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# Innovating in *Cannabis* policy

## Introduction

Since 2012, adult use *Cannabis* legalization has arisen as one of the America's greatest social experiments. Serving as the catalyst to a newfound awareness of the limitations of federalism, the state-confined legalization of *Cannabis* is an innovation in public policy. Before beginning to identify avenues that further innovate *Cannabis* policy, we must start with this premise: that a regulatory infrastructure tailored to create a limited yet inclusive economy with a federally illicit controlled substance is intrinsically innovative. As with all innovative policies, diffusion across jurisdictions has become rampant. In the 10-year period from the "birth year" of *Cannabis* legalization for adult consumers to the year of preparing this chapter, 22 states have legalized *Cannabis* for adult use. In this same timeframe, 23 states legalized *Cannabis* for medical consumers, leading to a total of 38 states with a form of legalized *Cannabis*. Many of these states are overlapping, suggesting that the liberalization of *Cannabis* policies within jurisdictions has also been seen with urgency [1].

In many ways, this accelerated proliferation of *Cannabis* legalization across U.S. states has outpaced our ability to identify avenues for originality. For better or for worse, states have been largely imitating each other's policies in an effort to prioritize the urgency of consumer demand rather than innovation. This statement should not be misconstrued as a criticism of state programs or lawmakers. Regulators walk a metaphorical tightrope of enforcing policies that protect public health and society yet support the *Cannabis* industry. This balancing act is only further complicated by the complexities of establishing the *Cannabis* industry. *Cannabis* markets have a harsh sensitivity to path dependence, thriving substitute markets, and unprecedented market conditions. States that have experienced hurdles resulting in delayed implementation timelines have struggled to transition consumers over from well-established illicit and substitute alternative cannabinoid markets, even years after launch. States like New York, for example, have found themselves in a cyclic battle of shutting down illicit storefronts while simultaneously trying to find outlets for their own regulated *Cannabis* supply as *Cannabis* cannot be transported outside of the state, nor outside of the limited regulated system [2]. When taking all of this into consideration, in addition to the political discourse surrounding the topic, it becomes clear that the intricacies of *Cannabis* policy are in a league of their own.

Any attempt to abandon the current *Cannabis* policy paradigm and employ a novel change comes with innate risks. Many of these risks can offset the regulatory balancing

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act, resulting in damaging public health or industry impacts. Importantly, a risk to the industry is a risk to business owners, many of whom have disproportionately suffered from *Cannabis* criminalization and have put their life savings into the hope of finally being able to operate in a regulated environment – a hope worthy of support.

It is because of this challenging risk/reward ratio that **innovating in *Cannabis* policy must be viewed as a practice, not an outcome.** The slew of problems that exist and would benefit from innovation is no secret. However, the ways to address them without teetering off the tightrope have yet to be fully discovered. For regulators and lawmakers, the focus of innovation should center less on the policy to create (the “what”) and more on the process by which the policy can be created (the “how”).

In focusing on the “how,” we reject the idea that innovation must come in the form of a singular, disruptive, technology-enabled proposal. How innovation occurs inside the *Cannabis industry* is different than how innovation occurs in the context of *Cannabis policymaking*. *Cannabis* policy is not a business, and the regulator’s role in governing *Cannabis* is not to turn a profit for shareholders but to ensure the *Cannabis* economy meets the demands of all stakeholders. The practice of innovation in *Cannabis* policy will more closely resemble other areas of policy, bringing the field away from its current infancy into an era of modernity.

The remainder of this chapter will illustrate the three directions in which the public sector must look to innovate *Cannabis* policy: *outward*, *forward*, and *inward*. These three reflective positions and actions taken within them should identify areas of improvement, implement innovation, and demonstrate improved value across *Cannabis* policies.

## Part I. Looking outward

Most experiments, whether in a lab or real-world setting, follow the scientific method. They begin with a simple observation, one that ultimately leads to a hypothesis. That hypothesis is then tested and analyzed until conclusions can be drawn. **If *Cannabis* legalization is one of America’s greatest social experiments, where is the analysis?**

While there is no shortage of intermittent studies measuring the impacts of *Cannabis* legalization on hyper-specific public health outcomes, there are very few governments conducting systematic evaluations on the successes or failures of state *Cannabis* programs in a manner that enables continuous improvement in policy development. In order to innovate *Cannabis* policy, we first must evaluate it. As the saying goes, you can’t improve what you don’t measure.

