like Hawaii, the first state to pass T21 (Reuters Staff 2015), Colorado and Virginia were chosen to estimate the T21 political process across the US. Both states have similar tobacco use rates among adults and youth, indicating the degree of the perceived problem would likely be the same. Additionally, while Colorado and Virginia lean Democratic and Republican, respectively, neither are at ideological extremes like other US states. However, these states are different across every other factor. With the goal of testing the hypothesis that memberless organizations led policy efforts instead of a true grassroots movement, case selection was based on attempting to understand the political process of T21 across the US. The wide range of attributes which impact T21 passage make Colorado and Virginia together a set of diverse cases which have variation on key factors (Gerring 2008). Despite Colorado and Virginia having different characteristics, both passed T21. In Virginia, it was surprising that a T21 policy passed as it is a tobacco-producing state and has a poor track record of supporting tobacco control policies. Colorado as a whole was slow to adopt T21 despite having some of the first localities adopt the policy. Furthermore, Colorado is recognized

as a progressive state in tobacco control, having passed many other policies before T21. If memberless advocacy organizations rather than grassroots efforts explain passage of T21 in these two states, it is likely the theory holds across the entire country.

True to the case selection, the policy landscape in each state is very different. Virginia was the 7th US state to pass T21 in July 2019 (Preventing Tobacco Addiction Foundation 2023f). The Preventing Tobacco Addiction Foundation [PTAF], the key national group providing information and materials on T21, graded all the statewide T21 laws in the US. This grading provides an indicator of how comprehensive each law is in relation to best practices set by tobacco control advocates. PTAF gave the T21 policy in Virginia the lowest grade possible, an F, based on the categories of enforcement, licensing, penalties, preemption, and definitions (Preventing Tobacco Addiction Foundation 2023g). While Virginia had a T21 policy, this failing grade indicated that the bill did not have the approval of public health advocates and was lacking in key areas.

Furthermore, it is important to recognize that the largest tobacco company in the world is based in Richmond, Virginia, the state capitol. Altria is a corporation which evolved from Philip Morris International, the maker of Marlboro cigarettes. Over time, Altria diversified beyond cigarettes by acquiring companies with various business models and products, including food, but still remains a top player in the tobacco industry. Along with other acquisitions, Altria also acquired the U.S. Smokeless Tobacco Company in 2009 and the maker of NJOY e-cigarettes in 2023, demonstrating commitment to remaining in the tobacco product business (Altria Group, Inc. 2023). Altria supported the Virginia T21 policy (Counter Tools 2019).

For additional context, preemption status plays a major role in the passage of T21. Various states have preemption in state law that prevents localities from passing policies which

are more strict than the state law. This legal mechanism limits what policy options are available to localities. Virginia is a state which follows Dillon's Rule, where localities have powers delegated to them by the state government and if they are not expressly given power over a certain area, they in effect have no policymaking ability. For tobacco control, local governments in Dillon's Rule states are extremely limited in what policies they can pass. Conversely, Colorado is a state which has home rule authority, providing localities the broadest possible power to enact local policy (Public Health Law Center 2020; Bernard 2020). For tobacco policies, Colorado did previously preempt specific taxation measures, but that preemption measure was repealed recently in 2019 (American Heart Association 2020). Colorado was the 30th US state to pass T21 in July 2020, after T21 was passed nationally (Preventing Tobacco Addiction Foundation 2023a). In direct contrast to Virginia, PTAF gave Colorado the highest grade (A) for the T21 policy passed in 2020, indicating the bill integrated all best practices (Preventing Tobacco Addiction Foundation 2023b).

Interview participants were purposively sampled from tobacco control advocacy organizations, state and local public health departments, and decisionmakers who sponsored T21 policies. Following interviews, snowball sampling was used to discover who else was involved in the T21 process. Interviews continued until saturation was reached. Interviews were conducted between April 2022 and June 2022. Trint, a subscription service, was used to transcribe recorded interviews. A research assistant manually corrected and aligned the transcripts to ensure accuracy. Interviews were then analyzed using MAXQDA 2022. Further information on analysis, the interview process, as well as the protocol, can be found in Chapter 3 Appendix B and C.

3.3 Results

Overall, Skocpol's theory of memberless organizations controlling the policy agenda holds true in Colorado and Virginia. Despite the field of public health championing T21 as a grassroots movement, upon closer inspection elite, professional organizations were truly the driving force of the policy, not citizens themselves. Across interviews in both states, the key organizations pushing T21 forward were the Preventing Tobacco Addiction Foundation (PTAF) and Campaign for Tobacco-Free Kids (CTFK). Both of these 501(c)(3) organizations are professionally run and national in scope. PTAF was founded by a medical doctor who realized raising the age of sale for tobacco to 21 nationwide, similar to alcohol, could be a major public health improvement. Over time, the idea of T21 gained momentum and PTAF began to be known by tobacco control advocates as "the T21 organization."

Even in smaller jurisdictions in Colorado where citizen advocates pushed for T21, PTAF was invited to assist as the organization's webpage and information was accessible:

"I was reading the New England Journal of Medicine and an article that came out in January of 2016 "[have] tobacco 21 laws come of age." And ... I was like, oh my gosh, there's this thing called Tobacco 21. There's this organization. And I looked into it, and I thought, 'You know, you're actually allowed to make local laws on this. And there are some states that have done this already' ... it all makes much sense to me ... I'm going to do this locally ... I'm in this small town where I have ... a liberal ... City Council ... there's a small county, but it has a big name ... No city or county had done it in Colorado ... So I just thought, I'm going to do this. And so I just hit the ground and I contacted ... the director of the Western States for Tobacco 21." (Participant[P]1, CO, Local Public Health)

It is worth noting, however, that this citizen has a master's degree in public health, serves as an emergency room physician, and was serving as medical director for a Colorado County. While it was a resident who brought up the concern and led the T21 effort, the participant is a professional, highly educated, and involved in local public health efforts.

The involvement of these national organizations was not always welcomed by everyone in the tobacco control space at the state level in Colorado. PTAF was initially challenged by the Colorado Department of Public Health & Environment for starting advocacy work in Aspen without connecting with state-level advocates and understanding the policy agenda at the state level. At the time, the state health department wanted localities to focus on passing licensing regimes locally (P14, CO, State public health). In effect, a national organization had come into a local community and disrupted the state agenda by taking attention away from state policy objectives and bringing more attention to the national advocacy objective. In this case, the goal of PTAF and, by extension, CTFK was to pass T21 in localities to build momentum and get on the state agenda (P12, National, Advocacy org). However, this tactic threatens existing state agendas when there is no communication, and the state level is effectively cut out by a national organization assisting a locality in passing a policy:

“They [PTAF] pick Aspen, say ‘hey, we think Aspen... could be a leading early adopter community in Colorado and let's start working in Aspen’ and then we find out that they're doing this. And I get ... I remember I chewed him out, I never chew anybody out over the phone, especially a stranger. But anyway, it's like, ‘what are you doing coming to Colorado? Why aren't you talking to us first? Do you know? Why are you working at odds against our priorities? You could really unravel years of work that we have put into place by simply just imposing this on the community’.” (P14, CO, State public health)

The last point about “imposing” a policy on a community demonstrates that a national organization may be more concerned with passing a policy than responding to the needs of a community. While Aspen invited PTAF to assist in providing knowledge and resources, other communities may not have the same experience. Given the power of a national advocacy organization, a locality’s agenda may be shifted to passing T21 even if it is not citizens advocating for the policy. If the local agenda is not in line with the agenda of the national organization, they risk losing the resources and knowledge that organization could provide.

In the case of Colorado, the state public health department was able to form a quasi-partnership and agreement with the national organizations around T21 (P14, CO, State public health). After an initial failed attempt at statewide T21 in 2014, the Colorado Department of Public Health & Environment agreed to support local efforts alongside national organizations and local partners. PTAF became involved at this point then and told the health department when the time was right to pursue state-level action: "...it wasn't again until 2019... [or 2018] that the Tobacco 21 Foundation [PTAF]... came back around and really started having broad statewide conversations about tobacco 21 again" (P15, CO, State public health). This was not the same situation for other states. The leader of an advocacy organization unaffiliated with PTAF and CTFK stated that state governments in the southeast US had more difficulty working with national organizations:

"tobacco control programs have a complicated relationship with T21 law because it just the T21 laws because it just sort of came so grassroots came so quickly. They never quite figured out how to coordinate the work, or at least not butt heads about it or build them or support each other or complement each other." (P11, National, Advocacy org)

For states like Virginia, where Dillon's rule prevents localities from passing policies like T21, the national organizations were still part of the agenda-setting at the state level:

"The Campaign for Tobacco-Free Kids ... I'm almost 100% sure that they had a really good assessment that a state ... coalition or group could do to say, 'Are we ready to move to tobacco 21?' And if you have a lot of [other policy] pieces already in place, you know, you might. ...we were not ready to do [T21]. It was [the Campaign] for Tobacco-Free Kids that kind of helped assess readiness for [T21]." (P28, VA, State public health)

The quote above demonstrates that state health department officials rely on the knowledge and resources of national advocacy organizations like CTFK to determine which policies they are able to pursue at the state level. Given that Virginia was a Dillon's rule state and did not have many other tobacco control policies in place that would indicate T21 would be successful, the resources provided by CTFK advised Virginia should not pursue T21 and there

was no advocacy effort by the state or national organizations on the policy. This, coupled with industry action, helps explain why T21 was a surprising development to public health advocates in Virginia (P25, VA, Foundation; P21, VA, State public health). Additionally, one interviewee noted it was improbable a public-health sponsored bill would have passed, potentially due to the lack of resources and attention to the issue at both the state and federal level:

“I don't think anyone really had ... [tobacco] 21 on their radar that much ... If it was solely a VDH [Virginia Department of Health] bill, I doubt it would have actually passed. It was just the way the industry had promoted it and they swept it through. And the way it was done, it's just accepted like, ‘Hey, we're doing this.’” (P22, VA, State public health)

Beyond the leading national advocacy groups (PTAF and CTFK), the individuals introducing and spreading T21 were most often medical professionals (doctors, nurses) or professionals involved in advocacy or public health organizations (P1, CO, Local public health; P18, CO, State decisionmaker; P5, CO, Local public health; P30, VA, State decisionmaker). Furthermore, there are also a few cases where decisionmakers noticed youth vaping as a problem and pursued T21 after they learned of other areas in Colorado passing the policy to solve the same issue in their local area (P2, CO, Local decisionmaker; P17, CO, State decisionmaker; P5, CO, Local public health). Avon, CO was the only specific area studied where the issue was brought up by a local decisionmaker and no national group was directly involved, just the local public health department for the county. The council member who championed the issue was a parent dealing with vaping as a public health crisis and had seen an article from the local newspaper about T21 passing in Aspen. This article was effective in getting T21 on the local agenda for Avon:

“[my] son was in middle school. Vaping was becoming a hot topic, between having speakers [from local public health] at the school, discussions with our son, and I happened to catch a story out of the Aspen market because Aspen actually passed T21 before us ... I like to read news around the region, and I saw that they had or were about to pass the their own T21. And so that's really kind of my first recollection of how those

came to mind was, hey, I saw the story in a regional newspaper [Vail Daily], and that prompted me to say, 'hey, we should consider doing this in our town'." (P3, CO, Local Decisionmaker)

The level of involvement of public health groups also challenges the idea of T21 being a grassroots movement as the concept was brought to decisionmakers by advocacy organizations or health department staff rather than citizens (P5, CO, Local public health; P7, CO, Local public health):

"We already got four flavor tobacco product ordinances passed and 13 jurisdictions passed a tax just from our grantees educating on this ... If communities were saying, 'what else can we do?' And our grantee says, 'Well, another option in the tobacco control tool kit is tax. We can't help you on that ... But here's another option you could do'. And then we ... would find out if a community wanted to do that. We could [then] hand it over to [the American] Heart Association ... and [American] Cancer [Society]... Then they can pick up those aspects of it and campaign ... So there was a close hand-off." (P14, CO, State public health)

One organization was quite aware of their role of offering policy options to a community as a national organization. There was recognition from leadership that efforts needed to be accepted and, ideally, driven by the community:

"[We are] a national organization ... it's not helpful for us to come in and tell a city what they need to do. But to be able to come in and offer resources to people on the ground that are already local champions for it is definitely the way to go and just as going to give you more traction. And those are the people that are going to have to live with the effects of that policy being passed, too ... the messaging coming from them is crucial." (P9, National, Advocacy org)

However, the organization was still bringing T21 to various cities and describing how mayors and other city leaders could use T21 to position themselves to their constituents as 'health champions'. While there was an emphasis on local decisionmakers being a key part of the process and taking credit for passage of a policy, the goal of the national organization was still to shift the local agenda to policies they had identified as effective for improving public health (P8, National, Advocacy org).

Overall, community engagement in T21 efforts was less about obtaining community input, mobilizing citizen action, or generating local support. Rather, the goal was usually “educating” the community or decisionmakers (P10, National, Advocacy org). This type of communication was focused on indirectly promoting policies by discussing effectiveness and potential impact on health outcomes:

“in doing our education, we really talked about trifecta at that point around price increase, tobacco 21, and licensing ... we pushed kind of the big [policies] as a package. As far as the price piece goes, that was a little tricky, so we educated ... on the idea of price increase in general because, being state funded, we could not advocate for a tax. But there are other ways. So, we would talk about not accepting coupons or raising the floor price as options. I think most jurisdictions, though, quickly saw through that and were like, we're going to tax it because that will bring in revenue as opposed to the other measures, which then just make [tobacco products] more expensive ... when educating the other councils, we would talk about the package with them as well.” (P5, CO, Local public health)

The focus on education is logical for these organizations as education is a core value and activity of public health (Hahn and Truman 2015). State and local health departments play a major role in health education, which entails providing information which can help individuals and communities improve their well-being (U.S. Bureau of Labor Statistics 2022). There are many positions in public health dedicated to creating health education materials and campaigns. As the previous quote alluded to, the difference between education and advocacy is difficult to identify (P5, CO, Local public health).

Politically, the focus on educating also makes sense considering organizations who are part of or receive funding from the government are restricted in lobbying or supporting a policy directly (P5, CO, Local public health; P7, CO, Local public health). Instead, framing information favorable to T21 without officially supporting the policy could “protect” the professionals working on the issue:

“we've built some solid relationships with the university and their health policy research department ... And we actually put on a town hall together. And ... one of the interesting distinctions between education and lobbying ... When you have paid staff that are... associated with federal funding or state level funding, if you want to develop resources and talking points, if you develop them for people working in a campaign, then that is called grassroots lobbying to a certain extent. However ... and I'm simplifying this, but if you develop this beautiful slide deck with all these talking points ... for a town hall and you make that publicly available as a part of the town hall ... then if people want to use it later, that's totally fine. And so we actually we sort of we put a lot of resources together to develop a town hall ... I never knew it was protection for all of us working together on this stuff, but that the university partnership, I think, was instrumental.” (P11, National, Advocacy org)

Citizens could express their opinions to decisionmakers directly, as always (P4, CO, Local public health; P28, VA, State public health). One local decisionmaker discussed how Avon, Colorado encouraged emails from citizens and allowed discussion at town meetings which were conducted in a hybrid model, with the virtual portion being broadcast on community access television. This transparency and requests for involvement resulted in decisionmakers being able to gauge community support before even pursuing a policy officially (P2, CO, Local decisionmaker). However, there were rarely opportunities described for general citizen involvement with public health organizations, with opportunities like the town hall from the previous quote being scarce (P7, CO, Local public health). Public health groups instead chose to engage with and recruit specific citizen groups: youth, parents, schools, and doctors (see the Perceived Representation of Constituents for further information).

While advocacy organizations were building their grassroots support, the tobacco industry was in turn attempting to create support at the local level. Some of the grassroots opposition to T21 was organic as it came from veterans and active service members who served in the US military. The military uses tobacco products at a higher rate than the general population (Centers for Disease Control and Prevention 2023a) and it has been noted that the culture of the military supports tobacco use (Truth Initiative 2018). For T21, raising the age

poses a problem for those in the military as the age to enter service is 18 in the US and they “argue that T21 laws are paternalistic given that 18 year olds can vote, drive, serve in the military and buy guns” (Jarman, Mendez, et al. 2019). In Colorado, this argument was either ineffective (P7, CO, Local public health) or other evidence and reasoning was stronger than the argument raised by the military (P6, CO, Local decisionmaker). For Virginia, an exemption for military members was included in the statewide T21 policy via an amendment from the state Senate, but there is no information on who requested that change, or why (P22, VA, State public health; P28, VA, State public health; P30, VA, State decisionmaker).

In more concerted efforts, it is expected that advocacy from the tobacco industry would rely on lobbying power, but the tobacco industry has powerful grassroots mechanisms as well (Kennedy, Gray, and Ballweg 2021; Fallin, Grana, and Glantz 2014; Tobacco Control Research Group 2020). The industry sends signage to retailers that encourages viewers to “oppose the adult flavor ban on menthol cigarettes, dip, cigars, and nicotine pouches” with a QR code link to “take action now” by sending feedback directly to legislators (see Figure 3.1).

Sympathetic retailers post the message and recruit an authentic grassroots movement to oppose tobacco control at the state level. In this way, the tobacco industry strengthens opposition among retailers to tobacco control policies. These signs reach smokers and other potential supporters through the point-of-sale and offers an easy mechanism to provide their voice and input. Social media is also used to mobilize opposition to tobacco control policies, but this is more common for e-cigarette brands than cigarettes (O’Brien et al. 2020; Haupt et al. 2021). Compared to these examples of soliciting real grassroots involvement from citizens, the industry has a known reputation for astroturfing by creating grassroots front groups which are actually

crafted and controlled by the industry itself (Tobacco Control Research Group 2022; 2019). This is exemplified in the following quote:

“They'll just go out and create, you know, phony organizations and front groups. But it's always to try to keep the attention off the industry ... if you look at the tobacco 21 debates around the country and in Congress, you know, they're all being funded and orchestrated by tobacco corporations.” (P13, National, Academic)

The key to successful astroturfing and creating front groups is to make them appear as a legitimate grassroots movement or organization. Rather than being spontaneous and driven from the bottom-up, the money and messaging is coming down from the industry at the top. One prime example is the National Smokers Alliance funded by Philip Morris and created by a firm specializing in public relations. The group paid “activists” to recruit members and then sent targeted mailings to these members with pro-smoking messages and detailed information on how to oppose tobacco control policies (Tobacco Control Research Group 2022). While outwardly appearing as a citizen’s movement, the National Smokers Alliance was truly working towards the agenda of the tobacco industry.

