Evidence Based Public Policy Making: A Comparative Case Study Analysis

Evidence Based Public Policy Making: A Comparative Case Study Analysis

Researchers: William Boo, Hazel Genieser, Simon Ma, Aldo Stefanoni, Anna Umeda
Directors: Mollie Cheng, Lea Han
Senior Directors: Tomoki Matsuno, Ayumi Nagatomi

Harvard Undergraduate Japan Policy Network, Harvard College

April 20, 2024

Abstract:

Evidence Based Public Policy, widely referred to as EBPM, is a popular framework adopted by governments to forward legislation informed by robust evidence. Intuitively, the use of unbiased, accurate information seems to be an assumption for crafting quality policies today. However, obstacles such as the means through which such information is collected, the nature of data and information, and translating these findings into policies marr the path to sound policy development. This report examines previous policies implemented in Washington State of the United States, federal United States, Singapore, the United Kingdom, and Canada to conduct a comparative case study analysis on challenges overcome, measures taken to succeed, and key takeaways for the Japanese government. Furthermore, interviews with experts in relevant fields glean insights into the nuances of translating evidence to policy work. Valuable understandings are created through these case studies, including the usage of tailored approaches, data-driven decision-making, and public involvement for successful policymaking in varied circumstances.

1. Introduction

Before any discussion of EBPM takes place, it is important to consolidate a definition that our case studies will expand upon. Broadly defined, EBPM is the process of collecting unbiased evidence, translating evidence into actionable insights, and converting such findings into tangible policies. According to Professor Rachel Meltzer, Plimpton Associate Professor of Planning and Urban Economics at Harvard University's Graduate School of Design, EBPM can be analyzed "both vertically and horizontally". First, a vertical definition of EBPM refers to the process of refining the transition between the several steps taken from data collection to measurements of a policy's success. Second, a definition of EBPM refers to the application of evidence to various sectors in a country and how the approaches to incorporating data differ across industries. This two-pronged definition of EBPM captures the nation-wide significance of the practice, as it is not only an internal mechanism to hold governments accountable for policies passed but an external measure of success for various sectors that contribute to a society and economy's growth.

2. Summary of Findings By Study

In this section, a brief summary of our case studies will be presented with an emphasis on key takeaways. In-depth analysis can be found in the following section.

2.1 The United States: Chattanooga Tennessee Police Department

In the United States, efforts to recruit individuals towards public sector jobs — more specifically, joining the Police Department — have led the state of Tennessee to implement the Public Service Motivation Messaging project. In the 2010s, the Chattanooga Tennessee Police Department sought to obtain a more diverse group of individuals within their workforce. While the city of Chattanooga was more racially and ethnically diverse, the police department was mostly white and male. As a part of their efforts, the department incorporated a randomized controlled trial that examined how different types of messaging within mail that was centered on encouraging individuals to join the police workforce would lead to the greatest number of police workforce applications and enrollment. There were four different types of messaging focused on various psychological areas, ranging from emphasis on community impact to personal career benefits. Ultimately, the Public Service Motivation Messaging efforts showcased both successes and failures. Though these efforts overall failed to lead to a change in racial background of the police workforce, they showcased what types of the messaging led to the greatest number of enrollment and applications.

2.2 The United Kingdom: Department of Education; the Learning and Skills Council (LSC); the National Centre for Social Research

In the United Kingdom — more specifically, England, Northern Ireland, Scotland, and Walwa— the Department of Education, as well as other governmental and nongovernmental bodies, convened to create and implement the Educational Maintenance Allowance scheme. This scheme sought to increase rates of young, low-income teens staying in education or vocational studies by providing monetary compensation as rewards. In doing so, robust and detailed data collection was implemented through various stakeholder actions. From observation visits from the Learning Skills and Development Agency, a governmental body, to various questionnaires and raw data collected by schools participating in the study, different types of data were collected. This data allowed for the scheme to identify the shortcomings and challenges within the implementation process during the pilot phase from 1999 to 2003. Ultimately, this allowed for revision and improvement of institutional delays and other issues; in 2004, the actual program was launched successfully. The program not only led to increased rates of educational attainment and decrease in crime within the age range, it also showcased how raw data could be collected by various bodies and how government programs could obtain new findings from data to improve implementation.