This may seem rather obvious in theory, but it is more challenging in practice, as there is no standard evaluation framework or validated performance measures within programs for regulators to monitor and respond to. *Cannabis* policy research underpins

innovation; the absence of research-based frameworks has stifled innovation as well as our ability to be pragmatic.

While the field works toward consensus on what metrics point to the ongoing successes or failures of a market, regulators can begin their practice of innovation with testing the most foundational hypothesis of *Cannabis* policy: regulating *Cannabis* will facilitate the eradication of an illicit market. As you may have guessed, the only way to test this hypothesis is by *Looking Outward*, toward consumers and the drivers of their demand.

Importantly, in order for the practice of innovation to be effective, all evaluations must inform learning. This means that data should not be collected with the sheer goal of identifying and cataloging numbers year over year. This is not to say that looking at trends cannot be helpful in the practice of innovating policy; it can be. However, research should prioritize informing policymaking decisions in real time. **Innovation in policy happens when policymakers can move from being reactive to being proactive.** When testing our foundational hypothesis, the following four questions can quantify market performance and inform learning:

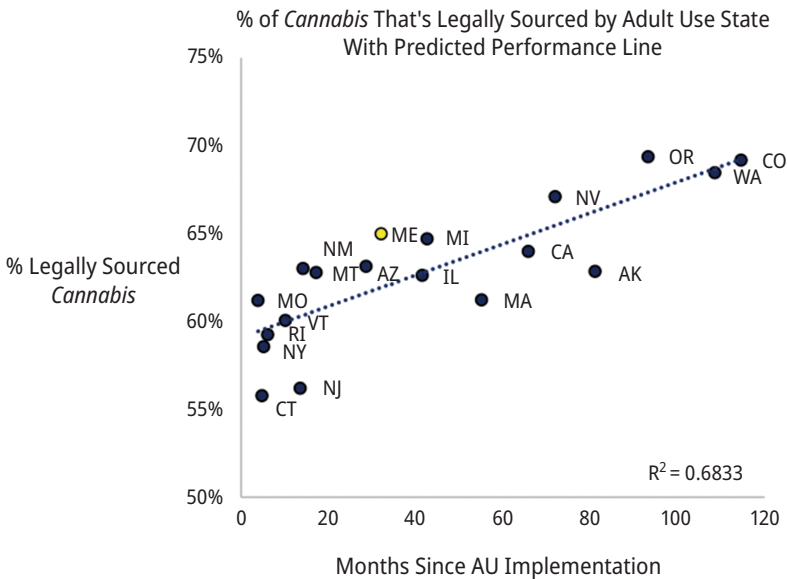
1. **Who:** What is the prevalence of past-year, past-month, and daily *Cannabis* consumption among the population, and what is the geographic and demographic breakdown of this prevalence?
2. **What:** What proportion of these consumers are participating in the regulated market as opposed to illicit or other substitute markets?
3. **How:** What is the average volume of *Cannabis* that consumers are accessing from each *Cannabis* source they have identified?
4. **Why:** What are the factors influencing consumer participation in each *Cannabis* source?

In answering these four basic questions through empirical surveillance such as the Regulatory Determinants of *Cannabis* Outcomes Survey [3], policymakers can rapidly assess the performance of their regulated market against illicit markets and, most importantly, identify where shortcomings may exist. If done correctly, the answers to these initial questions should lead to a sequence of others, initiating an investigation that results in policy innovation.

Maine's Office of *Cannabis* Policy (OCP) provides an excellent case study in this. In 2021, OCP commissioned empirical surveillance on market dynamics in an effort to understand how the first year of an active adult use market performed. Research found that Maine's regulated *Cannabis* market was incredibly successful at the end of year 1, resulting in a higher regulated market capture than expected when accounting for the amount of time the market had been active [4]. Figure 1 below shows a recently updated national analysis reflecting similar findings over two years after Maine's market launch, with a predictive performance line demonstrating expectations of legal market capture. Importantly, Maine's analysis also showed that consumers prioritized their source of *Cannabis* based on price, a common priority factor in *Cannabis* purchasing, as *Cannabis* consumers are a price-sensitive population [5].