The agenda of the tobacco industry has remained consistent over time and companies are united in wanting to sell the broadest array of products with the least regulation possible. Politically, this industry-wide unity is advantageous as it increases lobbying efficacy. In part, the tobacco industry has achieved this by consolidating to a limited number of key players through mergers and acquisitions, reducing competition in sales and advocacy. While there appears to be a long list of tobacco companies lobbying and potentially competing against each other (OpenSecrets 2023), there are actually few actors considering that Altria owns Philip Morris USA (Altria Group, Inc. 2023) and through a series of deals Reynolds American acquired Lorillard in 2015 (R.J. Reynolds Tobacco Company 2023) and then Reynolds American was acquired by British-American Tobacco (British American Tobacco 2023). Additionally, Imperial

Tobacco Group and Japan Tobacco International have been involved in deals regarding cigarette brands, but also have other tobacco products in their portfolio such as cigars (Imperial Tobacco Group 2023; Japan Tobacco International 2023). Moreover, all of the key tobacco companies mentioned above have at least one e-cigarette brand among their portfolio (Tobacco Control Research Group 2023). Altria has been featured most in the media recently, having purchased a 35% stake in Juul Labs and then divesting after court proceedings to instead acquire Njoy Holdings, Inc. (Bradham 2023). As key stakeholders in the vaping industry, the tobacco companies have reduced competition in the market and also dominated politics (Jain 2018; Tobacco Control Research Group 2023).

Tobacco control organizations are less united in their goals. This is, in part, due to the wide variety of organizations which are part of the agenda-setting process and their various goals. Across interviews, goals for government entities, non-profit organizations, and advocacy groups varied widely, with some organizations even setting different goals at the local, state, or national level. As an example of organizations having diverging goals, a participant discussed how the state coalition (Tobacco-Free Alliance of Virginia, TFAV) was able to typically resolve conflicts:

“There's definitely a back and forth ... the Department of Health Tobacco Control Program may be saying to the state coalition, this is where the CDC is going. This is their new direction. This is how they want us to structure. But then ... the feedback [comes] back the other way, ‘this is what we feel like is needed in Virginia’. So it's kind of a balance with recognizing ... state agencies have their hands tied about certain things. But ... we've always had a really good relationship between like our nonprofits and the state agencies in Virginia ... a strong level of trust, a strong level of understanding, communication, recognizing where each limitations come in. Because ... the American Heart Association [sometimes] has a different policy than the American Cancer Society. So they're also trying to work out their differences. And state agencies have a different thing ... I've definitely heard in other states a lot more in-fighting and challenges with communications between those different types of groups ... I feel like I always really have a good relationship between those groups and an understanding of what we could and couldn't do.” (P28, VA, State public health)

Even if the differences were resolved without a significant degree of in-fighting, this may have been due to the relative strength of independent members of the coalition to shape the agenda. For example, Virginia state public health officials and a quasi-government foundation (funded by Master Settlement Agreement¹ monies [P25, VA, Foundation; P28, VA, State public health]) wanted to work on statewide tobacco retail licensing and other policies the state was lacking compared to other states:

“We did not have tobacco licensing. We did not have a reasonable cigarette or other tobacco tax structure. We have minimal funding for our tobacco control program and our Quitline services. It's all CDC funding. There is no state funding that goes into that.” (P28, VA, State Public Health)

Despite state officials and organizations wanting to focus on licensing policies (P22, VA, State public health), tobacco taxation was the focus of the statewide agenda due to the involvement of national organizations and their overarching goals:

“The [American] Cancer Society nationally, [tobacco tax is] a priority for them... Because [American] Heart [Association], [American] Lung [Association], and [American] Cancer [Society] work as part of our policy leadership in TFAV, [tobacco tax] always has remained one of their priorities and we are continuing to talk about it.” (P25, VA, Foundation)

Similarly, in Colorado, the state agencies were also prioritizing tobacco retail licensing at the local level and other policies before T21 arrived in Aspen (P14, CO, State public health). Part of T21 moving so quickly and being seized upon by localities was partially because national advocacy groups were promoting the policy, but also because T21 was a rather simple policy. Compared to other tobacco control policies like taxes and retail licensure, the idea of increasing

¹ The 1998 Master Settlement Agreement was the result of litigation against tobacco companies after a number of states had sued the companies for healthcare costs of smokers. The agreement was reached to avoid years of lawsuits from state and local governments and resulted in the tobacco companies paying billions of dollars to states who sued. Other measures were included such as restrictions on the tobacco industry and the founding the American Legacy Foundation, now the Truth Initiative, an organization dedicated to reducing smoking (Public Health Law Center 2019; Truth Initiative 2023a; 2023b).

the MLSA was easy to understand for decisionmakers (P4, CO, Local public health; P30, VA, State decisionmaker):

“the evidence [on T21] was really clear. It was also a way to address smoking that had a track record of bipartisan support ... other interventions like cigarette taxes ... are probably going to be very effective but don't have the same level of support and aren't as likely to pass. So that was one reason we steered clear of [policies] like that. And then we ended on Tobacco 21 ... the simplicity of it is really attractive to us ... it's so simple and... easy to message to the cities and to talk about with the leaders.” (P9, National, Advocacy org)

Decisionmakers and the public understood increasing the age to 21, but unfortunately did not always understand the other enforcement aspects which would need to be in place to make T21 effective (P22, VA, State public health). This was the case in Virginia:

“The sexy thing is raising the age. We're talking about non-sexy stuff ... It's very technical ... we're showing the statistics, the license ... And so the [policy components] that we were also trying to explain were not easy about why you should [include them], because it's like ‘we'll just raise the age’, you know?” (P27, VA, Consultant)

The perceived simplicity of the policy raising it in priority, often surpassing policies coalitions had been working on for years. It became important for public health organizations to convince decisionmakers to pass a more comprehensive policy with enforcement mechanisms. This could be achieved using the momentum of T21 to do more than simply raise the age of sale to 21. After the initial friction between PTAF and the Colorado Department of Public Health & Environment, part of the agreement between the two was to align their respective agendas: the goal was not to focus on T21 or tobacco retail licensing, [TRL], the goal changed to having both to create an effective policy. One participant describes how the conversation with PTAF went:

“as soon as Aspen did it [we wanted] to add a TRL ... so licensing plus the minimum legal sales age 21 ... do it together ... We had a few communities that took off with trying to do T21 only ... we did some real concerted education with our grantees, with the local public health officials, with the advocates to all agree we are really going to avoid leapfrogging over licensing. We knew that was a harder political lift ... I remember meeting with [the director of PTAF... He came to Denver and we actually had lunch to say ... ‘we think this is important. You can be the balloon, if you will, that lifts... the

lead weight of tobacco retail licensing. You could that can be the lift. If you jump over and do 21 without licensing, I think we're stuck.” (P14, CO, State public health)
The director of PTAF agreed and tobacco retail licensing was incorporated into model

policy for T21 (P15, CO, State public health). In this specific instance, public health department professionals were able to come together to form a beneficial partnership which advanced both of their existing policy agendas. These government officials emphasized how they knew the needs of their state:

“we work ... hand in hand with our local communities to build support, to provide the right resources ... I'm not saying we knew at all. I'm just saying that we had an understanding of which communities politically and capacity[-wise] were ready to accept TRL/ 21.” (P15, CO, State public health)

Other public health officials felt they were the professionals most aware of local or state tobacco control needs but were limited in expressing those needs without an advocacy partner. This was especially true if other governmental actors were not receptive. This was the case for Virginia, where bureaucrats were required to work with other organizations to lobby a state government which disagrees with them:

“the Virginia Department of Health [VDH] and the Virginia Department of Health Tobacco Control program ... is not always entirely in sync ... VDH did support that tobacco free school and build the case for 21. But more years than not, the agency does not necessarily select our program bill to take on ... they might receive 65, 75 bills internally from within the agency. I do have to understand that they are only able to really support, I don't know what the total number of in tens, 15, 20 of those things that we get the like ‘thanks, but no thanks’, more often than not. And then we use the coalition and all of the generous, wonderful partners there to actually promote the policy, which is what has continued post 21, the flavors and all the rest of that package and everything we've done since then has actually been primarily promoted through the TFAV and the supporting members, not VDH per se.” (P22, VA, State Public Health)

Given that public health professionals must align with their agency, the governor, and higher parts of the governmental hierarchy, this can greatly reduce the ability of such bureaucrats to participate in policymaking, at least directly. Particularly at the state level, public health officials discussed their inability to lobby or take a formal position on a policy if it was not

supported by higher levels of the government. Instead, though coalition work and partnerships with advocacy organizations and other entities like universities, these actors were able to support various efforts.

There are three key themes which promote this type of politics: funding, capacity, and perceived representation of constituents. Across interviews, these were the most consistent themes which contribute to an understanding of the underlying structures and institutions. Funding primarily refers to sources of funding such as foundations and organizations as well as taxes (local, state and/or federal), and the federal internal revenue tax code dictates which organizations can formally lobby. For the purposes of this paper, capacity is defined as the ability of an organization to participate in advocacy. The capacity section will focus on factors that either increase or decrease the ability to participate, including access to resources, human capital, and organizational structure. Lastly, the section on perceived representation of constituents discusses how the field of public health positions itself as protecting, serving, and representing the public. Each is expanded on more fully to better understand the impact each has on institutions which support memberless organizations.

3.3.1 Funding

The source of funding had major implications in this study as it dictated the actions of organizations. This ranged from changing organizational goals to align with funders to controlling what members of an organization could support. The non-profit and advocacy organizations in this study mainly relied on foundation grants and contracts, not membership dues or other mechanisms for financial support. As it has been said before, “no money, no mission”(Beckman 2019). This structure creates an environment of competition which rewards

being able to meet the outlined expectations of grant makers and other funders. One interview revealed a level of infighting among partner organizations when competing for resources:

“the nonprofit world ... instead of like wolf eat lamb, I call it lamb eat lamb. And everybody thinks that somehow nonprofits are like these really angelic places. I've never seen more competitive people ... I worked in health care nonprofit, never met more competitive, backstabbing, gossipy, type A (mostly women), in my life ... it is bad ... these organizations, like, they fight for who's the leader on the coalition and they fight for this grant funding. And well our statistics ... and then it's just this intellectual fight ... And they'd never admit it. And you're right ... for them, it's money too, right? ... they're not existing out of 20 bucks a year their advocates get. For nonprofits, too. I mean, that is how you survive. For whatever you get, like said the flavor ban, I guess whatever that organization is, they got some big Bloomberg grant so then all of a sudden the organization shifts. This is our main focus ... it's where the money comes from.” (P27, VA, Consultant)

As mentioned above, the organizations competing often are on the same coalition. While collaborating on policy initiatives to achieve organizational goals driven by funders, each organization is attempting to outperform the others for the sake of further funding.

In addition to grants and contracts, donations play a large role in tobacco control politics. Through interviews, it was revealed that CTFK is primarily funded by the PTAF and Bloomberg Philanthropies. Both external organizations are funded by independently wealthy individuals (Forbes 2023; Ohio State News 2013). As PTAF was planning to further the reach of T21, the organization had the following plan:

“I went to [the Campaign for] Tobacco-Free Kids and I said, I'll tell you what, I will give you a grant, a large grant, for every state that you get for the first few states you can help me get. And now, with the promise of funding, [the Campaign for] Tobacco-Free Kids came on board. Before they had been, not even lukewarm about it. So that was the lever that sent the boulder down and began to pick up cities and pick up states. Hawaii was the first state to go, then New York, and the ball was rolling.” (P12, National, Advocacy organization [PTAF])

The quote above demonstrates the power of funding to change the agenda of an advocacy group. Additionally, this quote gives insight as to why T21 spread so far so quickly: there was generous funding support behind the efforts and strong incentives to pass policies. The quid pro

quo arrangement established does not follow with the grassroots story of T21, instead highlighting that national organizations were key to the successful spread of T21. With the incentive of grant money for passing policies, the concern raised by state public health officials in Colorado that PTAF and CTFK were targeting specific cities to pass T21 seems quite plausible (P14, CO, State public health). While the organizations were invited in Aspen's case, it is still unclear if T21 was an initiative being done *for* communities or *with* communities.

Beyond the PTAF funding opportunity, in 2019 Bloomberg Philanthropies launched "Protect Kids: Fight Flavored E-Cigarettes... a three-year, \$160 million program led by Bloomberg Philanthropies and the Campaign for Tobacco-Free Kids that aims to combat this epidemic and push leaders to act" (Bloomberg Philanthropies 2023). With these funding streams, CTFK was well-positioned to take on tobacco control issues with the caveat that most of the funding was focused on reducing youth vaping. Bloomberg Philanthropies funded more than just CTFK. An interview highlighted how Bloomberg was focused on eliminating e-cigarettes and funded organizations willing to join in that goal:

"The good news is Bloomberg spread around the money like crazy. I cannot tell you how much money this guy is spending to stop vape and stop flavors ... it shows what one person or two people can do. You don't have to have an army. You have to have a small group of committed people." (P12, National, Advocacy organization [PTAF])

And, again, this is a clear indication that a few "committed people" were providing funding to advocacy organizations to reach the goals of the funder. This is not indicative of a grassroots movement and instead demonstrates that professional advocacy organizations are well funded and able to pass the policies supported by funders. An interesting caveat is these organizations and funders believe the policies being spread could benefit any community across the US without having any input from those communities first.

Along with Bloomberg and PTAF, other organizations like the Robert Wood Johnson Foundation and the Truth Initiative have been major funders of tobacco control efforts. The Truth Initiative was founded as part of the 1998 Master Settlement Agreement, which brought a substantial inflow of funds to tobacco control efforts. Compared to past decades, these efforts are now quite well-funded:

“[Tobacco control has] become more respectable to work on. I mean, back in the seventies when I got involved, most of the big health groups were very nervous about getting involved with this issue. There were no major funders for it, and so it was really a kind of a ragtag group of grassroots people who got it all going. Now, that's still an absolutely crucial part of what's happening. But now, I mean, there's the Bloomberg foundation [Bloomberg Philanthropies], the Robert Wood Johnson [Foundation], the Truth Initiative, and others who are helping to finance this [public health advocacy] infrastructure ... it's not that expensive, but having it makes a huge difference.” (P13, National, Academic)

Becoming more respectable aligns with groups becoming more professional. The influx of funding likely transformed the tobacco control movement from a ‘ragtag group of grassroots people’ to larger, highly ordered professional organizations with federated structures which mirror the federal system of the US. The increase in funding supported this change, but it has the benefit of making tobacco control advocacy groups more competitive for further funding.

Outside of a few well-funded advocacy organizations, the situation is drastically different. Funding is often insufficient for many organizations contacted through this project:

“there's so many stories you hear of, like in San Francisco with the flavor ban ... and how much money is spent from the big tobacco. It's just crazy ... right now it's like a mouse fighting an elephant ... when it comes to money.” (P26, VA, Tobacco Treatment Specialist)

While funding opportunities for non-profit and advocacy organizations were abundant, the situation for public health professionals was very different. State tobacco control programs generally rely heavily on funding directly received from the state government or grants obtained from federal government agencies. Similar to foundation grants and donations, governmental

grants follow a funding structure that is top-down rather than bottom-up. A key difference is funding from state and federal sources is not generous when provided. An interviewee from Colorado describes how financial resources needed to be pooled across counties for a coordinator position:

“when Tobacco 21 kicked off, I was a health promotion coordinator. And 90% of my time was spent on tobacco ... it was funded through our state tobacco grant. And that time was not only for Eagle County public health, where my position resides, but also for Pitkin County and Garfield Counties. So, all three of our counties pool our state tobacco funding in order to find a position just because of the salary required and how little we actually get from the state. So it's a pretty big territory.” (P5, CO, Local public health)

While funding was an ever-present concern for public health agencies in both states, Virginia public health in particular was not only underfunded, but not funded at all by the state:

“we are one of the few states that does not receive any state funding for the [state] health department, the tobacco control program. Most tobacco control programs receive funding from either the general funds or the Master Settlement Agreement or from tax dollars to support their tobacco control program. And Virginia receives none. Now, the Virginia Foundation for Healthy Youth, which is focused strictly on under 18, does operate with Master Settlement Agreement fund for the small proportion of the funds that come in for that. But the tobacco control program receives nothing ... [in] very few states that's the case ... It varies a little bit here and there because somebody will get funds cut or added or whatever, but very few that receive nothing.” (P28, VA, State public health)

Being underfunded, or unfunded, has several implications for public health professionals. First, lack of funding increases the probability the organization will not be able to fulfill all tasks assigned by the state legislature. While focusing on necessary public health tasks like surveillance, the likelihood that other tasks are not completed or are completed poorly increases, potentially impacting the health of the population. Relatedly, resource-intensive tasks like education or advocacy are reduced or not possible. As the public health departments rely on the government for funding, bureaucrats need to prioritize what the state and federal funders choose to focus on to achieve larger public health goals (P25, VA, Foundation).

In Colorado there was far less discourse around being underfunded. Conceivably this is related to another funding mechanism that Virginia does not have: tobacco retail licensing [TRL]. The financial benefit of a TRL policy revolves around the licensing fee retailers pay for the privilege of selling tobacco products. If the fee is set at the right amount, it should generate a self-funding tobacco control enforcement mechanism so public health organizations do not have to worry about budget cuts or insufficient state and federal funding. In addition to fees, fines for retailers out of compliance can also be utilized. One participant was quite clear that the funds from TRL at the local level could be quite beneficial to the local government:

“You don't have the tobacco retailer license? ... Do [decisionmakers] have any idea how much money you can get?” (P2, CO, Local decisionmaker)

Across the nation there is no doubt that funding is a key component in politics at all levels. Public health program professionals are continuously seeking ways to maximize the funding support received to fulfill the education, enforcement, and prevention tasks which policy requires of them.