2.3 Singapore: the Ministry of Health

In 2023, the Singaporean Ministry of Health created the Healthier SG Initiative, which sought to encourage and steer citizens towards a "healthier lifestyle" and focus on preventative care within healthcare delivery. In doing so, the Initiative took two actions; First, it pushed citizens to create closer, long-term relationships with family doctors, who would establish and encourage health goals that were customized for patients. Second, it sought to integrate various actors involved in healthcare, ranging from community partners, agencies, doctors, and healthcare IT infrastructure, to improve access to health-related initiatives, but also enhance the usage of data submission and health-centered mobile applications which would allow individuals to obtain results on personal health outcomes and progress. Ultimately, challenges have been identified from the Healthier SG initiative with regards to implementation and effectiveness of actions. The payment and billing system adjustments, along with challenges in effective usage of IT systems by healthcare professionals and administrative healthcare management problems, showcase how potential shortcomings may have emerged from this Initiative, potentially hindering goal attainments.

2.4 The United States: the State of Washington

The State of Washington, led by Governor Jay Inslee, implemented the Results Washington initiative in 2014, which emphasized five goals — "World Class Education," "Healthy and Safe Communities," "Effective," and "Accountable Government." The initiative sought to improve the government operational system and public sector performance management through two different operational efficiency actions — performance management and employee-driven lean process improvement. An executive order was implemented, focusing on engaging with the public through surveys, public feedback, and the meetings with the governor. This also allowed for accountability of the government on delivering best results for the public. Ultimately, this policy led to improvement in financial savings for the state government, especially within tax money, along with improvements within other sectors such as the department of licensing and decreased crime rates.

2.5 Canada: An Analysis of Healthcare, Education, and Indigenous Rights

In Canada, the federalist system — including decentralized local governments — provides fertile ground for EBPM because local governments can work more efficiently to solve their problems, and because the parliamentary system allows for policies to pass into law more often than the factionary US congressional system. Within Canadian policies, this section includes four case studies. First, the Ontario Poverty Reduction Strategy ("process success") was started by researchers who saw explicit ways to improve poverty in Ontario, and emerged as a success as it continually produced concrete evidence to give politicians the firepower to fight for change. Second, the Supervised Injection Sites in Vancouver's Downtown Eastside ("process success") led to a reduction in drug-related harm and was made possible by a long campaign by health officials, drug addicts, impacted family members, and a growing number of politicians. Third, Canadian Research universities' research outputs were modernized ("process success") upon gaining a budget surplus in 1997, when the Prime Minister acted quickly with minimal input from the public and with the counsel of high-level government and university officials. Fourth, the federal government's lethargy in fixing contaminated water in Indigenous communities ("conflicted success") may be attributed directly to the lack of Indigenous representation in government. Despite knowing how to fix the issue (having fixed it in Canadian towns), the government did not allocate enough resources to adequately fix the water supply, showcasing the potential pitfalls of the policy. Ultimately, through these four studies, Canada provides an abundance of examples of policy successes and failures.

3. Case Studies

This section contains detailed case studies previously summarized. Each article contains the following information:

Context - Each case study focuses on one country and a specific sector that the government attempted to establish legislation for. Specific agencies within the government are referenced to provide a better understanding of the internal delegation of EBPM tasks. Furthermore, the issue that the government attempted to address is described in detail, with both quantitative and qualitative descriptions to corroborate.

Implementation - The methods through which the government addressed this issue are detailed in the case study. This varies depending on the policy, demonstrating the flexibility required of agencies when addressing issues of different sectors in various political climates. In several case studies, the extent of policy enforcement is also discussed.