While this finding is not exactly novel, the research answering questions #1 and #4 in the above list pointed to something of interest: there was a subset of past-month consumers living in specific zip codes without accessible adult use stores who were willing to pay a higher monetary amount for a gram of *Cannabis* than the average Maine consumer. These data points coupled together suggested that should adult use *Cannabis* become available in these zip codes, consumers may transition away from illicit sources and toward an adult use market, pushing that successful regulated market capture even further. This research led the regulators of Maine into a series of follow-up questions, as any good policy evaluation should.

The first in the series of investigative questioning was identifying why these zip codes do not have adult use stores. In time, it became apparent that the zip codes in question had not opted in for adult use *Cannabis* retail within their municipality primarily because there was limited incentive to. Unlike in other states, municipalities in Maine cannot levy a local tax on *Cannabis*, making the administration of a local program costly. Looking outward, regulators saw this rationale as an opportunity to innovate. OCP began by requesting municipal revenue sharing at 5% from the state's 15.5% taxation on *Cannabis*. This original request was denied by the legislature, but OCP continued to negotiate [7]. Importantly, the research found that illicit markets had associations to worsening public health outcomes such as driving under the influence of *Cannabis*, tobacco use, and problematic *Cannabis* use. Meanwhile, the regulated market had no associations with these poor health outcomes.



**Figure 1:** Estimated Legally/Illicitly Sourced and Time Since Legalization by State (Regulatory Determinants of *Cannabis* Outcomes Survey, Data Collected and Analyzed June 2023) [6].

Using this groundbreaking finding, OCP was able to request a bill providing municipalities the opportunity to recover local *Cannabis* program administration costs and legal fees up to \$20,000 as an incentive to opt into adult use cultivation and retail stores through their Public Health and Safety Fund. The funds for this endeavor were carved out at 25% [8]. Carve-out funds are not common, and this request did not come without justification from the regulators, wherein being armed with data was proven the best defense. By looking outward through their program evaluation, Maine was able to reimburse more than a dozen municipalities for their decision to opt in to regulated adult use *Cannabis* sales. This fund may very well be the impetus for additional municipalities to opt in and expand market capture in the following years.

It is worthy of note that the innovation observed in this case study could have occurred regardless of the data points provided by consumers. Maine may have been able to host a series of stakeholder engagements and identify a need for a municipal fund prior to launching their market. However, what the policy evaluation offered was clarity on where to begin. The empirical data demonstrated that widespread municipality opt-in would be beneficial for continued success of the regulated market and identified the exact zip codes where expansion would be *most* beneficial.

Regulators are constantly surrounded by the opinions and subjective expertise of the public. Data, when collected with validated methods, is objective. It cancels out the noise and provides direction. When regulators look outward, they are rewarded with efficiencies in policy decision-making. By definition, this is innovating in *Cannabis* policy.

## Part II. Looking forward

In many arguments within *Cannabis* policymaking, it is commonplace to hear cries for regulating *Cannabis* like it is alcohol or tobacco. While these arguments may have been more familiar in the early days of legalization, prior to policy imitation becoming well established, they still resonate today. **Ten years after the first successful ballot measure for adult use *Cannabis*, it is time that we regulate *Cannabis* like it is . . . *Cannabis*.** We do this through what is commonly referred to as “experimental policymaking.”

Experimental policymaking focuses on testing the effects of a policy decision in real-world or simulated settings and evaluating the outcomes prior to execution [9]. In the world of data science, we call this predictive modeling. Recall from the earlier section that looking at trends can be helpful primarily outside of real-time decision-making. This is where predictive modeling comes in, analyzing patterns and trends within a data set to create sophisticated mathematical models that can predict future outcomes under certain market conditions. *Looking Forward* must come immediately after *Looking Outward*, as these data sets are inextricably linked.

While predictive modeling is the twenty-first-century advancement of many modern industries, the utility of predictive modeling for policy planning is best observed in the healthcare industry. Take the COVID-19 pandemic, for example. Upon discovering the traceability of the new pathogen spreading across the globe, epidemiologists began documenting the epidemic's growth patterns across temporal and social factors. These complex data sets essentially quantified the reproduction and transmission of the pathogen in geographies across time, identifying the size of outbreaks, the maximum period for outbreaks, and subsequent spread times in a predictive manner [10]. These data sets were undeniably helpful in capacity planning within local healthcare systems, prevention messaging, and identifying the appropriate incubation period for each variant. Moreover, these models were also helpful in guiding governments to execute policies like "Safer at Home" mandates given a prediction of increased spread or peak morbidity [11].