3.3.2 Capacity

Funding situations often directly impact the capacity of an organization to be adaptable and effective in their mission. Capacity in this sense is the ability of an organization to partake in advocacy. Funding is key for lobbying and political contributions, but funding is also a resource which builds the capacity of organizations. In the prior section, it was noted that over time tobacco control organizations have evolved to be larger, more professional, and federated in a way which mirrors the federal system of the US. Increases in funding support enabled the organizations to change and grow. CTFK is an example of this type of advocacy organization, having a strong national level base with regional coordinators. Other examples include the

American Cancer Society [ACS], American Lung Association [ALA], and American Heart Association [AHA]. Using a top-down approach, the national level organization coordinates with regional or state-level offices (P14, CO, State public health). This organizational structure creates a strong support network and connections across states which can be utilized to increase capacity at the subnational level. While the resources and capacity of national advocacy organizations are greater than organizations limited to the state and/or local level, there are limits to what the national organizations can provide. Therefore, organizations managed at the national level must strategically plan which areas of the US to focus on and what policies to promote. State and local tobacco control advocates compete for the attention of these various organizations as they have the resources and ability to mobilize support for policy change (P1, CO, Local public health; P4, CO, Local public health; P5, CO, Local public health; P7, CO, Local public health; P8, National, Advocacy org; P9, National, Advocacy org; P16, CO, Advocacy org; P28, VA, State public health):

“that can be a strength, I think, as we're moving forward and with the work that we're doing [with the coalition] ... everybody working together ... The big four [have the most influence]. So that's Campaign for Tobacco-Free Kids and [American] Heart [Association], [American] Lung [Association], [and American] Cancer [Society].” (P26, VA, Tobacco treatment specialist)

Given the nature of the US federal system being both fragmented and federated, this means that while there are states and localities which receive the attention and support of the large tobacco control advocacy organizations, there are also many who do not. Without these connections and accompanying resources, the capacity of organizations to achieve policy goals is significantly diminished. While the coalition in Virginia with the ‘big four’ was initially successful (P28, VA, State public health), eventually the support from the national organizations decreased. A participant described the difficult policy environment in Virginia under Dillon’s

rule and a lack of funding. National organizations could be helpful to causes in Virginia, but the interviewee recognized that the advocacy groups may not prioritize the state:

“Let's just say between Dillon's rule [and] no Virginia State funding whatsoever for tobacco control, it's quite a lot of chips stacked against you. So, we will continue to kind of coordinate and organize, which is why the coalition provides some of the greatest strength to what we're doing in Virginia, because recently [the Campaign for] Tobacco-Free Kids, nationally, American Lung [Association], they have good money, they do good work, they have good people. But as a small part of your region [and] as a small part of the nation, there's only so much attention they can give to what goes on in Virginia or Richmond.” (P22, VA, State public health)

With the challenging policy environment, insufficient resources, and general lack of support from leading national organizations, the capacity for state organizations in Virginia to resist an industry-funded effort was nearly non-existent:

“somebody mentioned the T21 law, and somebody said, “Yeah, we didn't have anything to do with this.” And then I started diving into the details ... it just sort of moved on its own. It's the kind of bill that I think if Virginia had more mobilization of tobacco control partners and public health partners, they would have tried to kill it. I just don't even know if it even got to that point ... we don't have the infrastructure to be responsive to bad bills. So in states in the Southeast ... don't have funding or very little funding to do local work ... we don't have a network to sort of step in and go, ‘this is terrible, can we not allow this?’ And certainly, we have to have a really good network, in any other state, we'd have to have an exceptional network to be able to trump Philip Morris and their money. But ... we barely have anything.” (P11, VA, Non-profit)

It is difficult to mobilize state partners who lack resources or national organizations which are focusing on advancing efforts in other parts of the country. By contrast, in Colorado, there was much more support from CTFK, ALA, AHA, and ACS. During the T21 effort, all were present and on the executive committee of a coalition. Together with state-based organizations, the four main advocacy organizations joined forces to pass a comprehensive T21 policy (P16, CO, Advocacy org; P17, CO, State decisionmaker). Since that time, the national organizations have shifted focus elsewhere, but still have a presence in Colorado:

“over time, the other partners have had to [leave] ... each of them had their main focus [as] Colorado [previously]. Now the person for American Lung Association is based out

of Arizona and the person for American Cancer [Society] serves multiple states. [American] Heart Association, I think they ... have somebody connected that's Colorado focused. But the Campaign for Tobacco-Free Kids, they've got their person for multiple states liv[ing] in Colorado. And so probably means that she really focuses on Colorado. I think she serves these other states. But we get a lot of her attention.” (P14, CO, State public health)

With one of the CTFK leaders residing in Colorado, this could possibly explain why state and local level T21 efforts were so well supported (P1, CO, Local public health; P3, CO, Local decisionmaker; P5, CO, Local public health). Another interviewee at the state level discusses the importance of having an individual who is part of a national organization having local context:

“I think [the local CTFK person] has a deeper understanding of the local communities here. I mean, thinking ... politically and most likely to [pass a policy] ... I'm just going to go out on a limb here and just say that as a state health department working directly with local health departments, how important it is that national organizations who were working in Colorado were and I've been a part of the tobacco control network as a regional representative, and I hear that from a number of states that really having a strong partnership ... a really strong understanding about... how the process needs to work in each state with input from all the players ... is critical. And sometimes there's competing agendas ..., if we go all the way back to [PTAF], [they] had an agenda of ‘I'm going to pass tobacco 21’. We were a state looking at removing preemption, seeing the importance of tobacco retail licensing, and it felt like that there was, there was alignment, but ... wanting to have those partners with their resources and their understanding work in conjunction.” (P15, CO, State public health)

The implication at the end of the statement is that PTAF did not have that local or state understanding of Colorado before starting work in Aspen. Not only was it important for CTFK as an organization to have regional leadership, but it also added to their capacity to be successful in Colorado. Location matters in advocacy, with Colorado having an advantage with a regional CTFK leader while Virginia was disadvantaged by having Altria located in the capitol.

Public health organizations in Colorado also had an advantage over Virginia organizations as they had more funding and therefore were better able to hire staff and create resources. Neither program is well-funded, though, with Colorado receiving \$26,772,491, just over 50% of what the level recommended by the CDC (American Lung Association 2023a),

while Virginia receives \$13,712,901, 15% of what is recommended (American Lung Association 2023b). However, the funding advantage likely increases the capacity of public health organizations to participate in advocacy. The greater capacity of the organizations themselves may make it more likely that national organizations are willing to assist in local or state efforts. There was also a county health department which was able to conduct its own research with its own staff and partner organizations. Rather than relying on materials from national advocacy groups alone, this health department had capacity to review scientific articles and provide the best resources possible to their community and local decisionmakers:

“we might use [American] Lung Association or [American] Heart Association if we know that those policy makers are allies with [the associations] or highly value the information from [AHA] or [ALA] ... or like Campaign for Tobacco-Free Kids, for example that might be a good [resource] or the Truth campaign, depending on ... the audience. But we also do go and look at the literature and try to pull some things together. We've created some fact sheets that were literally like briefing papers that combined multiple sources for findings.” (P7, CO, Local public health)

This ability to do independent research and create materials allows the local health department to not be dependent on national or state resources, which can be powerful for local policy passage. Comparatively, in Virginia, another interviewee discussed how being part of a university system allowed a partnership with a researcher to be leveraged when local organizations did not have capacity for research:

“we have a new ... researcher over on the on the academic side and she's really focused on tobacco cessation and tobacco and cancer ... [it's] nice because we don't have the time to do literature research and such. And so oftentimes she can get students and stuff to help do that. The lit[erature] reviews, which then ultimately will help us more down the road too.” (P26, VA, Tobacco treatment specialist)

In addition to having capacity for research, there are other key roles that some organizations are able to support while others cannot. Part of the reason advocacy organizations are more effective with legislators is that they have dedicated positions for grassroots

mobilization, but also have fundraising and other growth-focused positions which health departments and other organizations lack. Positions titled “grassroots developer/manager” and [others] are examples of this phenomenon.

Additionally, with a lack of funding, organizations need to rely on voluntary work, which is unreliable. One participant noted that the statewide coalition in Virginia is comprised of professionals volunteering time and not having dedicated (paid) time to effectively use the coalition as a network to spread information:

“But what I've learned also, being not in advocacy, is that things happen so fast that by the time you try to get the message and then out and it has to happen so fast, and [in TFAV] everybody's volunteers, they don't have that dedicated time that would be needed to just focus on that. And who's not to say in the future we won't.” (P26, VA, Tobacco treatment specialist)

Beyond partnerships with other organizations and voluntary work, some organizations established contracts with other organizations to build capacity:

“University of Colorado ... they have a contract with us to provide legal and policy technical assistance to all of [the] grantees [across the state].” (P14, CO, State public health)

In general, local and state public health organizations were limited in capacity to advocate due to a lack of funding, but also by advocacy restrictions from state or federal funders. This is exemplified by a government employee discussing how national advocacy organizations are relied on to do “actual advocacy” while state employees work through programmatic details with the legislative sponsor:

“The ... legislative committee. It's American health, lung, and cancer. It's VDH [and two other state government agencies]... so we [the government employees] are really the ones that were involved working with [the delegate] who is the sponsor of the Clean Act bill... [the delegate] relied on us to put forth ... what it needed to say and what it needed to look like... But when it comes to like actual advocacy stuff, we rely on American Heart [Association], [ALA], [ACS], they're the voice [for that bill] as well as tobacco 21.... [they are] the voice for all of us ... [be]cause, we [in the government] all receive state funding, or federal funding? ... our hands are tied.” (P23, VA, State public health)

While it is not entirely clear what “actual advocacy” entails, the state employee was likely referring to only being able to give information without being permitted to take an official stance or promote a specific policy. In addition to the prior quote about the statewide coalition in Virginia (TFAV), other members of the coalition confirmed government employees were very limited:

“half the people on [coalition] calls are state agency employees. They can't lobby. It's ... illegal with their job so they can get on these calls, but they can't come down [to the capitol] and lobby. They could be if they were in a committee room and they were asked a direct question. They can do that, but they can't lobby ... in some of these [nonprofit] organizations... [a member] gets on the call- she's great, she's articulate. I'm like, 'Hey, when are you coming down?' 'Oh, we don't lobby.' So they're a nonprofit organization that works in the tobacco control space. But they don't lobby. What do you want to do? We can get on all these calls, [but] I need people and bodies” (P27, VA, Consultant)

As noted by the interviewee, having state employees is important but limits the amount of organizations on a coalition which can participate fully in advocacy work. Additionally, at least one nonprofit organization stated they did not lobby. Tax structure also impacted organizational capacity to advocate to an extent. Like the nonprofit mentioned, there are 501(c)(3) organizations who believe they cannot lobby or speak to representatives while it was clear 501(c)(4) organizations could. As mentioned in the two previous quotes, collaboration as part of a coalition can allow coalition members who can fully advocate do so on behalf of the organizations who cannot. However. If the coalition is small and not many organizations can, or are not willing to, speak directly to legislators and lobby, then the strategy is not effective. Another interviewee, from a 501(c)(3) organization, provided the opposite scenario where a larger coalition and strong lobbying partners were able to compensate for organizations who could not advocate fully:

“that's the real benefit of having like a big coalition like that too ... a lot of [nonprofit] organizations like us have restrictions on lobbying and what we can actually do. And then when we partner with organizations that have those skill sets and those resources

available to them, it just really broadens the effect, like how much the coalition can get done the more people that are at the table.” (P9, National, Advocacy org)

However, CTFK, PTAF, and other primary groups involved in leadership with legislation and lobbying partook in these activities despite being 501(c)(3) organizations. It is unclear why this was the case and what factors led and allowed some 501(c)(3) organizations to participate while others did not.

Beyond organizational capacity of tobacco control advocates, legislative professionalism also played a role in the capacity of decisionmakers. Colorado has a part-time, citizen legislature (P20, CO, State decisionmaker) and so does Virginia (P30, VA, State decisionmaker). However, Colorado is year-round (P19, CO, Legislative staffer) while the Virginia legislative sessions are very short (P28, VA, State public health) (University of Virginia State Government Relations 2023). With state legislators busy schedules, organizations stepped in to not only propose policy language, but also monitor and mediate the process of passage.

The extent to which a legislator will rely on organizations to provide information and policy language varies depending on staffing and personality:

“some representatives ... tend to be more self-sufficient and do ... a lot of their own homework, their own research and that sort of thing.” (P19, CO, Legislative staffer)

When legislators did accept guidance from advocacy organizations, these organizations offered materials, policy language, lists of supportive organizations and individuals, and even assistance with advancing the legislation to other members of the legislature. As an example of this, a representative sponsor explained that proponents (advocacy organizations) often had the role of identifying and recruiting sponsors for tobacco control legislation:

“proponents obviously were, you know, [American] Lung Association, [American] Cancer [Society] ... some child advocacy groups ... I can't even remember who the sponsors [in the Colorado Senate] were ... they were they were brought on board by some of the stakeholders, the proponents of the bill ... this is how it will typically work. You'd have [representatives] work[ing] on a bill and they'd say, ‘Oh, they're working on this’. And they would approach senators that they thought would look like that over there.

And they said, ‘Oh, do you want to be on as sponsors?’ And you would say, ‘yes’” (P17, CO, State decisionmaker)

However, it was not only tobacco control advocates who legislators rely on. In Virginia, Altria was the key stakeholder driving the legislative process and identifying potential sponsors:

“some of [the] stakeholders early on were some of the actual tobacco companies, and they were looking to make sure that this was a bipartisan effort because it was such an important issue. And I don't know if I drew the short straw or what, but they came to me, and it's largely because I have a track record of being able to get things done in a bipartisan way ... I represent the city of Richmond and Altria's headquarters were in the city of Richmond ... so I guess it was a pretty good match.” (P30, VA, State decisionmaker)

Altria was not just part of the process; Altria had written the T21 bill and then proceeded to introduce it on behalf of the primary sponsor. Essentially, Altria had done all the work, even recruiting professional medical groups to voice support for the legislation (P27, VA, Consultant). All that remained was finding legislators willing to pass the prewritten bill (P22, VA, State public health; P23, VA, State public health):

“when Altria came to [the sponsors] and said, “We'd love to put this bill in” and not one person, not one person [thought twice about it] ... all these people were convinced that they were doing ... a godsend. So but as soon as I heard it, I was like, “well, of course they want to do this. It makes them look good.” And ... They don't care ... literally. So it's presented in committees the [sponsoring] senator's on. It's like “I could talk about this bill, but, you know, who really should do it?” And then he literally introduces the Altria person ... it was just such a surreal moment and once again nobody? Nobody thinks that like, [this is wrong] ... really?” (P27, VA, Consultant)

Strategically, the Altria T21 bill was not introduced until the very last days of Virginia's short legislative session:

“We have a short legislative session that is like 60 ... [or] 90 days ... much shorter than a lot of other states. Anyway, the date to introduce legislation for that session was coming up and we were working on whatever else we were working on the year of and not even thinking about tobacco 21. And suddenly there was a bill that arrived like the last day or the day before the last day ... you could put the bill [in]- that was the Tobacco 21 bill. As we looked into it, we very quickly learned that the legislator who put it in is a legislator who's closely tied with Altria ... we knew the research, that just changing that number [the age from 18 to 21] wouldn't really make any difference. They clearly knew the

research overall. So that is exactly what [Altria] had done” (P28, VA, State public health)

Due to the timing of the bill introduction, public health advocates were not prepared to educate on the issues with the Altria T21 bill. Additionally, as discussed above, the tobacco control advocates did not have the capacity to stop this bill once it had been introduced. Instead of opposing the bill, a number of organizations chose to remain neutral as it was too difficult to explain the nuances of what was wrong with the industry-written bill and how it did not align with best practices:

“They [Altria] were smart about their timing of it ... I remember a couple of people I talked to with the Foundation for Healthy Youth ... [we] just [tried] to stay out of it... I remember [American] Cancer [Society], particularly, they were more [of] the face of the group that was speaking to the newspaper and media, and they took a position opposing it. Well, that's really hard to explain in a soundbite, like, why the heck is the American Cancer Society opposed to the bill for the general public to have any comprehension of why that made sense? It didn't make sense. It just didn't ... if you're into the weeds, it does, but it didn't [to most people]. So it was a really hard position for them to be in, for us to be in.” (P25, VA, Foundation)

At the local level in Colorado, decisionmakers were only serving part-time as well and needed assistance. In this study, the tobacco industry did not interfere at the local level, only at the state level. Instead, local public health, along with state public health, collaborated to craft model policy language and act as a resource for local decisionmakers. As professionals in public health, they are recognized as experts in their field which decisionmakers rely on. One decisionmaker described how a local public health partner adeptly provided alternative policy language when the local police department preferred to prioritize education for retailers over punishment when they violated the policy:

“our police chief was pretty big on having the ability to issue warnings over actual violations. So we changed the language in the code to allow for that. So, [our local public health department partner] ... provides all this pretty written language for us to adopt. And that was one of the items that we changed was to give our police department the

ability to give a warning as opposed to, ‘hey, it’s an automatic ticket’ because our local police department is big on education first.” (P3, CO, Local decisionmaker)

In addition to allocating resources and technical assistance, some local public health professionals went further and requested their city council take up T21 as an issue:

“The county seat [for Jefferson County] is right here in Golden so you end up having a number of folks who work for Jefferson County Public Health. And then you have other folks in the community who work for hospitals or doctors ... and education advocates. And often my impression is that network is ... coming together to push ideas for the city of Golden ... So they we’ve got a lot of smart public health people who come together and lobby the city council to take up these issues. And that’s what happened here. We had at the time one of our former councilors who works for a public Jefferson County public health ... certainly people in the community who are real experts on those things. I listen to them, especially when there’s a large group of them ... So really these public health experts who are coming forward and have these initiatives, these ideas and ... they did a really good job of coming and speaking at public comment, they had draft ordinances and material and things ready ... They had really done their homework ... in a way that really makes it easy to pick it up and say, ‘let’s do this’.” (P6, CO, Local decisionmaker)

In this case, the public health professionals were not acting on behalf of their jobs, but rather as local residents. Nonetheless, they were respected by the council due to their work positions. While the capacity of organizations funded by the state or federal government to advocate for policies is restricted, individuals are able to represent their views as residents of a particular jurisdiction (P6, CO, Local decisionmaker; P11, National, Advocacy org).