Results - The outcomes of the evidence-based policy are described and quantified. These results are compared to an inferred measure of success and evaluated on its efficacy. Areas of inadequacy and failure are also noted followed by possible mitigation strategies.

Takeaways - Key findings are gleaned from each study, with a focus on what Japan and the Digital Agency can learn from these cases. Actionable takeaways and helpful measures to foster a culture of EBPM are included.

3.1 Tennessee Police Department: Tennessee State

The gold standard of evidence based policy making (EBPM), the randomized controlled trial, is more feasible and lower cost than one may think. As demographics have shifted in the United States, interest in working government jobs has waned. Thus, examining the public service motivation messaging to encourage people to join government positions in the United States can demonstrate a facet of EBPM which can be broadly applied. In the realm of low-cost, large-scale government programs, implementing randomized controlled trials can be a method for governments to assess the effectiveness of policies and foster a culture that embraces evidence-based policy making. Here, our case study focuses on Public Service Motivation Messaging, which was the Chattanooga Tennessee Police Department's efforts to recruit a more diverse workforce in the late 2010s (Sherwin).

Prior to the Chattanooga Police Department's efforts, the police department was 78% white and 93% male while Chattanooga was 56% white, 35% black, 6% Hispanic, and 2% Asian (Linos 72). In response, they designed a randomized controlled trial testing the phrasing of mailers based on different psychological theories about what would most motivate people to join as to create a more representative organization.

These specific messages were generally aligned with 4 motivations: the intrinsic challenge of police work, the act of service of joining the police, the impact of one's work on their community, and the benefits police work could provide one's career (73).

In this specific case, the two parties involved were the government agency (the police department) and the general public, particularly individuals from underrepresented races whom the police department aimed to recruit. The general public's only involvement in this process was to inform the police of their interest or lack of interest in joining the police force.

Incorporating randomized controlled trials can yield four key benefits: increased data collection, cultural learning, quicker decision making, and the discovery of unexpected outcomes. However, there was no significant difference in responses to the different mailers, suggesting that this experiment did not achieve its desired results. Despite not achieving a positive outcome in terms of increasing diversity, the process still yielded valuable data and facilitated the participants' familiarity with evidence-based policy making.

The results of the randomized controlled trials found that mailers which highlighted the act of service did not increase applications, yet enrollment was, in fact, increased by mailers which highlighted the impact of one's work and mailers which highlighted the job benefits. Mailers which demonstrated the challenge of working for the police had the largest benefit, which is corroborated by other psychological findings (Mandava).

However, deeper research found that the type of messaging was insignificant when researchers considered only those applicants who stayed in the application process until the end (Using Behavioral Insights), thus suggesting that applicants who received the service and impact mailers were more motivated than those who received the mailers touting the personal benefits of working for the police.

Thus, this implementation of EBPM was not successful in that it generated the desired result, but was nonetheless important in that it increased overall knowledge about the dynamics of the police recruitment process as well as generated more directed thinking about how the police department could incorporate data by low cost methods to gain more certainty about their actions. The police department wanted to send out a certain number of mailers regardless, thus there was no cost for sending the different messages.

Even though there were no strong positive results from this experiment as the racial makeup of the police department did not significantly change (Mandava), the ease with which government and government adjacent organizations can enact true randomized controlled trials is a key takeaway. Negative results are worthwhile in that they reveal what does not work, and knowing more strongly what not to do is a step towards more often making positive decisions. Thus, I would argue that this example of evidence based policy is not a failure, but rather a negative result. Negative results, while not as motivating as positive results, are still necessary in the process of building a government which embraces the evidence based policy making process. In conclusion, the implementation of randomized controlled trials in internal and external messaging– as well as any other applicable area in which individuals must interact with an object of government bureaucracy– is a promising field in which low cost and significant randomized controlled trials, and more broadly, evidence-based policy making, can be undertaken.