While policies surrounding COVID-19 may sound like an extreme deviation from the topic of *Cannabis* policy, the application is relevant. Predictive modeling is being utilized to inform policies across the globe, some policy decisions as high priority as preventing mortality. Surely, it can and should be used to inform something as limited as the current U.S. *Cannabis* market, principally if we use data to test our policies prior to executing them.

The introduction of this chapter briefly pointed to the *Cannabis* industry's harsh sensitivity to path dependence. In economics and public policy, path dependence is best described as the processes by which past events or decisions constrain later events or decisions [12]. In terms of *Cannabis* policymaking, if we select and execute an arbitrary policy that is so burdensome that it is nearly prohibitive to the industry's success, it may become impractical to reverse or improve upon the original outcomes given transitory conditions. History matters, and, as such, experimental policymaking should be prioritized.

In 2022, the State of Maryland saw experimental policymaking, or predictive modeling, as an opportunity to inform the development of their adult use *Cannabis* statute. The Maryland State General Assembly commissioned the same empirical surveillance discussed in the prior section (*Looking Outward*) with a focus on identifying data points that embody future behaviors of consumer participation within the market (*Looking Forward*).

Combining Maryland consumer data with a sharp focus on future market participation and associated behavioral elements, as well as historical supply and sales data from other states, the *Cannabis* Policy Simulation Lab, a product designed for experimental policymaking in *Cannabis*, was able to predict future regulated market performance based on variations of vital policy factors: the rate of taxation, the amount of adult use retail stores available, and the amount of time that the market has been open [13]. Importantly, these three policy components are confounding variables, meaning they interact with each other greatly when influencing or producing an outcome. In

experimental policymaking, simulations should account for variations in multiple variables so as to identify the most optimal outcome possible with multiple policy levers.

What Maryland found through their experimental policymaking research led to the inclusion of two foundational elements in their adult use *Cannabis* statute: taxation and capitation on retail licensing. Using a sophisticated matrixed approach as shown in Tables 1–3, researchers tested the amount of regulated market capture over the course of five years under tax rates at 10, 15, 20, 25, and 30%, while also testing the number of dispensaries at 100–250, 260–500, and 500–800. In real-world settings, the variables of taxation, the period of time that regulated *Cannabis* has been accessible to purchase through licensed retail stores (i.e., months of implementation), and the volume of retail stores available all interact in influencing regulated *Cannabis* sales. The following tables attempt to show the outcome of those three variables interacting when all three policy variables are increased or decreased in an attempt to find the most optimal trade-off point for each policy decision with the goal of having the lowest percent of illicit *Cannabis* possible. For the State of Maryland, the simulations of these policies together showed that the most optimal tax rate for regulated market capture was not more than 15%, and with no fewer than 300 dispensaries [14].

**Table 1:** Maryland Predicted % of Illicit *Cannabis* Between Months 1 and 12 After Adult Use Implementation.

Number of dispensaries	Effective tax rate	Month of implementation		
		1–4	5–8	9–12
100–250	10%	43%	42%	41%
	15%	45%	44%	43%
	20%	47%	46%	46%
	25%	49%	49%	48%
	30%	52%	51%	50%
260–500	10%	38%	37%	36%
	15%	40%	39%	38%
	20%	42%	41%	41%
	25%	44%	44%	43%
	30%	47%	46%	45%
500–800	10%	33%	32%	31%
	15%	35%	34%	33%
	20%	37%	36%	36%
	25%	39%	39%	38%
	30%	42%	41%	40%

**Table 2:** Maryland Predicted % of Illicit *Cannabis* Between Months 25 and 36 After Adult Use Implementation.

Number of dispensaries	Effective tax rate	Month of implementation		
		25–28	29–32	33–36
<b>100–250</b>	<b>10%</b>	38%	37%	36%
	<b>15%</b>	40%	39%	38%
	<b>20%</b>	42%	42%	41%
	<b>25%</b>	45%	44%	43%
	<b>30%</b>	47%	46%	45%
<b>260–500</b>	<b>10%</b>	33%	32%	31%
	<b>15%</b>	35%	34%	33%
	<b>20%</b>	37%	37%	36%
	<b>25%</b>	40%	39%	38%
	<b>30%</b>	42%	41%	40%
<b>500–800</b>	<b>10%</b>	28%	27%	26%
	<b>15%</b>	30%	29%	28%
	<b>20%</b>	32%	32%	31%
	<b>25%</b>	35%	34%	33%
	<b>30%</b>	37%	36%	35%