3.3.3 Perceived Representation of Constituents

From interviews, it seemed that being part of the public health workforce or dedicated to a public health cause made individuals believe they were representing the public interest (P8, National, Advocacy org; P9, National, Advocacy org; P14, CO, State public health). One interview summarizes this phenomenon across the field of tobacco control:

“kids are being protected and they’re doing the right thing in the public interest, which most people support. And [people] might have, depending on their political orientation, different ways that they think it ought to be done. But if you talk to most conservatives or liberals, they want the world to be a better place within their ideological frame ...

basically, the argument ... is [that there is] already a strong public consensus supporting a lot of these policies ... people tend to think there is less support for it than there is. And so one of the strategies that the tobacco 21 people use ... everybody else uses, is to try to make it clear that, in fact, most people want to see the public health policy put in place. And on the other side, the tobacco companies just do their best to obscure that fact and to try and make it look like the policy is more controversial than it is to try to scare the politicians away ... once you manage to get the policy put in place, not only can you start accumulating evidence that it works, but also you start accumulating experience that in fact, this is politically popular and that the politicians should do it. Brownie points with the voters.” (P13, National, Academic)

Non-elected professionals appeared to “represent” the area covered by their organization, particularly at the state level. Polling was a way to indicate support for policies rather than town halls or direct conversation (P16, CO, Advocacy org). Decisionmakers also relied on polls to understand what their constituency thought of proposed policy:

“we had some polling come out that says across the board upwards of 60% of Coloradans left, right, and center were in support of keeping legislation like this that kept it out of the hands of kids ... Making sure that we utilize that that public sentiment that is documented ... 60% even in some Republican counties ... This doesn't have to be a partisan issue. And that's why we're lucky to have ... a Republican to say, look, ‘this is [affecting] everybody and ... you want to maintain freedoms’. We get that. And we're not taking away the right to use tobacco. It would just be more regulated.” (P19, CO, Legislative staffer)

However, it is unclear who was providing the polling information or how the survey was conducted. While polling can directly ask how constituents feel about a given policy and provide information which other sources cannot (Keeter and Pew Research Center 2023), there are many issues with polls. Depending on how a poll is conducted, the questions can be quite limiting (as simple as agreeing or not) and the people reached may not represent the general public at all (Zumbrun 2023). Besides polling on the specific policies, public health officials would share their understanding of an issue with supporting data (P4, CO, Local public health; P5, CO, Local public health; P7, CO, Local public health; P11, National, Advocacy org; P12, National, Advocacy org; P14, CO, State public health; P20, CO, State decisionmaker; P25, VA,

Foundation). One interviewee explicitly referenced Kingdon’s multiple streams approach when explaining how data and resources were used to get T21 and other policies onto the agenda at the state or local level:

“we always talk about the policy windows, right? ... when I'm communicating ... why we are putting unifying themes together, why we are building these resources [for local public health], all of that, is this idea of locally you might ... have a policy window. So, when the 2017 Healthy Kids data ... came out and we saw that we were at 25%, a quarter of our youth were using vape products. It was like all that preparation [became useful] ... because policy is hard, convincing people when there's not a problem right in their face ... [that] we need to do this [policy] work ... that's hard work. We lose people all the time as a result of that ... just showing [localities] ... what the end goal is going to be when that window opens, I think is [important]. ...never pass up a good opportunity for a good crisis. (P15, CO, State public health)

Interviewees additionally stressed that policies were “evidence-based”, and part of their role in public health involved providing evidence to decisionmakers (P4, CO, Local public health; P5, CO, Local public health; P6, CO, Local decisionmaker; P7, CO, Local public health; P8, National, Advocacy org; P9, National, Advocacy org; P11, National, Advocacy org; P12, National, Advocacy org; P13, National, Academic; P19, CO, Legislative staffer; P25, VA, Foundation). One interviewee described the view of their advocacy organization as focused explicitly on promoting evidence-based policies:

“[Evidence is] the basis of everything we do. You know, we believe in science first ... we didn't consider anything that's not evidence based. And then kind of our process for anything tobacco included is we look at the evidence and then we're like this is what seems to work, and then we start to think if that is politically possible ... we're really lucky in the tobacco space because there is a lot of research and there is a lot of evidence and a lot of states have enacted tobacco control policy and so it's none of the areas where we work actually just like a huge body of evidence ... I like tobacco because it has so much research compared to some of the other things we work on.” (P16, CO, Advocacy org)

What was more convincing, however, were personal stories from individuals, often hand-picked by the organizations themselves. Public health groups and advocacy organizations were keen on inviting politically influential individuals and groups to participate; in particular youth,

parents, middle and high school staff, and medical professionals (P3, CO, Local decisionmaker; P8, National, Advocacy org; P11, National, Advocacy org; P12, National, Advocacy org; P15, CO, State public health; P26, VA, Tobacco treatment specialist). These categories were recruited at the local level:

“We had parents, we had the school counselors and school district staffs talk about, you know, what they were seeing in the schools. We had youth organizations. And we had ... health care providers speak as well.” (P5, CO, Local public health)

As well as at the state level in Colorado to signal support when a bill was being introduced:

“When we first unveiled this bill in a press conference, we had teachers there, we had moms there, and we had a nurse there. We tried to cover all the bases and they're all saying the same story ... especially seeing the frustration of the mom that we had. She just had handfuls of all this crap that she had confiscated from her kids” (P19, CO, Legislative staffer)

Stories from parents and schools resonated with decisionmakers and doctors were regarded as experts by politicians (P11, National, Advocacy org). The information and anecdotes from these key citizens factored into not only the decisions made by legislators and city councils, they also inspired policy champions to persist in passing T21 and, sometimes, seek other tobacco control policies:

“You don't raise the age to 21 because you're trying to stop 50-year-olds from smoking. You do it because of teens ... this was part of the flavor conversation this year. The school districts were in strong support. And, you know, part of the argument that they said is, like, if you just walk across any middle school parking lot and you will hear the crunch underfoot of Juul pods.” (P20, CO, State decisionmaker)

Advocacy groups strategically used past experiences in legislative battles and aimed to recruit the most impactful testimonials (National, Advocacy org; P12). Sometimes, this would include personal stories from tobacco control advocates (P1, CO, Local public health), all with the goal of expressing the issue of youth tobacco use, primarily vaping:

“ [a government employee’s] son started high school and she was like, ‘are you excited?’ ... he got really serious and he was like ... ‘I’m nervous somebody’s gonna want me to Juul in the bathroom.’ ... I almost started crying ... if enough parents can get angry about that ... Altria wouldn’t have a chance... I would say right now the biggest thing is engaging parent groups and angry parents. Unless you got some hundred million dollars I don’t know about, getting the parent groups involved [makes] a big difference.” (P27, VA, Consultant)

As noted by the interviewee above, and many others, the personal experiences of these key groups could sway decisionmakers more than money, evidence, or other resources. Of all the groups, decisionmakers in this study confirmed that youth voices in particular were effective (P3, CO, Local decisionmaker; P6, CO, Local decisionmaker) and compelling:

“We’ve put [T21] on the agenda. The student group did their presentation ... And we move forward, I think unanimously ... I was not thinking I was going to vote in favor of it, but their presentation was so compelling ... because of their own stories ... because I don’t care how old you are. I think you can all remember peer pressure.” (P2, CO, Local decisionmaker)

This youth engagement was sometimes led by education partners (P6, CO, Local decisionmaker), but more often it was tobacco control advocates seeking youth input. Many interviewees conveyed how proud they were of the youth they invited to speak on the vaping issue and trained to talk to decision makers about policy issues (P25, VA, Foundation):

“young people ... actually came to council meetings and said, ‘yes, this data reflects reality ... because I’m able to walk in and buy them even though I’m 16’ ... [we] left it up to the youth to kind of decide how they wanted to educate on licensing when they when they spoke to councils, [and] when they wanted to educate on licensing and tobacco 21 ... we worked closely with Campaign for Tobacco-Free Kids. They were great in terms of ... talking points and helping coach kids [to speak to decisionmakers], and advocacy as well.” (P5, CO, Local public health)

As mentioned in the quote above, recruiting youth and other targeted groups was often done across groups, with coalition partners helping to ensure local and state efforts had speakers to support T21.

While youth and parents were identified as likely to have great testimonies, there was another group which had the potential to be strong advocates, but not actively recruited: people who formerly or currently smoked. There were only a few examples in this study, such as a decision maker who smoked multiple packs a day (P12, National, Advocacy org), there were also citizens willing to get engaged to prevent youth from facing addiction as they had. In Aspen, one educator who previously smoked was able to advocate for T21 and inform the school about it after passage:

“with tobacco 21 ... the high school principal, I went and talked to him personally. He had been a smoker and he's like, ‘I'm behind you. What can I do to help?’ And I was like, ‘Can you come to city council?’ And they have like a three-minute time period that they can present anyone in public. So he did ... And he was really key in dispersing that throughout the high school.” (P1, CO, Local public health)

In Texas, a national advocacy group revealed that a group of veterans became an unlikely ally as they discussed the impact of the military tobacco culture on themselves and their families:

“Veterans also came out to support this particular effort. And in San Antonio, the military community is a really big deal. And often you'll get the argument like, ‘I'm old enough to fight for my country. I should be old enough to buy a pack of cigarettes.’ And we had a really great group that ... just talked about, the impact of smoking on their own health, the health of their families, and how, if they had not had ready access to cigarettes at the age of 18, that would have helped them quite a lot and not started their path of addiction in terms of being addicted to nicotine, which I thought was really fascinating. It was a great example ... giving voice to that lived experience to counteract an argument that [often] gets a lot of traction.” (P8, National, Advocacy org)

As the interviewee mentioned, this veteran group was key in counteracting the argument that all military members should have access to tobacco. It is unclear why past and current tobacco users were not recruited, but perhaps it was the choice of tobacco control advocates to focus on youth. Additionally, as mentioned previously, some organizations were focused on vaping among youth and the message from cigarette or other tobacco product users would not fit in the argument the groups were presenting to decisionmakers.

Considering organizational goals and related messaging, it became clear that some organizations were focused on certain policy goals and would not compromise on certain ‘deal-breakers’. For some organizations, there were certain areas where they would “hold the line” and not allow a bill without funding, enforcement, or other aspects to pass:

“we keep referencing our best practices are our minimum standard provisions. That was a clear value that we needed to make sure that because the industry was pushing that our money ... prevention, education, cessation dollars would go to enforcement. And we're like, no ... you needed the privilege of selling tobacco and it needs to be a self-funded system. It's not ... using prevention money ... And that is one of the things I hear other states not holding the line on that ... It may seem politically feasible, but that's a really good sign. That's what you should not do.” (P14, CO, State public health)

Resisting industry efforts was a priority, if organizations had the capacity to do so effectively. Part of the strategy also seemed to be putting in a strong bill at the start of a session and then advocating to keep key policy aspects in place (P19, CO, Legislative staffer). Coalitions were typically united in this goal. However, there were a few organizations which were unwilling to compromise on certain points and seen as preventing progress at the state level for organizational goals which did not align with the rest of the coalition:

“[There’s] always ... differing opinions. I mean, I think a lot of the tobacco control folks, like [Campaign for] Tobacco Free Kids ... obviously when we were talking about the fines and fees ... they wanted them as high as possible. And some other folks in the coalition were like ‘if it's the difference between passing it and not, it's fine to have it on the same level as alcohol’ ... I kind of came down on that side. Just because ... I don't want to put anyone selling nicotine out of business, just want to keep it out of the hands of kids. Whereas I think, there were some other folks in the coalition who were like ‘no, people have to stop selling nicotine ... that's just fine with us.’ it can be a delicate balance, but I think [the policy package] ended up in a fine place and I think everyone felt okay about it in the end.” (P16, CO, Advocacy org)

In addition to being out of step with partner organizations within the state, organizations can jeopardize relationships with decisionmakers by opposing legislation which does not align with their standards or preferences:

“[FDA had] all these new products [they were] going to have categorize so [states] can tax them ... So [a delegate] put in a bill to put the new FDA categories into the code so we could tax them when they come out. Well, Cancer (ACS) wanted to stop it and ... it was actually pretty embarrassing The director of government relations for ACS up and said, ‘you can't do this.’ And Delegate Keen was like, ‘Sir, I think you should read the bill again.’ He was like, ‘I want to. I want to tax them up the hills. We can't do that. Look, I'm trying to help you.’ ACS didn't see it that way. They were just ... trying to ... block anything.” (P27, VA, Consultant)

This happened in both states, with sponsors of tobacco control legislation ending up frustrated with advocacy organizations which they had hoped would back them and compromise to pass the policy:

“if it had just been vape, there would have been a really vocal group of small business owners who just sell vape juice like that's their business. They would have fought that really hard, but they would have lost, that bill would have passed. But the group that hired the lobbyists that were working on that bill would not accept that compromise. They were not going to do it ... because lobbyists have an inordinate amount of power in the Colorado legislature- in large part because of term limits- the bill just died. It didn't get amended to something that would have flown through and been totally reasonable and would have gained bipartisan support ... it just died. Because the proponents of the bill weren't willing to compromise. And when I say proponents, I don't mean sponsors ... the outside interest groups ... it was actually like a group of moms. I think there's a group of I think it was it was a combination of a group of moms and maybe Bloomberg money? I don't know ... the biggest spender was some kind of national interest group or like just a super wealthy, dedicated mom here in the state. Or maybe a combination of both.” (P20, CO, State decisionmaker)

Regardless of which organization the decisionmaker was referencing, it is clear that either a small, narrowly focused advocacy group or individual spent significant resources to influence policy in the way they saw fit. Citizens, as political actors, are rarely discussed. Rather, small businesses and larger organizations spoke on behalf of local people. However, across interviews organizations would say how they wanted more grassroots involvement:

“when I hear other states that do really well is because they have a very strong grassroots voice ... states like Nevada ... when they overturned the preemption ... they did this massive, massive statewide campaign. They got grassroots involved. And I think that is where Virginia's going to have to move to make change, because, of course, all politicians listen to their constituents.” (P26, VA, Tobacco treatment specialist)

What interviewees see as grassroots, however, is unclear. This drive for more grassroots support was unique to Virginia and it seems that any involvement of a local group or citizens would qualify as grassroots support. A state official discussed the opportunity for support for future tobacco control policies through Community Service Boards, which supply publicly-funded mental health and substance use services (Commonwealth of Virginia 2020):

“Community Service Board[s] ... they do the heavy lifting. They also are kind of the grassroots for any sort of legislative campaign that we do or that we're planning on doing. We have not utilized them to their fullest potential. But our plan through Tobacco-Free Alliance in Virginia is to do that. Every CSB has a community coalition that they're associated with ... real literal boots on the ground at the community level. And so we're really looking at how to kind of build them up. So next legislative season, when we're doing tobacco licensing again, we can really have a true grassroots campaign where we're utilizing people at the community level to talk with their local legislators to then kind of make this go bigger. So and kind of build that groundswell of support.” (P23, VA, State public health)

The connection of the state to these boards may be a way that Virginia, a state with Dillon's Rule, can reach the local level. As another state employee discussed, it would be quite unexpected for the average resident to know about any statewide policy effort:

“I think it would have been a very rare situation where just your average resident thought about [tobacco or public health] whatsoever had been exposed to it whatsoever. And the way I see that is, other than like a grassroots population who might have tobacco control as a personal issue killed my mom, whatever it might have been that made them passionate about it, unless they happened to notice [a T1] flyer in the health department when they went in for [services] ... I don't think ... one out of five people might have [known about the effort].” (P22, VA, State public health)

Due to preemption and capacity factors, Virginia has very little opportunity to receive support from the local level. This is in direct contrast to Colorado, where many localities were engaged with T21. While state and local Coloradans did not express a need for more support at the local level, it did seem they had the same belief that any local effort was inherently grassroots if citizens were participating.

3.4 Discussion

The interviews with public health advocates demonstrated that professional organizations still dominate American civic life, providing further evidence for Skocpol's theory of advocacy (Skocpol 2003). While it was expected that there would be less participation from citizens than in membership federations discussed by Skocpol, in this case, the politics of T21 had far less grassroots involvement than expected. The key players in passing T21 across the US so quickly were CTFK and PTAF, small groups which have substantial backing from individually wealthy donors. It could be argued, then, that it was relatively few people who ensured T21 was adopted, regardless of general citizen input. Instead, community participation was orchestrated by advocacy groups as well as public health professionals.

Despite the lack of true grassroots policymaking involving citizens, T21 policies have received great public support- in national surveys a majority of citizens (Lee et al. 2016), as high as over 70%, supported raising the age of sale for tobacco to 21 (Winickoff et al. 2016). Additionally, studies have found that statewide T21 laws are effective and achieve the goal of reducing tobacco use among minors (Bryan et al. 2020). However, the popularity with the public and evidence of policy success does not compensate for the lack of civic engagement in the political process itself.

PTAF was founded by a doctor who began the T21 movement and continues to lead the organization to advocate for tobacco control policies (Preventing Tobacco Addiction Foundation 2023c). Many of the individuals who were key to T21 expanding across the US were medical professionals. Studies have found patients overwhelmingly trust their doctors to create policies for them and believe other political actors lead to a flawed healthcare system. However, this applies to policies which impact a doctor's ability to provide an individual care without

cumbersome restrictions and may not extend to public health policies (Eric M. Patashnik, Alan S. Gerber, and Conor M. Dowling 2017). Rather than originating from medical associations speaking on behalf of a large group of doctors, T21 is instead the result of an individual doctor on a mission. T21 was seen as a success by public health due to the popularity of the policy and evidence of its effectiveness across states. From the perspective of democracy, however, the process of passing T21 was quite flawed.

Political lessons learned by tobacco control advocates through passing T21 are now being applied to other measures like flavor policies. However, these policies may not have the same fate as T21 as they are not as popular and currently have mixed evidence to support effectiveness. While not as popular as T21 was, a recent study found 58% of rural Californians supported a comprehensive flavor ban while 59% supported a ban of just flavored e-cigarettes (Payán et al. 2023). In 2020, a nationally representative study found 63.3% of respondents were in favor of a ban on flavored e-cigarettes (Czaplicki et al. 2020). For both studies a majority of respondents supported flavor restrictions, especially for e-cigarettes. However, this is still 5-10% less than the estimated support for T21, indicating it may be a riskier policy for decisionmakers.

Though popular with those surveyed, there is limited information on if ‘comprehensive’ flavor bans which “restrict the sale of all flavored tobacco products, including menthol cigarettes” are effective. Part of this is due to how recently the policies have passed: only five states have passed such a policy as of 2023. Massachusetts was the first to pass in 2019, then New Jersey (2020), New York (2020), Rhode Island (2020), and, most recently, California (2022)(Campaign for Tobacco-Free Kids 2023a). While there is some evidence supporting comprehensive flavor bans (Liu et al. 2022; Institute for Global Tobacco Control 2020), other studies question if these policies achieve public health goals (Katchmar, Gunawan, and Siegel

2021; Warner et al. 2022). Despite inconclusive evidence on these policies, various advocacy groups promote comprehensive flavors bans.