3.2 Education: United Kingdom

This case study focuses on the UK's successful Educational Maintenance Allowance scheme, which used continuous evidence collection and reference as its bedrock for its success. In addition, interconnectedness between different stakeholders in the policy contributed enormously to its positive end results. In delving deeper into the specifics of this policy, these two aspects of good EBPM practice can be learned from and implemented across different sectors and policy areas.

The Educational Maintenance Allowance was a scheme designed to encourage young people from low-income families to stay in education by paying them a sum of money provided they attend their course schedule weekly. Low-income 16-to-19 year olds enrolled in 12 or more hours of educational or vocational training were deemed eligible. After extensive trialing through pilot schemes in the 1999 to 2003 period, the program was launched in each of the UK's four countries in 2004 with much success. Not only did the scheme achieve its primary goal of keeping young people in education – with a four percentage point increase of 16 year olds staying in education and a six percentage point increase of 17 year olds staying in education– wider, tangible social benefits were also observed, such as a decrease in burglaries perpetrated by that age group, falling to about 1.5 out of 1000 relative to areas without the scheme.

Importantly, the extensive data collection and analysis that was carried out during the pilot programs contributed greatly to the refinement of the program's actual implementation, translating into its overall success upon its nationwide launch. Fairly inexpensive, routine methods of data collection can be observed in the development of the Educational Maintenance Allowance scheme. In particular, schools in the piloted areas, largely responsible for the promotion of the scheme to their student body, were given questionnaires asking about particular observed challenges, trends, successes and general raw data figures in implementation and uptake. This was complemented by follow-up phone calls and observation visits from the Learning Skills and Development Agency, the stakeholder in charge of the study.

Consequently, the questionnaires highlighted pervasive issues within the pilot scheme brought up by schools that could be rectified effectively in the next stage of implementation of the program. This included definitional issues, institutional delays and other problems. Thereafter, problems and their partner solutions were sorted in an "implication" section for the reference of the different institutions involved in the project, like individual schools or administration within the Department for Education. Here, evidence was crucial in identifying deficits and contributing to the general improvement of the scheme. Importantly, raw data was able to contribute to the statistical analysis of trends in enrollment and achievement by subgroups like gender and ethnic group.

Additionally, this case study highlights the value of stakeholder engagement and institutional interconnectedness in policy success. This is highlighted by the convening of all stakeholders involved in the process in a seminar including the schools involved in the study, the Department for Education, the Learning and Skills Council (LSC), the Centre for Research in Social Policy at Loughborough University, and the National Centre for Social Research to discuss the data and next steps.

It is important to mention that the Educational Maintenance Allowance scheme is no longer in place in England, although it continues in Northern Ireland, Scotland and Wales. This demonstrates a key point in regard to EBPM: although evidence can inform policy, ultimately decision-making is political. The scheme was scrapped in England after a series of budget cuts were implemented by the new coalition government of 2010 who did not want to be viewed as giving 'handouts.'

The main takeaway from this case study is the importance of comprehensive data collection and analysis in successful evidence-informed policy, as well as continuous stakeholder engagement and interconnectedness. Comprehensive data collection also contributes to increased transparency; ultimately, such approaches can be applied to many different policy areas.

3.3 Healthcare: Singapore

In the ever-evolving landscape of Singapore's healthcare sector, the spotlight has intensified on the nexus between an aging demographic and the sustainability of health systems. The shift in population dynamics, where the proportion of elderly citizens is expected to quadruple by 2030, presents a profound paradigm shift for public health strategies, economic resilience, and societal frameworks.

Singapore's rapidly aging population, with a significant shift from 1 in 10 Singaporeans aged 65 and above in 2010 to an expected 1 in 4 by 2030. This demographic change poses challenges to healthcare systems, economy, and societal structure.