**Table 3:** Maryland Predicted % of Illicit *Cannabis* Between Months 49 and 60 After Adult Use Implementation.

Number of dispensaries	Effective tax rate	Month of implementation		
		49–52	53–56	57–60
<b>100–250</b>	<b>10%</b>	33%	32%	31%
	<b>15%</b>	35%	34%	34%
	<b>20%</b>	38%	37%	36%
	<b>25%</b>	40%	39%	38%
	<b>30%</b>	42%	41%	41%
<b>260–500</b>	<b>10%</b>	28%	27%	26%
	<b>15%</b>	30%	29%	29%
	<b>20%</b>	33%	32%	31%
	<b>25%</b>	35%	34%	33%
	<b>30%</b>	37%	36%	36%
<b>500–800</b>	<b>10%</b>	23%	22%	21%
	<b>15%</b>	25%	24%	24%
	<b>20%</b>	28%	27%	26%
	<b>25%</b>	30%	29%	28%
	<b>30%</b>	32%	31%	31%



In addition to those two simulated policies, the answers to question #4 proposed in the *Looking Outward* section indicated something unique. While *Cannabis* consumers did not prioritize delivery as a factor in purchasing, they did indicate that they would utilize this source specifically, leading to a predicted 13% increase in regulated sales should Maryland allow for delivery.

At the time of this experimental policymaking project, the status quo for launching an adult use *Cannabis* market was transitioning away from waiting until all or a majority of new licensees were prepared to opening the market with existing medical *Cannabis* licensees and having new licensees progressively enter the market. The reason for this approach is to better meet consumer demand with urgency and prevent the illicit market from thriving while the new industry rolls out, as getting a retail store licensed and open with regulated products can take over a year. In addition to this trend, there is a continued struggle to improve the ability of social equity licensees to capture and retain market share. When states launch with medical *Cannabis* licenses, the first-to-market strategy is quickly absorbed. The predictive data point of delivery increasing regulated sales by 13% posed an opportunity to address the ongoing issue of urgency while supporting social equity businesses.

The experimental policymaking project suggested an innovative opportunity to start the market with current medical *Cannabis* licensees while also allowing for social equity licensees to operate a delivery store without the requirement or necessity of a brick-and-mortar location. This model would mirror an Amazon-style model, having lower start-up costs and the ability to begin operating quickly. This would effectively allow a delivery licensee to obtain regulated product quickly from current medical *Cannabis* licensees and to share in the first-to-market strategy.

The experimental policymaking project led to innovation in three foundational components of *Cannabis* legislation. The optimal taxation rates, amount of retail licenses, and the type of delivery model were all incorporated into the bill's initial language, making it arguably the most data-informed and innovative statute introduced in *Cannabis* history. The State of Maryland originally incorporated these components in an effort to get its program right from the start. However, experimental policymaking can happen at any point across the regulatory continuum. States with mature markets can easily test the effects of a policy change prior to implementation. The impact of delivery on regulated sales could serve as an excellent example for those that still prohibit this activity. As Maryland has demonstrated, policymakers can reduce long-term risk, increase efficiencies, and even identify areas of opportunity for originality by looking forward.

## Part III. Looking inward

The *Cannabis* industry follows the microeconomic principles that every other industry must face, including the law of supply and demand. *Cannabis*, a consumer good, can experience supply outpacing demand, and price plummeting as a result. *Looking Outward* and *Looking Forward* focus primarily on demand, using consumer behavior data to identify areas of innovation within *Cannabis* policymaking. Looking at demand has served as an avenue for finding opportunities as opposed to problems. However, demand is only one variable in this equation, and identifying and addressing opportunities does not negate the need to address and mitigate problems.

At the time of writing this chapter, overproduction from mature *Cannabis* markets serves as a cautionary tale for those launching new *Cannabis* markets. States such as Colorado and Michigan have experienced overproduction and plummeting prices to the point of business owners inching closer to failure [15]. The industry members from these states have called for their regulators to help mitigate this problem, but for some, the issue is already apparent [16]. This is a perfect example of a missed opportunity for regulators to *Look Inward* at the data they have readily available. Recall, innovation happens when policymakers can move from being reactive to being proactive.