These groups include PTAF, CTFK, but also a more recent group, Parents Against Vaping e-cigarettes (PAVe). With flavor ban policies, PAVe is now in a similar role that CTFK and PTAF were for T21. The PAVe founders are not “just parents/moms”; these are parents with money and power (Etter 2021). The vaping company Juul made the mistake of sending a representative to a private school for “education” and since then PAVe has focused on removing tobacco products with flavors as they are more enticing to youth. As San Francisco was pursuing a flavor ban in 2019, PAVe joined a grassroots movement to provide funding and resources. Quickly, though, they connected with CTFK and other organizations, going on to gain support “across the wealthiest enclaves of San Francisco” (p. 335; Etter 2021). Following this, “Bloomberg spent over \$7 million” in San Francisco to ensure Juul’s proposal in California would not threaten a flavor ban in the city (p. 337; Etter 2021). Later in 2019 CTFK and PAVe had a seat at the table discussing tobacco policy, specifically a flavor ban, with President Trump, other advocates, and industry players (Etter 2021). The actions of these advocacy organizations appear far less like public health efforts and more like private elites with ample funding have been, and continue to, lead tobacco control politics.

The funding stream for PAVe and other 501(c)(4) organizations is unclear; compared to 501(c)(3) organizations there is a lack of transparency. While this study has elicited some insights about funding arrangements, more needs to be done to understand the role of various organizations. Interestingly, key players in tobacco control policy (PTAF, CTFK, ALA, AHA, and ACS) are 501(c)(3) organizations. These larger, federated national organizations may know better when they cross into “too much lobbying” and how to avoid that. Additionally, the scope

of ALA and AHA is quite large and have various activities that are not influencing policy, which may shift the balance of how many activities are directed toward lobbying. Given that the proportion of lobbying is a key part of how the IRS determines tax status, this gives an advantage to larger organizations. While ACS (501(c)(3)) and ACS CAN (501(c)(4)) are different organizations which play separate roles, this does not appear to be the norm. Alternatively, CTFK and PTAF may straddle the line, but lean in to providing ‘education’ rather than outright lobbying. But as noted in interviews, education can equate to supplying persuasive data without asking for direct action and is an effective form of advocacy. Alternatively, as also discussed in interviews, organizations may have employees act as individuals, merely another constituent who happens to be professionally involved in tobacco control. This area deserves more attention as a subject of research since it is unclear why some 501(c)(3) are restricted in advocacy while others are not.

The mechanism proposed by Skocpol was correct in this case with memberless organizations pursuing policies without citizen engagement. Her focus on the tax code and funding mechanisms influencing which groups were able to participate in advocacy was also correct. This study expanded on her research through revealing that large donations, more so than governmental or foundation grants, influenced which organizations were key players in spreading T21 across the US. In *Diminished Democracy*, Skocpol relayed how advocacy groups would be incentivized to “go for drama and controversy” and have more intense policy preferences to receive donations from individuals who wanted to see their strong preferences given a strong voice (p. 236; Skocpol 2003). While this holds true to an extent, with CTFK being able to have a stronger opinion on vaping, it is because they have a few, very large funders with that policy preference. As a group, they may not need to rely on smaller individual donations

given the funding received from PTAF and Bloomberg Philanthropies. This has the potential to distance a group like CTFK from the policy preferences of the public and toward the preferences of their largest and most consistent funding sources.

Complicating this, CTFK and PTAF, among other organizations, conduct research, maintain lists of where certain tobacco policies have passed, and create fact sheets. These materials and tailored advocacy resources are used by tobacco control advocates at the state and local level to provide information decisionmakers want to know (Campaign for Tobacco-Free Kids 2023b; Preventing Tobacco Addiction Foundation 2023d). As interviewees described, these resources are especially important to organizations which do not have the resources or ability to conduct their own research. In effect, the advocacy materials provided spread the messages of advocacy organizations further and become the evidence which public health professionals use to form their own policy preferences. As the interviews of this study show, however, it is clear that CTFK and PTAF are not purely informational sources as they have their own advocacy agenda. While the advocacy resources they create are evidence-based, these and other organizations are biased toward presenting evidence that best aligns with their policy preferences. Additionally, these organizations and others collaborate to provide model policy language which becomes the best-practice, gold standard language.

In addition to potentially impacting the policy preferences of public health professionals and the decisionmakers their materials are shared with, advocacy organizations also message directly to the public. As discussed in the results, health education is a core part of public health and so campaigns and messages are tailored to reach citizens generally or specific groups (i.e., parents, youth). Across studies, public health campaigns are effective in achieving changes in knowledge, attitudes, and even behavior (Ilakkuvan et al. 2017; Record et al. 2023; Maher et al.

2014). Given this information, it could be just as likely that tobacco control advocacy groups change public policy preferences to a greater extent than the preferences of the public affect preferences of advocacy organizations. This should be explored further to understand the relationship between citizens and public health advocacy organizations.

With public health having such a focus on education, this may be a phenomenon which expands beyond advocacy organizations to all public health organizations. However, it is likely the organizations with the most funding and capacity to advocate which have the most influence. The national advocacy groups with this influence can not only produce materials and messaging, but the organizations also had the largest influence on the agenda at the state and local level. Given the sheer amount of resources national advocacy organizations could provide, these groups were in the strongest position to lead advocacy efforts. Interviews also elaborated on how many other groups, especially state and local public health organizations, often lacked funding and capacity so a national advocacy group could make a large difference in the ability to pursue a policy at either level. With many organizations needing a national advocacy organization to achieve their policy goals, the agenda of the national organizations was the most prioritized and even displaced state or local public health policy agendas in the process.

Beyond just influencing which policies were promoted, tobacco control advocacy organizations were also instrumental when it came to policies not passing. Given the strength and resources of these organizations, they were also able to prevent passage of policies which contained certain 'deal-breakers' which were not acceptable to the organization in certain cases. However, this could only happen in the national advocacy organization was prioritizing a certain state. For example, in Colorado there was a great deal of effort expended by national groups to achieve what they considered a best-practices T21 law. Comparatively, in Virginia, there was

weak national advocacy involvement so when Altria decided to propose an industry friendly T21 policy, there were no tobacco control advocates strong enough to stop the effort.

Despite the comparatively greater resources of national tobacco advocacy organizations, the groups still needed to strategize which states and localities were most likely to align with their policy preferences and have a favorable political environment. This meant that local, state, and smaller organizations were not only competing for funding, but they were also competing for the attention of national organizations. With the presence or absence of a national advocacy organization having massive political implications and possible policy consequences, the choices of the national organizations impact the entire system in a top-down manner.

In addition to the politics of T21 being driven by national advocacy organizations and not grassroots efforts, it became clear that interviewees did not quite know what grassroots meant. To interviewees who discussed ‘grassroots’ specifically, they seemed to have the impression that any local input meant a policy had grassroots support. What public health professionals did not seem to grasp is that a grassroots movement comes from the bottom-up, from the citizens themselves and not professionals. Avon, Colorado is an example of a grassroots T21 movement and Euclid, Ohio, from a separate study on T21, was also an example of grassroots action led by citizens, the T21 movement overall is not (Jarman, Mendez, et al. 2019).

Citizens, as political actors, were rarely discussed and community engagement was limited to recruiting specific groups. Many interviewees focused on youth engagement, but not on public policy preferences in general. Some youth received advocacy coaching from CTFK before speaking to city council or legislators. Emphasizing the previous point about advocacy materials, CTFK and other national advocacy groups had the finding and capacity to create resources, programs, and training materials which all were possibly biased by their advocacy

goals. Further research is needed to better understand the potential biases in these materials and impacts they may have on individuals who receive the training. In addition to youth, parents, educators, and medical professionals were also recruited to speak to decisionmakers or advocate for policy change. By comparison, a potentially strong ally group, current and former tobacco users, was not recruited by any public health organization in this study. However, the tobacco industry was actively recruiting current users as any member of the general public which opposed raising the age or banning flavored products through signs at tobacco retailers. This juxtaposition highlights how focused tobacco control advocates were on producing a specific narrative. Overall, advocacy groups used their past experience in legislative battles and aimed to recruit and craft the most impactful testimonials. Unfortunately, this selection process explicitly preferred certain individuals over others, thereby limiting civic engagement.

The dominance of national advocacy organizations and lack of grassroots involvement demonstrated in this study is indicative of a larger issue with advocacy best practices in tobacco control and public health at large. In its 2014 *Best Practices for Comprehensive Tobacco Control Programs* guidance document, the US Centers for Disease Control and Prevention [CDC] relayed that “research has demonstrated the importance of community support and involvement at the grassroots level in implementing several of the most highly effective policy interventions” (Centers for Disease Control and Prevention 2014). The guidance document also discussed trainings held to increase grassroots involvement and recommended civic engagement efforts (Centers for Disease Control and Prevention 2014). The strategies used during the T21 movement and being used currently with flavor ban policies were developed as a direct result of these best practice recommendations. In turn, these recommendations were made based on prior grassroots efforts with smoke-free policies and in response to tactics from the tobacco industry

(Kennedy, Gray, and Ballweg 2021; Cheng et al. 2019; Bryant 1999; Lum, Barnes, and Glantz 2009; Cox, Barry, and Glantz 2016). As mentioned by an interviewee, however, tobacco control has changed dramatically in the past few decades and has become more professional. The professionalization of the tobacco control movement to become more effective has now created distance between citizens and policymaking. New efforts are needed to close this gap if public health professionals truly want grassroots support from citizens at large. If advocates continue to cherry-pick which citizen voices are heard, it can have unintended consequences, some of which are already recognized and documented (Jarman, Kiessling, et al. 2019; Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, and Office on Smoking and Health 2020). Two specific unintended consequences of T21 were detailed by interviewees in a report called *Community-based Action to Advance Health Equity in the Tobacco Control Movement*. Interviewees expressed concerns about Native Americans under 21 not being able to practice ceremonial and religious tobacco use as well as the potential for youth in marginalized communities to be targeted by minor-in-possession laws which remain in place in some states (McClelland-Cohen, Han, and Dildine 2020). To achieve greater health equity and avoid unintended consequences, tobacco control and public health advocates should spend more time considering who is involved in coalitions and advocacy efforts and whose voices are being left out.

As Skocpol acknowledged, “Not every civic association, old or new, needs to become a full-fledged membership network” (p. 275; Skocpol 2003). Rather, she suggested partnership between membership organizations and professional organizations. The issue with this solution in tobacco control is that the overwhelming funding behind national advocacy organizations and their chosen strategies are crowding out the opportunity for citizen and grassroots involvement.

This is not the goal of advocacy organizations, but this is the situation which has resulted from increasing professionalism, competition, and an influx of funding. While solutions suggested by Skocpol, such as restructuring the tax code, could help raise the importance of membership associations again and create more democratic processes for advocacy (Skocpol 2003), it is beyond the scope of this paper to determine.

Future work should further explore the role of women in public health and advocacy as “mothers.” Additionally, race and other demographics should be considered as well as many nonprofit organizations and public health entities are now striving to put health equity at the fore. Given the lack of citizen involvement, it is worth understanding if those goals can be achieved without broad community discussion. It is also worth considering that organizations may want community involvement but have not been able to get input from citizens. In this case, barriers to participation should be explored and remedied. In a similar vein, the demographics of the professionals advocating for tobacco control should also be studied. Lastly, the role of media and communications directed towards citizens should also be further explored, especially how this may impact policy preferences.

3.4.1 Limitations

As it has been years since the passage of T21, policies in many states and localities, interviewees may not fully recall organization action or names of partner organizations. By conducting interviews with multiple individuals involved as well as cross-referencing news articles this issue was reduced. Also, T21 has remained an important issue and was passed at the national level less than 5 years ago, so local and state-level interviewees may be reviewing their policies or implementation, keeping the policy and its passage fresh in their mind. Another potential limitation is that this analysis formally only includes two states and it is possible that

there are different trends in other states. However, given the federated nature of many of the key organizations and discussions with national-level experts these trends are likely the most common. Additionally, this limitation was considered when designing the study: Colorado and Virginia were chosen after being compared to all fifty states; the snowball sampling was selected to cast a wide net; and the national scope of T21 helps reduce this issue. The project also includes some insights from other states to help understand politics more broadly.

Lastly, the sampling strategy was more likely to pick advocates who are professionals (via the professional network of interviewees), but I still asked about anyone involved in the policy process so if grassroots movements existed, I should have been referred to them. This process likely looked very different in Hawaii, the first state to pass T21 (Reuters Staff 2015), but the purpose of this study was to look at marginal cases to understand the process in general, not describe the passage of T21 in all jurisdictions.

3.5 Conclusion

Furthering the work from *Diminished Democracy*, this paper provides additional evidence to support memberless organizations are leaders in the policy arena. Citizens are largely left out of this process as professionals, led by national advocacy organizations with a few wealthy donors who coordinate passage of policies. Various structures and institutions promote this type of policymaking including funding mechanisms, differing organizational capacity for advocacy, and tobacco control advocacy organizations perceiving themselves as representing the public interest.

There are many aspects of the policymaking process which are affected by a small number of powerful national organizations dominating tobacco policy. First, it impacts which groups or individuals can influence the agenda in a given state or locality. Second, this type of

politics results in specific policies which are supported by the few well-funded national advocacy organizations. Other policies which include unacceptable compromises are blocked by the national groups if possible while other areas of the country without the attention of the national advocacy organizations risk tobacco-industry bills being passed. Lastly, while each organization in this study is focused on improving public health, the strength of the national advocacy organizations may lead to the passage of policies with questionable efficacy and potential harm.

Public health needs to be critical of itself in how it serves and represents the public. Including communities is an important aspect which needs more attention. This is difficult, however, in a profession where many of the state and local organizations which provide health programs and services are already lacking resources. Bridging the gap and including more citizens is not only an opportunity to increase civic engagement, but also avoid unintended consequences and achieve greater health equity. As tobacco use is an issue which has and continues to impact so many Americans, it is important to bring the public into the public health policymaking process.

3.6 Chapter 3 Exhibits



Figure 3. 1: A communication by Altria Client Services, LLC which opposes the “adult flavor ban” and provides an opportunity for citizens to give feedback directly to legislators.

3.7 Chapter 3 References

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3.8 Chapter 3 Appendix A

Data Used for Case Selection

States were purposively sampled based on differing aspects like preemption status, timing of passage, and comprehensiveness of the policies (see Appendix Table A.2.). Unless otherwise stated, data represents the average value across 2012-2017. State and local Tobacco 21 variables were constructed based on information from the Preventing Tobacco Addiction Foundation website (Preventing Tobacco Addiction Foundation 2023f) and Campaign for Tobacco Free Kids reporting (Campaign for Tobacco-Free Kids 2021). Preemption status was determined using the definitions of a previous researcher (Berman 2016). Local smoke-free passage was recorded by the American Nonsmokers' Rights Foundation for each state (American Nonsmokers’ Rights Foundation 2023).

Appendix Table A. 13. Independent variables; study period (2013-present).	Colorado	Virginia
State Adoption before National	0	1
# Localities with Tobacco 21 Law	22	0
Preemption Status	Expressly not preempted	No apparent preemption
Local Smoke-Free Passage	70	9
Political and institutional features		
Unified Democrats	0.428571429	0
Unified Republicans	0	0.714285714
Government Ideology	61.07692	29.78887
Economic features		

Tobacco-Producing State	0	1
Production (measured in \$)	0	101598000
Demographic features		
Total Population (ACS)	5,526,115.14	8,414,959.86
% under 18 years	23%	22%
% under 21 years	27%	26%
White	87%	71%
Black or African American	5%	21%
American Indian and Alaska Native	2%	1%
Asian	4%	8%
Native Hawaiian and Other Pacific Islander	0%	0%
Some other race	5%	3%
Hispanic or Latino (of any race)	21%	9%
Adult Tobacco Product Use (%)	24.69	26.24
Youth Tobacco Product Use (%)	6.32	6.12
Adult Cigarette Use (%)	19.41	21.38
Youth Cigarette Use (%)	4.39	4.01

Government ideology was based on 1960-2017 values from the updated Berry, Ringquist, Fording, and Hansen (1998), available through Fording’s blog (Richard C. Fording 2012). Values for unified Democrats/Republicans were retrieved from the Book of the States (The Council of State Governments 2023). Economic features including tobacco production were retrieved from US Department of Agriculture records (National Agricultural Statistics Service 2023). Demographic variables (population size, residents under 18 years old, and race/ethnicity) were all collected via the American Community Survey (US Census Bureau 2023). Lastly, tobacco product and cigarette use rates for adults and youth were averaged from 2013-2017 National Survey on Drug Use and Health (NSDUH) rates (Substance Abuse and Mental Health Services Administration 2023).

3.9 Chapter 3 Appendix B

Interview Selection and Analysis

Interviews were conducted by the investigator, a female PhD candidate with prior experience conducting elite, semi-structured interviews (Jarman, Mendez, et al. 2019; Kiessling et al. 2022). This prior research informed this study, and the investigator was able to leverage previous connections with a few interviewees. Participants were provided a copy of the study purpose (at the time) and informed the interviews would be a part of the interviewer's dissertation project. As the investigator had previously interviewed similar organizations, the interviewer may have been biased by how the process went in Ohio. Additionally, the investigator held a contract with Michigan Department of Health and Human Services at the time of the study and used personal experience to explore interview topics, perhaps leading to bias as she had faced many of the challenges other tobacco control advocates had. Additionally, through professional experience and prior research, the investigator was skeptical of flavor ban policies and biased against certain advocacy organizations as they had previously misrepresented data in presentations and communication. Despite this, the investigator was aware of personal biases and counteracted this by having the interviews be semi-structured and letting every interviewee express their views fully.

Potential interviewees were contacted via email and given options to meet in-person, by phone, or through a Zoom meeting. Of 112 individuals or organizations contacted, only 30 participants completed interviews. Many did not reply to the initial email or follow-up emails, a few failed to schedule and stopped replying, and there were three potential interviewees who dropped out because they believed a colleague already covered the information I needed in a separate interview.