The challenges posed by Singapore's rapidly aging population, particularly in the healthcare sector, are multifaceted and significant. One of the key challenges is the surge in the elderly population with multiple chronic diseases, which has led to an increased number of adults struggling with basic activities of daily living (ADL), such as eating and showering. This not only reflects the severity of the health conditions but also the increasing need for medical attention, medication, procedures, and longer hospital stays (Pacific Prime Insurance, 2019).

The prevalence of non-communicable diseases such as heart disease and diabetes is a major concern. As these chronic conditions become more common, they present significant challenges to the healthcare delivery and financing systems in Singapore. This increase in healthcare demand and the associated costs put a considerable strain on both the individuals and the healthcare system.

For further insights, the research program at the Lee Kuan Yew School of Public Policy at the National University of Singapore highlights other aspects of the aging population challenge. It examines the social and economic impact of aging, including changes to family structures, employment, entrepreneurship, productivity, savings, and investment. The research also delves into policy implications, such as the necessary social and policy adjustments to adapt to the rapidly changing population composition and how the economy can innovate to allow a smaller and older population to remain dynamic and highly productive.

This case study focuses on the Healthier SG initiative, launched by the Ministry of Health (MOH) in Singapore on July 5, 2023, is geared towards transforming the healthcare delivery strategy from curative to preventive care. The goal of the initiative is to nudge Singaporeans towards adopting a healthier lifestyle. The success of Healthier SG will be measured by how effectively it can benefit over two million Singapore residents aged 40 and above by the end of 2024.

Figure 1: Healthier SG consists of 5 broad strategies: Choice to live healthier, Strong patient-doctor relationships, shift towards Preventative Care, Community Support and Better Care Delivery (through the apps shown above)

Current State of Primary Healthcare in Singapore	Healthier SG Reform Initiatives	Challenges of Healthier SG Initiatives
Primary healthcare is centered around general practitioners (GPs), who see 80% of clinic attendances. Polyclinics offer heavy subsidies for services and medicines, attracting many chronic disease patients.	From July 2023, Healthier SG aims to leverage primary healthcare and community partners to support better health through enrolment with GPs and personalized health plans.	Adjusting payment and billing systems to accommodate new Healthier SG protocols presents challenges, potentially complicating reimbursement processes for GPs and clinics.
The landscape is challenged by an ageing population, chronic disease burden, and rising healthcare costs.	Healthier SG introduces a voluntary enrolment system for residents with GPs, fostering stronger patient-doctor relationships and encouraging preventive care and continuity of care.	Effective usage of IT systems is a significant hurdle, as healthcare professionals must navigate upgraded clinic management systems and integration with national health records.
GPs operate mainly in solo practices, focusing on acute and episodic care. They face challenges in managing complex drug inventories and administrative tasks.	The initiative requires GPs to expand their scope to include social prescribing and preventive monitoring. There's concern over whether compensation is adequate for the additional responsibilities.	The complexities of new work arrangements and expanded services could overwhelm GPs, especially those in solo practices without the support structure to manage increased administrative and clinical demands.
There's less than half of GP clinics enrolled in Healthier SG as of April 2023, indicating potential issues with the onboarding process and workload concerns.	Healthier SG seeks to improve GP enrolment by addressing administrative, compensation, and training needs, aiming for more comprehensive care delivery.	Low enrolment rates reflect apprehension among GPs regarding the sustainability of Healthier SG's model, including fears that the compensation will not offset the increased demands on their time and resources.
Digital health innovation is embraced but requires further integration with Healthier SG, like upgrading clinic management systems to interface with national health records.	Healthier SG promotes the use of digital tools like the Healthy 365 app and upgrades to clinic systems for better health tracking and patient record management.	The challenge lies in ensuring that all healthcare providers are proficient in utilizing new digital tools and systems, which is crucial for the seamless implementation of Healthier SG across both public and private sectors.
Trust issues exist due to the financial gradient between GPs and polyclinics, impacting the doctor-patient relationship.	Fostering trust is key, requiring community education, positive healthcare experiences, and ensuring that GPs feel supported by the government in the new system.	Building trust not only with patients but also among healthcare providers and between providers and the government is essential to overcome skepticism about the new initiatives and to ensure cooperation and compliance.