Each *Cannabis* program has critical policy elements that make up its foundation, one vital element being product traceability systems. Traceability within each state *Cannabis* program, also known as Track-and-Trace, is vital for monitoring how *Cannabis* product supply is moving through the supply chain from the point of cultivation to the point of sale. By far, Track-and-Trace is the most exhaustive data system in all of *Cannabis*. Importantly, a form of these systems is statutorily required for nearly every *Cannabis* program in the United States. These systems capture millions of useful data points weekly. **The *Cannabis* field is not devoid of data; it is devoid of efforts to make existing data truly meaningful.** By looking inward at the data that all *Cannabis* programs are mandated to collect, regulators can spot problems in real time and become innovative.

As part of standard *Cannabis* regulatory compliance, licensees are required to report their current production inventory in the Track-and-Trace system. This production inventory is tracked by individual plant count, by canopy square footage, or by both. Relatedly, most states place a maximum capacity for production inventory through licensing tiers. For example, a Tier 1 cultivation licensee may cultivate 500 square feet of canopy, whereas a Tier 4 cultivation licensee may cultivate 20,000 square feet of canopy. Although Tier 4 licensees are permitted to cultivate up to 20,000 square feet of canopy, that maximum capacity is not always reached. Typically, licensees will scale up to meet capacity over time as market capture expands and economies of scale are achieved. This trend is to be expected after launching a market as demand becomes met overtime. Should *Cannabis* programs observe the opposite trend – cultivators beginning to drastically reduce their production inventory and

move away from their maximum capacity – an alarm should go off. This trend points to a slowly brewing overproduction problem.

When this trend is observed, a plummet of wholesale prices is likely to coincide, inevitably leading to *Cannabis* products being left without an outlet. This exact observation is best showcased in Oregon, one of the first states to experience a problem with oversupply, resulting in a projected 6.5 years' worth of inventory [17]. A supply and demand report prepared by the Oregon Liquor and *Cannabis* Commission analyzed Track-and-Trace data from 2017 to 2018 demonstrating these trends. This report is an annual legislative mandate and was produced in 2019, months after these trends started to appear and become exacerbated. Instead of being in a position to prevent this colossal market problem, the policymakers in Oregon were now tasked with fixing it. As a result, the Commission established a moratorium on producer licenses, a production management policy utilized in many industries where licenses are required [18]. However, due to a surplus in backlogged applications, production still expanded, and market problems prevailed.

As this story relates to innovation, the critical takeaway is that the data that prompted a reaction to this problem is the same data that could have been used to prevent it. The only difference is, in preventing the problem, policymakers *Look Inward*, monitor data as opposed to aggregate and analyze annually. Real-time monitoring is an example of efficiency, and efficiency is a tool of innovation.

Years after their attempts to correct the market from its 2019 supply glut, policymakers in Oregon learned from this mistake. In 2022, supply data was pointing to a resurgence of the same problem – overproduction. As a result of this market monitoring, the Commission was able to place a moratorium on licensing until March 2024 [19]. While it may be too soon to declare, the timing of this policy is likely to aid in the prevention of the market returning back to 2017 conditions. The annual supply and demand report provided to the legislature this year echoes similar sentiments [20]. When looking inward and viewing the single statutorily required *Cannabis* data system not just as technology for licensee compliance but as a vital information hub, policymakers can make data meaningful, witness problems as they arise, and become efficient.

Interestingly, the 2019 and 2022 policies discussed in this case study are identical in their intent. This fact alone may bring into question how *Looking Inward* may be perceived as a process for innovating in *Cannabis* policy. This brings us back to the original point, that the focus of innovation in *Cannabis* policymaking should center less on the policy to create (the “what”) and more on the process by which the policy can be created (the “how”). In 2019, the moratorium was issued too late. The problem had already arisen and had an additional backlog of contributing complications, like pending producer applications and an increasing gray market, that couldn't be overlooked. In 2022, the problem of overproduction was just beginning to rear its head, with a potential market devaluation to follow. The innovation seen here is simply identifying the optimal timing. For a brand-new industry where much of the decision-

making is through trial and error, getting something as simple as timing correct can be an example of innovation.