In-person interviews were conducted at the individuals office or a coffee shop. Online interviews and telephone interviews were conducted mainly at the investigators home, but

occasionally were conducted at a hotel. Due to the nature of the interviews being focused on organizational decisions and not sensitive personal information, privacy was not required. Audio recording (a personal cellphone) was used for in-person and telephone interviews; Zoom interviews were recorded using the software feature (both audio and visual were recorded). Field notes were taken during the interview and any relevant notes after the interview could be added as well. Interviewees were only interviewed once and were not contacted for comments/corrections on transcribed interviews or for feedback on results. The protocol was not pilot tested. Completed interviews ranged from under 30 minutes to over 2 hours, with the majority taking an hour to an hour and a half.

Following interviews, snowball sampling (asking participants who else I should talk to) was used to discover who else was involved in the T21 process. Saturation was reached when additional interviews would not have given substantially more information. A codebook was developed using best practices for interview analysis (DeCuir-Gunby, Marshall, and McCulloch 2011; Johnny Saldaña 2015). Hypothesis codes based on the theory being tested were developed in advance of analysis. Holistic and in-vivo codes were added during analysis when preexisting codes did not sufficiently cover a topic. Analytic memos were written to help develop themes and in vivo, thematic, as well as focused coding was used to analyze the transcribed interviews (Johnny Saldaña 2015).

3.10 Chapter 3 Appendix C

Appendix Figure C. 2. Interview Protocol

Interviewer: Karalyn Kiessling
Interviewee: _____
Date and time: ____/____/2022 at _____ [am/pm]

Kiessling Dissertation: Semi-structured Interview Protocol to Evaluate Political Opportunity Structures

PI: Karalyn Kiessling, kiessli@umich.edu
Faculty Advisor: Holly Jarman, hjarman@umich.edu
Funder: Tobacco Section, Division of Chronic Disease and Injury Control, Michigan Department of Health and Human Services https://www.michigan.gov/mdhhs/0,5885,7-339-71550_2955_2973-416978--00.html

Interviewees will be tobacco control organization representatives involved in Tobacco 21 discussions; these individuals could be a part of:

1. National, state, or local non-profits
2. State, local, or city government
3. Research centers or other policy consultants
4. Formerly worked at any of the above during the time Tobacco 21 was considered

SUMMARY

Using the case of Tobacco 21 and interviews with decisionmakers and advocates, this project will define the opportunities available to advocates as well as the mechanisms by which they decide to pursue policy at the local, state, or even national level.

INTRODUCTION

Interviewer greets the interviewee

Thank you for giving us some of your time. I'm looking forward to talking with you.

Consent to record

Before we start, do I have your permission to record this conversation? Recording this conversation will allow me to transcribe it later and have the most accurate information. After the interview, I will deidentify the recording and store it on a secure shared drive at the University of Michigan. We don't share these recordings with anyone outside of the research team.

If interviewee consents to recording

Thank you. I'm going to start recording now. I'm also going to take some notes - so if you hear me typing / see me looking down at my notebook, that's what I'm doing.

If interviewee does not wish to be recorded

Interviewer: Karalyn Kiessling

Interviewee: _____

Date and time: ____/____/2022 at _____ [am/pm]

That's no problem. We can do this without recording and I'll just take some notes. If you hear me typing / see me looking down at my notebook, that's what I'm doing.

Informed consent procedure

Next, I want to see if you have any questions about the project.

In-person: [provide hard copy] This is a copy of the project purpose statement that I sent to you previously / shared with you in our phone conversation.

For Zoom, Phone, and In Person: There are a couple of things I want to review before you agree to this interview:

- As you know, we will be using the information you provide to better understand how decisions about policy options are made. We may use quotations from the interview in publications related to this project, but we will not quote individual interviewees by name. Instead, we will use general descriptors such as 'state official' or 'tobacco control advocate'.
- Second, when you start the interview you agree that your participation is completely voluntary and understand that we are not offering compensation for your participation.
- Finally, you may request we stop or take a break at any time.

At this point, do you have any questions about the project or this interview?

[Once questions are answered] Great. So are ready to start?

If oral consent is given, proceed to first question. If consent withheld, terminate the conversation.

ABOUT YOUR ORGANIZATION

- When was your organization considering Tobacco 21 (T21) as a policy option?

- Can you please tell me a little about your role within [organization] at the time T21 was being considered?

Interviewer: Karalyn Kiessling

Interviewee: _____

Date and time: ____/____/2022 at _____ [am/pm]

- How was the decision made to either pursue or stop pursuing T21?
 - When did this happen?

 - Did any of the following impact your organization's decision to pursue T21?
 - Existing evidence
 - Health equity
 - Youth access
 - Preemption/legal obstacles
 - Enforcement
 - Funding
 - Acceptance by retailers, law enforcement, or other stakeholders
 - Other

- *[If a T21 policy was pursued/proposed]:*
 - What jurisdictions (level of government) would be covered by the proposed T21 policy?
 - Why was this level of government select over another? (i.e., why state rather than local, why county rather than city)

 - Did the proposed T21 policy change while [organization] was working on it? [did implementation change, did parts need to be left out or added]

INFLUENCE OF OTHER ORGANIZATIONS

- What other organizations did [organization] collaborate with on T21 policies? (Collaborating could mean providing/receiving data or information, preparing statements or materials together, educating/lobbying together, etc.)

Interviewer: Karalyn Kiessling

Interviewee: _____

Date and time: ____/____/2022 at _____ [am/pm]

- Did collaborations influence how [organization] made decisions about T21?
- Were there any other organizations, decisionmakers, or players which impacted the organization's decision making?

OUTCOMES

- Are there any lessons your organization learned about prioritizing or pursuing policy while it was considering T21?
- Did [organization] ever present about Tobacco 21 or share it with others who would have been unaware?
- Are any formal evaluations being conducted on tobacco control policies your organization promoted? If so, which organization is conducting the evaluation?

OUTRO

- Now that you know more about our project, is there anything else you think I should know?

Interviewer: Karalyn Kiessling

Interviewee: _____

Date and time: ____/____/2022 at _____ [am/pm]

- Do you have any more questions for me about our research or how we will use this data?
- Who else should we contact to help us with this project?

Thank you so much for talking to me. [*If applicable*: I'm going to stop the recording now. (*Interviewer stops the recording*)].

3.11 Chapter 3 Appendix References

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Chapter 4: Fixing Tobacco Enforcement: Retail Compliance Failures During COVID-19 and Proposed Solutions

The third paper of this dissertation reviews and assesses the network of tobacco enforcement mechanisms targeted at the retailer level which aim to reduce youth access to tobacco. Across all levels of government, the goal is to enforce regulations preventing retailers from selling to anyone under the age of 21. Despite policies at all levels, though, compliance among retailers has fallen in recent years. This paper describes the federal, state, and local mechanisms to enforce tobacco control policies and then addresses why compliance has been dropping. In addition to lower enforcement during the COVID-19 pandemic, there were already preexisting issues with two federal mechanisms designed to address youth access. While the FDA directly oversees undercover inspections and addresses violations, SAMHSA instead heads the Synar program. This program was created to force states to have and enforce a state law which prohibits retailers from selling to youth. These two federal enforcement regimes are not well aligned, and the result is very different compliance levels across states. The recent increase in the federal minimum age of sale to 21 has also had a negative effect on compliance rates. This paper discusses all of these features and then suggests solutions to these various problems.

4.1 Introduction

Theoretically, enforcement of regulations ensures compliance with federal, state, and local policy. Effective enforcement also ideally reduces problematic behavior in addition to addressing it upon discovery (Baldwin, Cave, and Lodge 2011). This theoretical basis applies to tobacco control measures specifically with ensuring that retailers comply with regulations and do

not sell to underage individuals (21 years of age or younger). The purpose of these regulations is to protect public health and reduce tobacco use and initiation, but those goals are not achieved if the policies are not enforced adequately. There are many policies regulating the tobacco retail environment and it is known that not all are enforced equally after passage. This results in varying compliance rates amongst states and localities, ultimately impacting youth access and leads to differences in youth use of products across the US. For policies to be effective in reducing sales to youth and related tobacco use, effective enforcement with adequate funding and a functional structure is necessary (Roberts et al. 2021; Dove, Stewart, and Tong 2021; Dai et al. 2021). With the advent of the coronavirus disease 2019 (COVID-19) pandemic, however, there is building evidence that retailer compliance with key requirements has drastically diminished. This is likely to have ongoing implications for health across the US. This paper seeks to provide an overview of current enforcement mechanisms at the local, state, and federal levels and assess if current regulations are meeting the goal of reducing youth purchasing to protect public health.

Similar to alcohol and marijuana control, a key enforcement tool for tobacco control policies is in-store inspections. These inspections, often called “compliance checks”, are conducted in various ways but the primary purpose is to ensure the majority of stores comply with relevant laws. The US regime for ensuring retailer compliance with tobacco control policies is highly complex, involving two distinct and incongruent federal agencies on top of a patchwork of state and local laws and agencies with highly variable procedures and resources. In recent years, a renewed focus on creating effective enforcement regimes has emerged among public health actors, as localities and states passed Tobacco 21 (T21) policies (raising the minimum age of sale to 21) and, more recently, flavor bans and restrictions (US Department of Health and Human Services, Centers for Disease Control and Prevention, and National Center for Chronic

Disease Prevention and Health Promotion 2022). While much recent discussion of inspections has occurred around a licensing mechanism (Tobacco Retail Licensing, TRL (Public Health Law Center and American Lung Association in California 2020)), a license is not necessary to conduct compliance checks.

With these changes to enforcement regimes at the state and local level, there were noticeable effects on retailer compliance. In California, for example, the retailer violation rate (RVR) initially decreased to under 10% following passage of a statewide T21 policy in 2018 (Zhang et al. 2018). However, in 2019 RVR had increased to 17.9% and after the pandemic, the first year (2022) that inspections were able to safely restart, the RVR had drastically increased to 27.7% (California Tobacco Control Program 2022). While the state had changed enforcement practices to include underage individuals 18-20 years of age, which increases the RVR (Zhang et al. 2018), the decrease in retailer compliance is quite concerning as, historically, California was consistently at or below a 10% violation rate since 2010 (Substance Abuse and Mental Health Services Administration 2018). As a reference point, the last time an annual report with all state Synar data was released, California was at 7.6% and the national weighted average was 9.8% (Substance Abuse and Mental Health Services Administration 2016b).

The increase in the rate elevates the level of concern as the federal Synar program requires state RVRs to be under 20% to receive full substance use block grant funding². The Synar program was established in 1992 and incentivizes states to enforce state laws and reduce sales of tobacco products to youth by linking the state RVR to block grant funding (Substance Abuse and Mental Health Services Administration 2022a). Any state over the target rate

² Note: The nomenclature for this funding has changed. The grant formerly known as, and sometimes referred to as the Substance Abuse Block Grant [shortened to SAPT BG or SABG], is now the Substance Use Prevention, Treatment, and Recovery Services [SUPTRS] Block Grant. In this paper, neither are used so that it is clear (“In Case You Haven’t Heard...” 2023).

established by the Substance Abuse and Mental Health Services Administration (SAMHSA) initially risked losing up to 40% of substance use block grant funding for the state. After the federal T21 law passed, the potential amount a state could lose if the RVR exceeded 20% was reduced to 10%; less but still substantial as the block grant is one of the largest sources of federal funding for public substance use treatment and prevention (Substance Abuse and Mental Health Services Administration 2014a; 2022c; U.S. Congress. House. 2019).

The 2022 RVR in California combined with a recent national study which found over 80% of youth who tried to purchase cigarettes in 2020 were successful (Agaku 2022) indicates that many states may be out of compliance with the Synar program. RVRs higher than 20% across most states is notable as it is not clear if, when, or how substance use block grants for states will be affected. If states lose funding that could mean not only millions less for tobacco control policies, but likely loss of funding for other programs supported by substance use block grants. This funding supports treatment, like state-level opioid programs, as well as other substance use prevention and treatment programs. These programs are already critically underfunded, and the pandemic increased existing strain on public substance use programs (American Hospital Association 2022; Conroy, Lin, and Ghaness 2020). Beyond the funding implications, failing to control the RVR could lead to failure of the Synar policy overall as the policy is only as effective as the enforcement. Since lower RVRs signaled less youth use, it stands to reason the opposite is possible; if enforcement is lax more underage individuals, youth 18 years and younger specifically, will have greater access to tobacco products. Significant progress has been made in recent years to curtail youth access to tobacco- failure to control the RVR and improve enforcement efforts enables greater youth access and increases the potential that more young people than necessary will be addicted to tobacco products for years to come.

Given these potential implications, this paper explores a gap in the literature by examining the impact of COVID-19 and federal policy change on the US tobacco compliance and enforcement regime. Specifically, this research identifies factors contributing to poor compliance and explores possible solutions. There are two key questions considered: Why is the current enforcement regime failing? What corrective measures can be implemented? By generating a better understanding of the scope of this problem, this paper will provide tobacco control professionals with the information needed to advocate for effective enforcement.

4.2 Methods

In order to examine the reasons why the current enforcement and compliance regime is failing and how this might be addressed, this paper draws on structured observations of retail stores, elite interviews, and an analysis of relevant laws, regulations, policy documents, grey literature, and academic studies.

Retail store observations were conducted in two Michigan counties: Kent County and Wayne County. A sample of retailers in each county was drawn from zip code tabulated areas (ZCTAs) purposively sampled to account for key neighborhood demographics: racial makeup, income, and rurality. 15 retailers from each ZCTA were randomly selected to be visited. Data inside and outside of retailers was collected for 122 stores. Successful structured observations assessed: 1) advertising inside/outside; 2) product placement; 3) promotions (special offers/coupons); 4) types of products. A modified version of the Standardized Tobacco Assessment for Retail Settings (STARS) tool [and its extensions, the STARS: Vape Shop (vSTARS)(State and Community Tobacco Control 2016) and STARS: Flavored Tobacco (fSTARS)(Counter Tools 2023b)] was used to complete observations (Ganz et al. 2015; State and Community Tobacco Control 2023; 2014). High school and undergraduate students local to

each county were recruited and hired to conduct observations alongside the main investigator. Observers received thorough online training on conducting unscheduled, on-site visual observations with safety as a priority. Assessments were estimated to take 10-15 minutes to complete. Observational procedures were selected based on community partner advice from a previous youth trainer for Michigan FDA Tobacco Compliance Program and existing best practices (Lee et al. 2014; Feld et al. 2016). Further methodological information can be found in Chapter 2.2 Methods.

In addition to store observations, this project used insights from elite semi-structured interviews with 30 decision makers and tobacco control advocates from Colorado and Virginia, as well as representatives of national organizations (for further information on interviewees, refer to Chapter 3.2 Methods). Interviews were conducted between April 2022 and June 2022. Trint, a subscription service, was used to transcribe recorded interviews. A research assistant reviewed the transcripts to ensure accuracy. Interviews were then analyzed using MAXQDA 2022. Further information on analysis, the interview process, as well as the protocol, can be found in Chapter 3 Appendix B and C. To supplement observations and interviews, relevant laws, literature and policy documents were utilized to better understand enforcement policies and procedures.

4.3 Pre-COVID-19 Tobacco Control Enforcement and Compliance Regime

Similar to today, tobacco control was enforced at the federal, state, and local level before COVID. In 1992, the Synar Amendment, section 1926 of the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act [PL 102-321], was introduced by Congressman Mike Synar of Oklahoma and passed, creating the Synar program. The Amendment required states (and some US territories) to “enact and enforce laws prohibiting the sale or distribution of tobacco products to individuals under the age of 18” (Substance Abuse and Mental Health

Services Administration 2022a). Before the pandemic, each state had to conduct compliance checks and maintain a retailer violation rate (RVR) below 20% to receive the full amount of allotted substance use block grant funding. Otherwise, the block grant could be reduced by up to 40%. Initially concerns were raised about the Synar program not being able to reduce youth tobacco use rates, over time, however, evidence built showing the program was effective (DiFranza and Dussault 2005; Spivak and Monnat 2015). In 2015, Spivak and Monnet found “all 50 states, as well as the District of Columbia, have been in compliance with the minimum 20 percent violation rate since 2006”(Spivak and Monnat 2015).

All states were permitted to pass policies which supported the minimum age of sale laws required by the Synar amendment. For many states, this included passing a tobacco retail licensing (TRL) policy which licenses tobacco retailers. As of 2022, 40 states have passed a TRL policy, with the majority (33) covering all tobacco products while 7 cover all products except e-cigarettes (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023a).

Another possible enforcement mechanism at the state level are assurances of voluntary compliance (AVCs). AVCs are legal agreements made between companies and state attorney generals. The company agrees to comply with certain standards and the agreement is legally binding (Counter Tools 2023a). While this is an option, AVCs are on a by-company basis and therefore would not cover all stores. There is some evidence that AVCs do decrease the RVR (Dai and Catley 2018), but not in all cases as AVCs still require enforcement effort to be effective (Henriksen et al. 2020).

In a number of states, localities are also allowed to pass TRL and other enforcement policies. In 2021, Dobbs et al. reported that 344 local T21 policies contained a TRL, meaning an

extensive number of local licensing regimes exist. However, 230 of those policies were in Massachusetts alone so the policies are not distributed equally across the country (Dobbs et al. 2021). The ability to pass local policies relies on state law. 31 states in the US preempt at least one type of local action, meaning a locality cannot pass a tobacco control policy which is more stringent than existing state policy (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023b).

In addition to the Synar program and state/local efforts, the US Food and Drug Administration (FDA) was responsible for enforcement as well. The FDA inspections of retail establishments were conducted across US states and territories through contractual agreements, however, if a state or territory could not fulfill the contract, a third-party company was used (US Food and Drug Administration 2023f). Contracts are still currently utilized, and the inspection process has not changed since the beginning of the pandemic. The results of undercover buy inspections are reported to the FDA, and the agency then determines if a violation occurred. If a retailer is in violation for the first time, the FDA sends a warning letter to notify the retailer. After the first violation it is at the discretion of the FDA to escalate to a civil money penalty or issue a no-tobacco-sale order (US Food and Drug Administration 2023e; 2017; 2023c). FDA inspections can overlap with state Synar compliance checks if the rules of each respective regime are followed (Substance Abuse and Mental Health Services Administration and Food and Drug Administration 2012). In addition to inspections, the FDA monitors tobacco products on the market and can issue injunctions, seize unapproved products, and pursue criminal prosecution against manufacturers, distributors, or importers (US Food and Drug Administration 2023d). The FDA also monitors online retail activity of tobacco products and monitors for violations (US Food and Drug Administration 2023e).