Table 1: Comparison of the Current State of Primary Healthcare, Healthier SG Reform Initiatives, and Challenges in Singapore

Overall, Healthier SG aims to empower individuals to manage their health, prevent chronic diseases, and achieve better health outcomes with the support of a robust healthcare and community network. The initiative also will happen in tandem with raising retirement and re-employment ages, updating Community Provident Fund[1] schemes for retirement adequacy, and enhancing healthcare infrastructure.

As Singapore rolls out the Healthier SG reform, the impact and effectiveness of the program are yet to be fully assessed. This ambitious initiative is a response to the nation's aging demographic, the increasing burden of chronic diseases, and rising healthcare costs. General practitioners (GPs), who cater to 80% of primary healthcare visits, are at the heart of this strategy. With the reforms kicking off in July 2023, a key aspect has been the enrolment of residents with their chosen GPs, aiming to enhance patient-doctor rapport and emphasizing preventive care. However, with the voluntary nature of GP and resident enrolment, there's a notable challenge in achieving comprehensive coverage. As of February 2024, there is still a capacity for 700,000 more patients to enroll in the program in polyclinics, signaling a need for further incentives to increase participation and effectively serve Singapore's population of over 4 million residents.

Looking at how Singapore's learnings could be applied to Japan, we see that Japan's journey towards digitalization in healthcare has been marked by various challenges and opportunities. There remains a degree of distrust towards digital healthcare solutions among healthcare professionals. To address this, Japan needs to develop a more robust digital ecosystem that enhances the relationship between patients and doctors, leading to better health outcomes. This is in line with what Healthier SG is trying to achieve. This involves not just the adoption of technology, but also a shift in mindset among healthcare professionals towards embracing digital solutions. The Japanese government and healthcare stakeholders are encouraged to work collaboratively towards this goal, focusing on outcomes and patient care.

The Digital Agency of Japan, established in response to these evolving needs, plays a crucial role in this transformation. It can work towards standardizing and ensuring the reliability of digital data, which is essential for advancing healthcare digitalization in the country. This is necessary at every stage of the data life cycle, as mentioned by Ms Hong (see interview notes). The agency's role also extends to regulatory decision-making, emphasizing the use of real-world evidence and data (RWE/RWD) (Matsui & Geary, 2022).

Furthermore, Japan's digital health industry is being driven by its large and aging population, advanced IT infrastructure, and a rapid shift to digitalization accelerated by the COVID-19 pandemic. The government aims to reduce healthcare costs by increasing R&D investment and improving regulations for digital health goods and services. Recent

[1] The Community Provident Fund or CPF is the government-controlled fund that is accrued through compulsory monthly saving plans and re-distributed to the public in the form of subsidies and retirement pensions.

trends indicate a growing consumer interest in cutting-edge digital health products from U.S. companies, suggesting a potential for significant growth in this sector (JETRO, 2023) (International Trade Administration, 2022). The Digital Agency's visit to Washington DC this December could offer some insight into the top digital health products that are available to the government.