## Conclusion

This chapter would be remiss to not make mention of the current climate of *Cannabis*. The “green rush” has seemingly come to an end and businesses across the country have been pushed into turmoil, many closing their operations [21]. At the same time, legalization will undoubtedly prevail. This will include federal involvement, be it through the rescheduling or de-scheduling of *Cannabis* in the Controlled Substance Act, or national *Cannabis* legalization with federal regulations and oversight. Just as policymakers begin to find their footing in their own state-confined markets, the landscape is going to rapidly evolve with interstate commerce. Instead of seeing these changes as a daunting exercise in trial and error, policymakers find themselves in the perfect opportunity to deploy the *Outward*, *Forward*, and *Inward* practices described in this chapter.

Through appropriate demand surveillance (*Looking Outward*), agencies can have an empirical baseline understanding of their consumer behavior with current market conditions and identify areas ripe for improvement while on the precipice of change. Through experimental policymaking (*Looking Forward*), agencies can make confident predictions about how their consumers may behave in future market conditions, like when interstate sales begin. Finally, by *Looking Inward*, agencies can make the millions of data points they already collect meaningful, and better prepare their market for inevitable national influence.

When interstate commerce is authorized, be it through federal reform, state agreements, or decided through the courts, states will need uniformity in data collection and analyses. Such standardization isn’t just vital for research, it could very well be required of evolving state and federal laws. Thankfully, these three practices can be standardized with great ease. Organizations like the *Cannabis* Regulators Association have emerged with this specific intent; to identify best practices and standardize them [22]. As *Cannabis* policy enters its next phase of maturity, innovation isn’t just possible, it’s assured.

## References

- [1] Where marijuana is legal in the United States. MJBizDaily. (Accessed February 6, 2022 at <https://mjbizdaily.com/map-of-us-marijuana-legalization-by-state/>.)
- [2] New York State now prepared to shut down illegal cannabis shops. Gov. Hochul says. CBS News, 2023. (Accessed June 22, 2023 at <https://www.cbsnews.com/newyork/news/illegal-cannabis-shops-that-continue-sales-will-be-shut-down-hochul-says/>.)