4.4 Existing Issues, New Policies, and the COVID-19 Pandemic

Like most aspects of life, the COVID-19 pandemic drastically impacted tobacco enforcement as priorities shifted to focus on the crisis at hand. However, retailer compliance was already affected by systematic failures of the existing network of enforcement regimes. Adding to an unsound infrastructure, a new federal policy which impacted the minimum age of sale, Tobacco 21, happened to be passed at the end of 2019. This meant the preparation by the federal government and states for the shift to Tobacco 21 was meant to take place during the pandemic. These three areas are explored below separately to understand how each impacts tobacco enforcement so the combination and outcome of the three driving causes of poor retailer compliance can better be understood.

4.4.1 Systematic Failures

Prior to the introduction of the federal Tobacco 21 policy and the COVID-19 pandemic, systemic issues already existed with tobacco enforcement in the US. Across the local, state, and federal levels there are several licensing regimes which vary greatly. While this should mean all retailers are covered due to the many regimes, this is not the case. While the enforcement regimes are not in competition, per se, the patchwork of state and local policies do not work together to create a cohesive, federalized system. Rather, certain states and substate areas have much weaker enforcement despite the many layers (Dai et al. 2021). This is due to inconsistencies across states regarding local decision making and two incongruent enforcement regimes at the federal level.

While having various policies across states and localities has the benefit of addressing the unique needs of a jurisdiction, it also creates inconsistencies and risks wear or inefficient enforcement across the country (Dobbs et al. 2021). The differences in policy and enforcement at

the state and local level lead to variations in state violation rates, as can be seen in SAMHSA's records of RVRs (Substance Abuse and Mental Health Services Administration 2016a; 2018). Prior to the national T21 policy and the COVID-19 pandemic, there were many policy changes at the state and local level which caused these differences in rates.

Enactment of minimum legal sales age (MLSA) policies, including local and state T21, were among the biggest policy changes. Before being passed at the federal level, Tobacco 21 laws had been passed in 19 states and in over 500 localities (Preventing Tobacco Addiction Foundation 2023d). In addition to MLSA policies, states and localities also passed policies, licensure requirements and/or taxes aimed at reducing youth access and use. In some cases, states and localities have also banned certain flavored products entirely (Campaign for Tobacco-Free Kids 2023b). Not all localities are equally able to pass policies, however. Depending on state policy and preemption, some localities are either directly prevented from passing such policies or do not attempt to due to the possibility (or threat) of legal action (Public Health Law Center 2020; Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023b). Preemption is a major barrier for local level policies in many states and often forces policy decisions to be made at the state level, which is a slower process and less likely to happen if momentum is not built through local policy experimentation and passage (Hudson et al. 2021; Reynolds, Crane, and Winickoff 2019). Preemption is a particularly complex issue as localities may be some of the strongest actors with local enforcement. Many local regimes have a high rate of success and tobacco control advocates believe local regimes are the best way to enforce policies and improve compliance (Dobbs et al. 2021). Given the many different policy options, retail environments across the US, as well as the enforcement

mechanisms, vary greatly and create a patchwork of inconsistent policies and enforcement practices.

In addition to the varying policies at the state and local levels, it is problematic at the federal level to have two regulatory regimes which are not clearly connected or coordinated. Although there are ways that FDA enforcement overlaps with the Synar program (Substance Abuse and Mental Health Services Administration and Food and Drug Administration 2012), it is quite limited and not consistent across lower levels of government. Due to the federated structure of US politics, the horizontal lack of coordination at the federal level affects state and local enforcement as well. An interviewee from Denver, Colorado, describes how the FDA inspections impacted the local level and decision to pursue a local enforcement regime as the FDA efforts were inefficient:

“So the city [of Denver] ... had housed the FDA compliance program under our purview for some time ... [through a] subcontract local health departments typically ... do those compliance checks ... [previously] we were only doing at most one compliance check of every retailer in the city/county of Denver, not even in some instances ... my predecessor recognized at that point that is not reflective of what's actually happening in the field. We have youth access to these products every day, all day. And so, one compliance check... in some instances, not even one, was not reflective of what's happening. So, at that point, the city said, ‘okay, we're going to invest in a local compliance and enforcement program and we're going to give that program the authority to conduct these compliance and enforcement checks’.” (P4, CO, Local public health)

In some states, the FDA contract holder is the state itself, but in other cases it is a separate, hired organization. These organizations can work across states as well, specializing in inspections so a state does not have to build capacity and structure to conduct inspections (US Food and Drug Administration 2023f). The FDA regime is the more stable of these two options as it is federally controlled and not up to each state to decide how they will complete those checks. As such, entities which do FDA checks at the state level are often contacted by the state Synar representatives to also complete state Synar inspections. The companies which are

contracted through the FDA are often contacted to perform compliance checks at other levels. An interviewee discussed how Florida is a state which chose to not work under an FDA led contract and the contract went to a private organization which specialized in conducting FDA compliance checks across states instead:

“there was a period in time where FDA decided it really wanted to ramp up its compliance checks because they wanted to, I think, assess the retail environment during the e-cig[arett] epidemic. And so they ... created contracts with every single state. And I think they offered it to departments like Alcohol, Tobacco and Firearms and ... they offered it to the governments and then the governments either took it or didn't. If they didn't, the FDA contracted with a private entity ... in Florida, they contracted with a private entity that actually has contracts in multiple states, and [Florida] decided not to take the money from the FDA and not do it themselves. And that [private] entity ... already had infrastructure for how to do compliance checks.” (P11, National, Advocacy org)

In some states the FDA contract holder is also in charge of Synar inspections, meaning there is a high degree of overlap. In other cases, the FDA regime and the Synar regime are completely separate (Woolsey et al. 2023). Beyond the lack of coordination, FDA inspections and the Synar program inspections have different goals and measure different aspects of compliance. FDA inspections are not required to be random and have the purpose of identifying and addressing violations when a retailer sells to an underage individual (US Food and Drug Administration 2023d). The Synar inspections have strict requirements for the sampling frame and are meant to provide a probability sample across the state, with no retailer being more likely than another to be chosen for inspection. The goal is to obtain a valid RVR for a state to determine if the state is enforcing its underage access policies effectively (Substance Abuse and Mental Health Services Administration 2014b; 2022a). While the defined goals of each regime are important, the inconsistent coordination across programs may be increasing inefficiency in tobacco enforcement as a whole.

Another complicating point about the Synar program is the fact that such a large amount of funding support, millions of dollars from a substance use block grant, is at stake if a state RVR goes over the target set by SAMHSA. One interviewee simply stated: “If we go over 20%, we're going to be losing millions of dollars” (P26, VA, Tobacco treatment specialist). While the sampling method for each state has strict guidelines and is intended to give an estimate of the RVR for underage purchases, it is well-known that there are methods for achieving a lower RVR by changing how inspections are done. Using youth (15-17 years of age) rather than young adults (18-20 years of age) is known to reduce the likelihood of a successful purchase and lower the RVR overall (Woolsey et al. 2023; DiFranza and Dussault 2005). While the goal is to obtain an accurate view of compliance, the incentive for states to find ways to stay under the SAMHSA target is high, especially as the state must pay for enforcement of the program and cannot use any of the block grant funding for the Synar requirements (Avery et al. 2019).

4.4.2 Federal Tobacco 21 and Related Programmatic Updates

T21 was passed at the federal level in December 2019, raising the MLSA across the US to 21. The language of the law was quite brief, mostly just changing the age from 18 to 21 and maintaining the same expectations for states to perform compliance checks and report to the Synar program. A three-year grace period was included in the law, meaning that even though the age was raised immediately across the country, states would be given time to change enforcement practices as needed. SAMHSA was empowered to grant additional compliance “discretion” for up to two years after the initial grace period. Another key change for the Synar program was a change in the possible penalty for being over the RVR: “[the penalty] shall be equal to 1 percent of such State’s substance abuse allocation determined under section 1933 for each percentage point by which the State misses the retailer compliance rate goal established by

the Secretary”, up to 10% of the block grant rather than 40% (U.S. Congress. House. 2019). While there was concern that, like the Synar program, the T21 policy would be an unfunded mandate, there was an allocation for states made as a “transitional grant”. Additionally, the language states “To carry out this [transitional grant] subsection, there are authorized to be appropriated \$18,580,790 for each of fiscal years 2020 through 2024”(U.S. Congress. House. 2019). However, none of the individuals interviewed in this study mentioned such a grant to help with the transition. Instead, many, like this interviewee, made a point that they did not have the funding to complete the tasks assigned by the federal government:

“We have [no funding]. Of all of the work that my office does, that the Community Service Board does, comes from our [federal] block grant ... we had made a request for the state budget to cover some additional compliance checks. The budget hasn't come out and they decreased the amount that we had asked for ... But that budget hasn't been finalized. It hasn't been published. Nobody had questions about it. And my guess is they didn't have questions on it because they knew they were going to cut it... we'll still continue ... to ask for additional state funding to do these enforcement checks, but when this rate goes over 20%, their hands are tied. They're going to have to do something ... part of me is like, all right, let the rate go over 20 ... there's only so much that I can do ... it really does come down to enforcement. And until that's happening on a very regular, robust manner, we're going to continue to see what we're [seeing now] ... part of me is like, let's let this get completely out of hand. Let the state have to come in and figure this out.” (P23, VA, State public health)

Between 2020 and 2024, \$74,323,160 was intended to be provided to states to assist in the transition to T21. While this funding was allocated, it is unclear if it was dispersed to and used by states. If it was, then the amount allocated must have been insignificant within the context of adjusting to T21. However, there is no way to find out if the funds were utilized as there is no mention of the transitional grants from SAMHSA in official guidance documentation (Substance Abuse and Mental Health Services Administration 2022b; 2020).

The SAMHSA guidance did address the impact of T21 on states and clarified that, “During this three-year period, SAMHSA will not enforce penalties for Retail Violation Rates in

excess of 20 percent. However, states are expected to continue to meet the expectations of the law, including reporting” (Substance Abuse and Mental Health Services Administration 2020). As data collection was already complete for 2019, the grace period covered 2020, 2021, and 2022, with 2023 being the first year which would have potential ramifications. Since the passage of T21, SAMHSA has maintained that the Compliance Rate Goals should still be set at 20% for any retailer accessible to anyone under 21 (Substance Abuse and Mental Health Services Administration 2022b). While the national T21 law reduced the penalty from a 40% loss of a state’s SABG to 10% and added the option to submit a corrective action plan, any loss could seriously reduce a state’s capacity to provide services. Additionally, it is unclear how many corrective action plans a state would be allowed to submit, meaning the pressure the Synar act used to push state action is weakened (Substance Abuse and Mental Health Services Administration 2022b).

As mentioned previously, block grant funds are not allowed to be used by states for the Synar program. Instead, “states ... may expend funds from the primary prevention set-aside of their Block Grant allotment under 45 CFR 96.124(b)(1) for carrying out the administrative aspects of the requirements, such as the development of the sample design and the conducting of the inspections [45 CFR 96.130(j)]”. This “primary prevention set-aside” is part of “not less than 20 percent for programs for individuals who do not require treatment...” and could be used for education and activities which reduce substance misuse (Legal Information Institute n.d.).

While SAMHSA has released these guidance documents and explained how T21 will change the Synar program, the FDA has updated their website and materials but there appears to be little change in how the agency conducts inspections (US Food and Drug Administration 2021). SAMHSA was required to have a 3-year grace period, but the FDA did not have that same

requirement. Instead, the FDA allowed a one-year adjustment period (for 2020) and then issued the following statement making it clear T21 was now the standard retailers would be judged by:

“Now that a reasonable transition period has concluded, FDA is using people under the age of 21 years in its nationwide compliance check inspection program to determine retailer compliance. FDA also expects that retailers will continue to verify the age of anyone under the age of 27” (US Food and Drug Administration 2021).

Despite this harsher stance publicly, the FDA has been criticized repeatedly for not enforcing T21 since enactment (Romm et al. 2023). This point came up in several interviews, with one participant expressing frustration that the FDA had done “nothing” after the passage of the policy:

“In 2019, as you're probably aware, the federal government... raised the age to 21 and gave the FDA the power to enforce it. The FDA has done nothing. Nothing. It's been two years. Nothing. They haven't issued a single fine. They've done 60,000 inspections, done nothing with their results.” (P12, National, Advocacy org)

Another interviewee simply said, “I think FDA has... yet to really promote and implement the policing of that [federal T21] law...” (P22, VA, State public health). In part, that is likely due to the COVID-19 pandemic starting.

4.4.3 Impacts of the COVID-19 Pandemic on Enforcement

The federal T21 policy was not in place more than a few months before the COVID-19 pandemic began in 2020. In March 2020, a national emergency was announced for the entire US and some states began shutdown procedures (Centers for Disease Control and Prevention 2023b). Given the turmoil and uncertainty produced by the pandemic, only “essential” job tasks were being performed and other public health and surveillance activities decreased or effectively ceased. In Virginia, for example, no Synar inspections were conducted in 2020, 2021, or 2022. Before the pandemic, similar to California, the RVR had already started to increase due to the

FDA inspection contract ending and putting all the pressure on the state Synar program for enforcement:

“historically, Virginia [’s RVR] has been 9, 10, 10.6 ... And then in May of ... 2018, our FDA contract ended. So with the FDA contracting in the state plus Synar inspections, we were inspecting about 50% of our retailers annually ... Not great, but not horrible. When the FDA contract [with the state health agency] ended in May of 2018, that left only Synar inspections. Synar only accounts for about 10% of the retailers ... all of a sudden you go from 50 to 10 and our rates start coming up. Retailers know, right, that they're not being inspected. So our current rate that we've been operating off of is based on 2019.” (P23, VA, State public health)

After completing the 2019 inspections at an accelerated pace to account for a state T21 bill which took effect mid-year and the FDA contract ending the year prior, the RVR had risen to 16.8%. The state agency in Virginia then attempted to correct course and improve education and Synar program enforcement for 2020, but those efforts were disrupted by the pandemic. Adding to the collapse in enforcement, a private entity had accepted a contract with the FDA in Virginia and was unable to gain authority to conduct inspections in early 2020:

“there is rumored to be an FDA contract in the state. It is with a third party. I actually spoke to them ... they were needing, basically, permission from [the Virginian enforcement agency] to do these inspections because in code [the enforcement agency] is the only one that's allowed to do that ... they were looking for a letter of exemption. [The agency] was not giving it to them. And so, I guess in theory [Virginia] had an FDA contract, but it wasn't functional at that point. And then COVID hit and nothing's happening anyway ... FDA is not doing any inspections We have no enforcement happening at all for 2020.” (P23, VA, State public health)

In 2021, Virginia also could not conduct Synar investigations due the spread of a COVID-19 variant. By 2021, the contract issue had been resolved, but there were only “a few hundred” FDA inspections conducted instead of the thousands which were happening in Virginia before the pandemic (P23, VA, State public health). When interviews were conducted in 2022, Virginia was preparing to restart Synar inspections (P25, VA, Foundation; P23, VA, State public health). In Virginia, the underfunded Synar program, FDA contract issue, and effect of COVID-

19 stifling compliance checks all combined to create an environment where enforcement was scant if not completely lacking (P22, VA, State public health; P27, VA, Consultant). During this time period there was also no funding provided by the state to educate retailers about the state or federal T21 policies, meaning 2022 was also the first year in-store education could be completed (P21, VA, State public health; P28, VA, State public health). Given this situation, many in the state were concerned, and nearly certain, that the compliance rate would be above 20% (P25, VA, Foundation; P26, VA, Tobacco treatment specialist; P28, VA, State public health). However, for 2022 the financial penalty was not a concern due to the T21 grace period and the option of submitting a corrective action plan:

“I would be shocked if our number wasn't [over 20%] ... there is a 10% penalty ... if you go over that 20%. The upside is we are in the last year of the three-year grace period that SAMHSA had given everybody to kind of, change course and ... ready their communities when the federal [T]21 law passed so there wouldn't be a financial penalty. We'll still end up on a [corrective] action plan. But there won't be a financial penalty. And for Virginia, that 10% is about \$4.2 million. So it's not chump change.” (P23, VA, State public health)

As noted by the interviewee, 2022 was the last year of the 3-year grace period for T21. The three years of the grace period (2020, 2021, and 2022) happened to coincide with the worst years of the COVID-19 pandemic when it would have been most dangerous to inspectors, especially underage individuals. The grace period removed the pressure of possibly putting inspectors into an unethical position, but it also meant that states were not forced to adapt and did not do inspections. 2023 is the first year the Synar program will be requiring all states to submit inspection reports and the target RVR for every state is still 20% regardless of enforcement mechanisms. If a state's 2023 RVR is over 20% then they “may elect to submit a corrective action plan to the Assistant Secretary for Mental Health and Substance Use within 90 days of receipt of notice that they are not in compliance with the Synar regulations, which outlines

strategies they will take to reduce the Retail Violation Rate to 20 percent or less” (Substance Abuse and Mental Health Services Administration 2022b)” Submission of an action plan avoids the 10% penalty on the substance use block grant and is at the state’s own expense. States, like Virginia, are proactively planning to submit (as mentioned in the quote above). However, SAMHSA fails to outline how long this option would remain in place. And as several interviewees mentioned, this does little to actually fix the underlying issue. Despite having the 10% block grant penalty option to force state action, SAMHSA is instead giving states more time. This is not a new situation for SAMHSA, either, as interviewees discussed how Virginia was not being required to adequately enforce their MLSA for some time (P22, VA, State public health; P23, VA, State public health).

Compared to the Synar program regime, the FDA continued to conduct inspections. The rate was significantly reduced, however see table 4.1. For the FDA, it is important to note that there is no violation penalty for states, only retailers are punished so they were able to maintain a level on consistency throughout the pandemic. Additionally, the FDA regime is more flexible as is not required to be random and have a sampling procedure like Synar does. FDA, instead, does follow-ups on non-compliant retailers and complaints by citizens.

In the US, there are a minimum of 380,000 tobacco retailers (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023a). Assuming each retailer investigated by the FDA was visited once annually, with 47,307 inspections that would mean just over 12% of retailers were visited during the first half of year. If this same inspection rate continues, it could be expected that nearly 25% of retailers will be inspected by the end of 2023. While this capacity has built again post-pandemic, it is still lower than in 2019 when nearly 40% of retailers were inspected. Given that the majority of retailers

have no inspection in any given year and that FDA inspections are not required to be random, it is questionable if the FDA enforcement regime is fulfilling its purpose. Especially considering that 380,000 is on the low end of the estimate and it is likely there are many more unidentified tobacco retailers due to inconsistent licensing across states (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023a).

Given that the RVRs for many states before T21 and COVID-19 were increasing (Substance Abuse and Mental Health Services Administration 2018), it is likely that after years of reduced enforcement and a higher age standard, RVRs for many states will be above 20%.

4.4.4 A New Version of an Old Problem

While the factors which are causing low state compliance under Synar are new, the issue of many states being out of compliance is not. In fact, an article written by DiFranza and Dussault on the Synar program in 2005 still has many recommendations applicable to the current predicament. In summary, the 2005 article reviewed the Synar program approximately a decade after the Synar Amendment was passed. At the time, states were not meeting the target RVR despite having recently gained funds from a major tobacco settlement. Upon review, it became clear that nearly half of all states were not using any of the tobacco settlement money to assist with the Synar program (DiFranza and Dussault 2005).

In addition to not using an obvious source of funding, states were exhibiting other behaviors which undermined the goals of the Synar program and reducing youth sales. It was noted that states were designing Synar protocols to lower the state RVR by either using inexperienced or older youths during inspections or “counting all requests for proof of age as a refused sale” (DiFranza and Dussault 2005). Additionally, there was a time period in the 1990’s where FDA enforcement was in place before “the Supreme Court terminated the FDA’s

jurisdiction over tobacco” in 2000 (DiFranza and Dussault 2005)(the FDA later regained authority in 2009 through a federal law). As this was period coincided with the start of the Synar program, many states relied on the FDA to conduct compliance checks and failed to establish effective enforcement regimes at the state level (DiFranza and Dussault 2005).

According to the co-authors, the states were not alone in over-relying on the FDA. DiFranza and Dussault quoted a SAMHSA representative as saying “that ensuring state enforcement of youth tobacco access laws has not been their primary focus because they were relying on FDA’s enforcement activities, which included assessing monetary penalties against retailers”. SAMHSA had done more than simply rely on the other federal regime too much. Recognizing various states were over the target RVR, SAMHSA decided to undercut their own program by not punishing states in violation:

“In 2000, four states with no funded enforcement (Maryland, Missouri, Montana, and Rhode Island) were rescued from being out of compliance by SAMHSA’s decision to renegotiate targets for 1999, saving them from having to fund enforcement.” (DiFranza and Dussault 2005)

Despite this, the Synar program was eventually effective with all states having a RVR under 20% by 2006 (Spivak and Monnat 2015), potentially leading SAMHSA to think the strategy of “saving” states from failure would still achieve program goals. Given this past record of SAMHSA renegotiating the rate for states and not implementing penalties under conditions which were favorable to state regulation, it is difficult to envision the same agency not granting the same leniency as a result of T21 and the global pandemic. While this leniency worked in the favor of SAMHSA in the past, it is also clear that states with effective enforcement saw much lower RVRs. For example, Connecticut went from 70% violation rate to 18% from 1996 to 2000 by using effective enforcement; if the rate is high now it can be lowered again (DiFranza and

Dussault 2005). While the 2005 article of DiFranza and Dussault raises concerns that SAMHSA will be overly considerate to the needs of states with an RVR over 20%, the article also demonstrates how states which had extremely high RVRs were able to reduce sales to youth (at least on paper). The article also notes that target RVRs for states were not previously 20% across the board and the possible funding loss for non-compliant states could also be adjusted if alternative penalties were needed (DiFranza and Dussault 2005). This kind of flexibility, within reason, is likely to be needed as RVRs are likely to increase greatly again.

4.4.5 In-Store Observations Signal Ineffective Enforcement

It is too soon to know what retailer compliance rates will be, but some observational data from Michigan suggests that current enforcement regimes are not effective. In-store observations in Grand Rapids and Detroit assessed product availability, placement, and marketing in 122 tobacco retailers. One portion of this survey was dedicated to self-service displays, recording if tobacco products are accessible without the assistance of a clerk or employee.

For a retailer to be in compliance with federal laws, the FDA specifies that cigarettes, loose tobacco (for roll-your-own cigarettes), and smokeless tobacco products must not be sold using self-service displays unless in an age-restricted store (Center for Tobacco Products 2023b). Despite this federal rule, over 8% of retailers sold cigarettes this way, over 7% sold loose tobacco, and 5% sold smokeless tobacco within reach of the public. While there are not the same restrictions for other tobacco products, large cigars, cigarillos, and e-cigarettes were all sold using self-service displays across a number of stores. Overall, nearly a quarter (24.58%) of retailers had at least one product sold using a self-service display. During these observations there was no attempt to purchase items using an underage decoy. Regardless, the sheer amount

of products available for self-service, especially products violating FDA regulations, indicates enforcement as it currently stands is not effective.

4.5 Solutions: How Tobacco Control Advocates Want to Fix Enforcement

Currently, SAMHSA is planning to give states with a RVR above 20% the option of a 10% loss on their substance use block grant or submit an action plan for how to reduce the rate below 20%. This is less of a choice and more of a way to provide states another chance at reducing the RVR. SAMHSA could extend the grace period originally given for T21 or just keep doing this soft enforcement to prevent funding cliffs for states, but this may harm Americans benefiting from substance use block grant funds. While this is the lesser of two evils in the immediate sense, these choices do not address the underlying incentive structure which has led to this situation even before COVID-19 muddied the waters. Instead, the incentives need to be changed to improve compliance and achieve the original goal of reducing sales of tobacco products to youth significantly.

The first set of recommendations would, ideally, require changes at the federal policy level. First, the Synar program could be moved from management under SAMHSA to the FDA. While the Synar program and FDA inspections have different goals currently, there are more reasons to combine the regimes than keep them separate. The FDA is clearly able to conduct inspections more consistently across the entire US and already does so via state-based contracts and also partners with private entities if a state is unwilling or unable to conduct inspections. In some states FDA inspections are already connected with state Synar inspections, so expanding this practice is a logical next step. The efficiency of inspections could also be improved by taking the best parts of the FDA regime (for instance, visiting a store multiple times if there is a violation) and the best parts of the Synar program (for example, having a sampling frame that is

equally likely to choose any retailer) and combining them together. Instead of coordinating across agencies, housing the enforcement regime all in one agency reduces bureaucracy as well. Placing the Synar program under the FDA would also standardize inspection protocols across the entire US, not just at the state level.

While placing the Synar program under the FDA could be beneficial, the issue of the funding mechanism for the program arises. The second suggestion at the federal level would be to restructure the funding of the program to better align incentives for state governments. The current structure of the Synar program means states have the potential of losing substance use block grant funds if the state RVR is over the target set by SAMHSA. Previous and current state actions suggest this potential financial consequence is not enough to overcome barriers and promote state enforcement of tobacco programs. Instead, other funding mechanisms may encourage states to enforce their policies. Adding in a positive aspect if states succeed could help balance the disincentive with an incentive: like matching state funds with federal dollars for enforcement efforts or offering desirable rewards such as increased highway funding or an increase to the state Medicaid budget. While it may be difficult to find what incentivizes state governments, it is clear that if states are going to be relied upon to enforce tobacco policies, then an incentive should be added or the penalty needs to be routinely assessed to bring states in line.

An alternative, third suggestion to adding an incentive, would be for the agency in charge of the Synar program to set guidelines to determine if a state is making a “good faith effort” (DiFranza and Dussault 2005). For example, there are proactive actions a state can take to improve the enforcement regime, such as provide state funding to support the Synar program, instate punishment for non-compliant retailers, and employ underage inspectors which are a certain minimum age. Currently, a state is either in compliance or not and stands to lose a set

amount of funding. However, this could be changed so that there are degrees of being out of compliance. There should be stepped funding restrictions in response to these different levels.

The fourth suggestion which would require federal change would be a removal of state preemption of local tobacco control action. Preemption is noted by many scholars, organizations, and federal agencies as a major barrier to strong, local enforcement (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2023b). Given the power differential between localities and states the best way to resolve this issue would be for the federal government to overrule all state preemption policies.

If none of the changes suggested above are passed through Congress and SAMHSA continues to lead the Synar program, then this agency can still consider and implement many of the suggestions above. While there should be some allowances for COVID-19, nearly anything could become an extenuating circumstance for a state and the line must be drawn somewhere. Re-aligning the incentives and disincentives could still benefit SAMHSA, but the most beneficial would be acknowledging if a state is putting forth a “good faith effort” when enforcing the state MLSA law.

Regardless of where the Synar program may be managed, the program could be updated in several ways. First, a computerized system for submitting reports would improve efficiency. Synar reports are currently conducted with a submission form that could easily be converted to an online form, making data entry easier at the state level and allow faster data analysis at the national level. Second, greater transparency of retailer violation rates is also needed. The last annual report, which includes a nationally compiled comparison of rates, was completed in 2014 (Substance Abuse and Mental Health Services Administration 2016a; 2022e). It is obvious that the retail environment is now completely different and without knowing the national retailer

violation rate or retailer violation rate for states reduces the ability of tobacco control advocates to request greater funding for enforcement. Knowing the rate is of key importance; right now it is widely assumed it is bad and state Synar coordinators are scared to disclose for fear of repercussions. This cultivates an environment where the most accurate methods may not be used so that a rate below 20% can be maintained. While state Synar reports are available, a compilation of key data is missing, and you have to go to each state separately to get the information. Further research should be done to analyze what policies work to reduce the violation rate. However, this is difficult without data. Third, an audit similar to the one done by DiFranza and Dussault (2005) should be completed again as SAMHSA is no longer issuing annual reports (DiFranza and Dussault 2005). Finally, states should be required to penalize those who sell to anyone underage and use adults who are underage (18-20 years old) rather than minors for safety and validity reasons. Both of these final suggestions increase effectiveness of an enforcement regime and should now be standard across the US (Public Health Law Center 2022b; American Heart Association et al. 2019).

4.6 Conclusion

The enforcement of tobacco policies in the US is layered and complex, with various state and local enforcement regimes in addition to two incongruent federal enforcement regimes. Restructuring at the federal level to connect the two regimes into a single governing agency would substantially improve efficiency and align processes. Ideally, the two federal regimes would be condensed under the FDA. If the two regimes remain separate, however, the Synar program should: 1) enforce existing penalties; 2) set guidelines for states to differentiate between various states of non-compliance; and 3) raise the standards for states when enforcing MLSA laws underneath T21.

After some initial issues, the Synar program was good policy which substantially reduced sales to youth. However, the program has failed to evolve as time went on and the tobacco retail market and tobacco policies changed. The Synar program is out of step with what is needed: transparency, reporting, etc. In addition to being inefficient, the lack of data availability means it is harder to ask for more funding at the state and federal level for funding to improve the program. Rather small program with potentially huge consequences.

4.7 Chapter 4 Exhibits

Table 4.1 FDA Inspections Summary, January 2019 - June 2023

Year	2019	2020	2021	2022	2023*
No-tobacco-sale order	35	25	0	0	1
Civil money penalty	4,951	1,096	5	1,991	1,646
Warning letter	13,743	2,728	6,067	16,134	6,010
No violations observed	126,959	31,139	40,697	79,451	39,650
Total Inspections	145,688	34,988	46,769	97,576	47,307

*Note: Data for all years is January 1-December 31 of each year except 2023, which covers January 1 through June 1, 2023.

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Chapter 5: Conclusion

5.1 In Closing

During the past decade, the US tobacco product market has transitioned from being dominated by cigarettes to now offering an expanding array of different products. As cigarette use by youth has continued to decline, e-cigarettes have become the most popular product for middle school and high school students (Jebai et al. 2023). The dramatic increase in use by youth has been alarming to both the public health community and the general public, raising concerns about the health risks of vaping. With increasing public pressure and lobbying efforts from tobacco control advocacy groups, states and local jurisdictions have responded by passing Tobacco 21, flavored tobacco restrictions, and other policies.

Focusing on ground-level implementation of recently passed policies, this dissertation has revealed weaknesses within enacted policies and with related enforcement. While national level policies receive substantial attention from researchers and advocacy organizations, states and localities were emphasized across the three studies because it is ultimately the network of policies at all levels which impact policy efficacy and public health outcomes. Through analyzing implementation of the various policies, strategies to strengthen individual measures and the network overall have been identified.

5.2 Conclusions for Implementation

Across this dissertation, it is evident that the complex interplay of federal, state, and local policy is best understood by analyzing how each affect implementation and efficacy at the

ground level. Additionally, it was clear that the infrastructure for implementation and enforcement across states and localities in the United States is unequal, resulting in inconsistent outcomes. A robust, standardized infrastructure accessible to all states is needed. These three papers have also emphasized the power of state and local enforcement regimes to build upon federal institutions, given the funding and resources to do so.

The first paper of the dissertation highlighted a broad array of tobacco product types and flavors available within two Michigan cities. The differences in product availability and advertising across neighborhoods were quite different than pre-COVID-19 studies had recorded. Unexpectedly, non-Hispanic Black neighborhoods did not have greater availability and advertising for menthol or mint products. Instead, these communities had less availability of certain products and higher prices for Newport menthol cigarettes. Additionally, Hispanic communities were observed to have greater availability and advertising for menthol and mint products when no difference was expected. These findings suggest there have been significant shift in the tobacco retailer environment during COVID-19, and also demonstrated a lack of effective enforcement as some retailers had illegal self-service displays.

The second paper examined the politics surrounding the passage and implementation of Tobacco 21 to understand if these policies were true grassroots efforts. Although grassroots support was sought after, memberless organizations consisting of public health professionals and advocates were the driving force behind Tobacco 21 policies at the state and local levels. Citizens were largely left out of the process; professionals, led by national advocacy organizations with a few wealthy donors, coordinated the passage of local policies with the intent to pass state policies which aligned with their goals and standards. Various structures and institutions promote this type of policymaking including funding mechanisms, differing

organizational capacity for advocacy, and tobacco control advocacy organizations perceiving themselves as representing the public interest. National tobacco control advocacy organizations were crucial in passing policies with language to improve enforcement and implementation in states and localities. As these national organizations must strategically choose how to utilize resources, however, this can lead to some states and localities falling farther behind as industry policies with weak or no defined enforcement are ineffective.

The third and final paper of this dissertation assessed the network of tobacco enforcement mechanisms across the federal, state, and local level intended to reduce illegal sales of tobacco products from retailers to underage persons. Despite policies enacted at all levels, retailer compliance has fallen in recent years due to three key factors: 1) the existing network of two incongruent federal enforcement regimes, varying state policies, and some local regimes which are poorly coordinated; 2) Tobacco 21 passed nationally, increasing the age of sale while relying on the existing network of enforcement to adjust their practices to meet the new mandate; and 3) the COVID-19 pandemic severely limited retailer inspections and a lapse of enforcement added to the pre-existing issues resulted in fewer retailers being in compliance. Programmatic updates and standardization of policy at the federal level could remedy these issues.

5.3 Looking Forward at Tobacco Control in the US

Taken together, the papers presented in this dissertation highlight how recent tobacco control policies, like Tobacco 21 and flavor restrictions, have been layered atop an arrangement of weak enforcement regimes. While in some states and localities Tobacco 21 policies were used to improve state or local enforcement structures, this did not occur consistently across the US (American Heart Association et al. 2019; Dai et al. 2021; Jarman, Kiessling, et al. 2019). Moreover, the federal Tobacco 21 policy did not alter federal enforcement substantially, mainly

shifting the minimum legal sales age to 21 and adding some provisions for funding and an effective enforcement date (U.S. Congress. House. 2019).

Regardless of the many issues identified across this dissertation with the implementation of recent tobacco control policies, there has been tremendous progress in reducing vaping among teenagers. The youth vaping rates reported in 2020 were 1 in 10 for middle school students (10.2%) and more than 1 in 4 for high school students (27.5%) (Centers for Disease Control and Prevention 2020). The most recent comparable past 30-day use rates are still concerning, but show substantial improvement: about 1 in 30 middle school students (3.3%) and 1 in 7 high school students (14.1%) (Centers for Disease Control and Prevention 2023d). Especially in the second paper of this dissertation, it was highlighted that youth use of e-cigarettes motivated the passage of Tobacco 21 and comprehensive flavor restriction policies. In addition to Tobacco 21 and flavor restriction policies, there have been several massive media campaigns focused on reducing youth vaping (Center for Tobacco Products 2023a; American Lung Association 2023a, 7; Sukumaran 2021; Truth Initiative 2023c; Ad Council 2023; Campaign for Tobacco-Free Kids 2023a). These efforts appear to be effective, but that is beyond the scope of this dissertation.

What is known is that the market size for novel and alternative products is growing rapidly. As of 2022, the global market size was estimated to be \$25 billion and is expected to reach over \$60 billion by 2030 (Tilekar 2022). This growth is not necessarily negative and could provide health benefits to adults who use cigarettes, specifically (Warner et al. 2022). However, this will only be possible with a strong enforcement regime and evaluation. While the focus has been on youth use, disparities in tobacco use still exist and substantial effort is needed to reduce these inequalities (Schulz et al. 2022; Marbin et al. 2021; Kingsbury et al. 2020; Centers for Disease Control and Prevention 2022a). The weaknesses in the US enforcement system must be

resolved to protect those targeted by the tobacco industry. Additionally, more work needs to be dedicated to closing the gap between states with best-practice policies and weak or nonexistent enforcement. In effect, the best resourced areas lower their tobacco-related disease burden while areas with the least resources fall further behind. In addition to increased human cost of elevated tobacco use, the financial cost of tobacco-related healthcare expenditures in states with inadequate tobacco control policies and enforcement is also higher (Office on Smoking and Health and National Center for Chronic Disease Prevention and Health Promotion 2022). The disproportionate morbidity and mortality many communities in the US experience has consequences for individuals who use tobacco, their families, and the population at large (Centers for Disease Control and Prevention 2022a).

Structured improvements could transform enforcement, policy, and retailer education across the US, but the federal policies which create equal opportunities across the states to succeed should be prioritized. The recommendations include: removing state-based preemption to allow all localities to pass tobacco control policies; creating one federal enforcement regime; and increasing funding equitably. These changes would increase the capacity of communities to pass tobacco control policies which protect targeted groups and improve public health.

5.4 Chapter 5 References

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