- [3] Sofis MJ. Regulatory determinants of cannabis outcomes survey. Cannabis Public Policy Consulting, 2022. (Accessed March 3, 2023 at <https://www.cannabispublicpolicyconsulting.com/wp-content/uploads/2022/06/Report-4.27-V.2.1.pdf>.)
- [4] Sofis M, Slade M. Maine Office of Cannabis Policy Cannabis Markets & Associated Outcomes – Survey Findings and Implications. Sudbury, MA: Advocates for Human Potential, Inc, 2022. (Accessed March 3, 2023 at [https://www.maine.gov/dafs/ocp/sites/maine.gov.dafs.ocp/files/inline-files/Maine%20OCP%20AHP%20Report%2006-22\\_0.pdf](https://www.maine.gov/dafs/ocp/sites/maine.gov.dafs.ocp/files/inline-files/Maine%20OCP%20AHP%20Report%2006-22_0.pdf).)
- [5] Amlung M, Reed DD, Morris V, Aston ER, Metrik J, MacKillop J. Price Elasticity of Illegal Versus Legal Cannabis: A Behavioral Economic Substitutability Analysis. *Addiction* 2019;114:112–118. (Accessed March 3, 2023 at <https://doi.org/10.1111/add.14437>.)
- [6] Sofis MJ. Regulatory determinants of cannabis outcomes survey. Cannabis Public Policy Consulting, 2022. (Accessed June 23, 2023 at <https://www.cannabispublicpolicyconsulting.com/regulatory-determinants-of-cannabis-outcomes-survey/>)
- [7] Wade C. Tax revenue: Maine will share its pot with local governments. *The Center Square*, 2022. (Accessed March 3, 2023 at [https://www.thecentersquare.com/maine/tax-revenue-maine-will-share-its-pot-with-local-governments/article\\_eb8659be-c639-11ec-8202-7b7642805c4e.html#:~:text=The%20measure%2C%20which%20was%20recently,up%20to%20%2420%2C000%20a%20year.](https://www.thecentersquare.com/maine/tax-revenue-maine-will-share-its-pot-with-local-governments/article_eb8659be-c639-11ec-8202-7b7642805c4e.html#:~:text=The%20measure%2C%20which%20was%20recently,up%20to%20%2420%2C000%20a%20year.))
- [8] An act to require the state to distribute 25 percent of adult use marijuana retail sales and excise tax revenue to generating municipalities. 129th Maine Legislature, HP0260, LD 335, item 1. (Accessed March 3, 2023 at [https://legislature.maine.gov/legis/bills/bills\\_129th/billtexts/HP026001.asp](https://legislature.maine.gov/legis/bills/bills_129th/billtexts/HP026001.asp).)
- [9] Exploring policy innovation: Tools, techniques + approaches. Toronto, ON, Brookfield Institute for Innovation +Entrepreneurship, 2018. (Accessed March 3, 2023 at <https://brookfieldinstitute.ca/wp-content/uploads/BrookfieldInstitute-PIP-Landscape-1.pdf>.)
- [10] Bernardo Gois FN, Lima A, Santos K et al. Predictive models to the COVID-19. *Data Science for COVID-19* 2021, 1–24. (Accessed March 3, 2023 at <https://doi.org/10.1016/B978-0-12-824536-1.00023-X>.)
- [11] Mervosh S, Lu D, Swales V. See which states and cities have told residents to stay at home. *The New York Times*, 2020. (Accessed March 3, 2023 at <https://www.nytimes.com/interactive/2020/us/coronavirus-stay-at-home-order.html>.)
- [12] Puffert D. Path dependence. *EH.Net Encyclopedia*, 2008. (Accessed March 3, 2023 at <http://eh.net/encyclopedia/path-dependence/>.)
- [13] Cannabis policy simulation lab. Cannabis Public Policy Consulting. (Accessed March 3, 2023 at <https://www.cannabispublicpolicyconsulting.com/cannabis-policy-simulation-lab/>.)
- [14] Sofis M, Slade M. Future adult use cannabis demand & predictive modeling: A behavioral economic study. Cannabis Public Policy Consulting, 2023. (Accessed March 3, 2023 at [https://mgaleg.maryland.gov/meeting\\_material/2023/scr%20-%20133174234517847255%20-%20Market%20Study%20Report\\_01052023.pdf](https://mgaleg.maryland.gov/meeting_material/2023/scr%20-%20133174234517847255%20-%20Market%20Study%20Report_01052023.pdf).)
- [15] Schaneman B. 10 marijuana industry trends to watch for in 2023. *MJBiz Daily*, 2023. (Accessed March 3, 2023 at <https://mjbizdaily.com/10-cannabis-industry-trends-to-watch-for-in-2023/>.)
- [16] A national weed glut is causing prices to plummet and imperiling businesses. *Politico*, 2022. (Accessed March 3, 2023 at <https://www.politico.com/news/2022/12/25/weed-prices-business-michigan-00075485>.)
- [17] 2019 Recreational marijuana supply and demand legislative report. Portland, Oregon, Oregon Liquor Control Commission, 2019. (Accessed March 3, 2023 at [https://www.oregon.gov/olcc/marijuana/Documents/Bulletins/2019%20Supply%20and%20Demand%20Legislative%20Report%20FINAL%20for%20Publication\(PDFA\).pdf](https://www.oregon.gov/olcc/marijuana/Documents/Bulletins/2019%20Supply%20and%20Demand%20Legislative%20Report%20FINAL%20for%20Publication(PDFA).pdf).)
- [18] Oregon Liquor Control Commission listening tour. Oregon Liquor Control Commission, 2019. (Accessed March 3, 2023 at [https://www.oregon.gov/olcc/marijuana/Documents/Listening\\_Sessions/Marijuana\\_Listening\\_Sessions\\_Handouts.pdf](https://www.oregon.gov/olcc/marijuana/Documents/Listening_Sessions/Marijuana_Listening_Sessions_Handouts.pdf).)

- [19] Permanent administrative order OLCC 201-2022. Salem, Oregon, Office of the Secretary of State, 2022. (Accessed March 3, 2023 at <https://www.oregon.gov/olcc/marijuana/Documents/Rules/MJ-License-Moratorium.pdf>.)
- [20] 2023 Recreational marijuana supply and demand legislative report. Oregon Liquor and Cannabis Commission, 2023. (Accessed March 3, 2023 at <https://www.oregon.gov/olcc/Docs/reports/2023-Supply-and-Demand-Report.pdf>.)
- [21] Cannabis MSO Trulieve ceasing operations in Massachusetts, MJBizzDaily, 2023. (Accessed June 13, 2023 at <https://mjbizdaily.com/cannabis-mso-trulieve-ceasing-operations-in-massachusetts/>.)
- [22] Cannabis Regulators Association ([cann-ra.org](http://cann-ra.org))