Aspect	Details
Digital Health Focus	Emphasis on telehealth, wearable devices, mobile health, telemedicine, and personalized medicine to empower patients and assist in disease prevention, early diagnosis, and management.
Challenges	- Effective implementation of health plans. - Managing increased healthcare demand. - Integration of data systems across healthcare institutions. - Distrust towards digital solutions among healthcare professionals.
Digital Infrastructure	- Wide use of electronic health records (EHRs) across hospitals. - Positioning Japan for utilizing data for health-related purposes including Research and Development.
Professional Mindset Shift	Need for a shift in mindset among healthcare professionals towards embracing digital solutions, focusing on outcomes and patient care.
Digital Agency's Role	- Standardizing and ensuring reliability of digital data. - Regulatory decision-making, emphasizing real-world evidence and data (RWE/RWD).
Industry Drivers	- Large and aging population. - Advanced IT infrastructure. - Shift to digitalization accelerated by the COVID-19 pandemic.
Government Aims	- Reduce healthcare costs by increasing R & D investment. - Improve regulations for digital health goods and services.
Consumer Interest	Growing interest in digital health products from U.S. companies, indicating potential growth in the sector.
Strategic Directions	- Emphasis on integrated care and preventive health measures. - Importance of data sharing and collaboration among healthcare providers. - Continuous adaptation and policy evolution to address aging population's challenges.

Table 2: Key Takeaways for Japan Government

In conclusion, the key takeaways of the Singaporean case study for Japan's Digital Agency involve an emphasis on integrated care and preventive health measures, the importance of data sharing and collaboration among healthcare providers, and the need for continuous adaptation and policy evolution to address the dynamic nature of the aging population's challenges. The future of Japan's healthcare system hinges on its ability to integrate digital solutions effectively, ensuring both efficiency and efficacy in patient care.

3.4 Public Sector Relations: Washington State

In the United States, the state of Washington is recognized as one of the leading states for evidence-based policy making. The Results Washington project was implemented in 2013 by Governor Jay Inslee to reorient the operational system in government and public-sector performance management. The mission of the project is to track Washington's performance in achieving outcomes for five goal areas: World Class Education, Healthy and Safe Communities, Effective, Efficient, and Accountable Government. The project seeks to hold the government accountable for delivering these results.

To address this mission, the program was implemented with two key operational efficiency strategies for government: performance management and employee-driven lean process improvement. Performance management is the process of applying objective information to policy making and management through coordinated actions. It uses evidence to support government planning, funding, and other operations. This enables government officials to recognize success, identify problems, and respond with effective actions to better serve the public. The lean process improvement empowers employees to remove unneeded processing steps as they best understand the processes such as service delivery and administration. Figure 2 illustrates the questions for the purpose, capability, process, and management system to guide the implementation of lean. A third of the workforce has been trained in how to improve processes, and 11% of all state employees have participated in a lean process improvement project which shows how this process is becoming part of the organizational culture (Wiseman, 2017).

Figure 2: Washington State Dept. of Enterprise Services Lean Transformation Services

The implementation of the project follows three steps. First, the project started from a solid foundation among which included the Washington State Institute for Public Policy (WSIPP). The WSIPP was established in 1983 and is now a respected source for cost-benefit analysis and research on the effectiveness of government programs. Some of WSIPP's fundamental public policy questions include the following: "(1) How could the state government better achieve certain public outcomes while providing citizens with a superior return on their tax dollars? (2) Could the legislature use "evidence" and "costs and benefits" to craft strategic policies that would lead to measurable improvement in statewide outcomes?" (Drake, 2012).

Second, an executive order set the priorities for what mattered the most and presented the five general goal categories (that were mentioned earlier) that represented what the Washington public cared about. From the beginning, there was a strong emphasis on the public as the customer and stakeholder of the government. The lean process improvement supports this emphasis on the public by holding the state government accountable for delivering results for the public by tracking their progress for these five goals.

Third, there was expertise from outside sources such as a consulting firm, which helped to guide the key project start-up tasks. There were two steps that were vital with the collaboration with the consulting firm. First, the consultants led workshops that mapped out strategies for the five goals. This resulted in identifying the relationships between strategies and goals and the required resources to achieve the targets. Third, with the goal maps in place, the firm helped to develop a strategic framework that described how the goals fit into the state's vision and mission (Figure 3). Furthermore, for each of the five goals, the team created a "goal council" whose job was to set performance targets, come up with strategies to achieve them, and design ways to measure the progress towards targets.

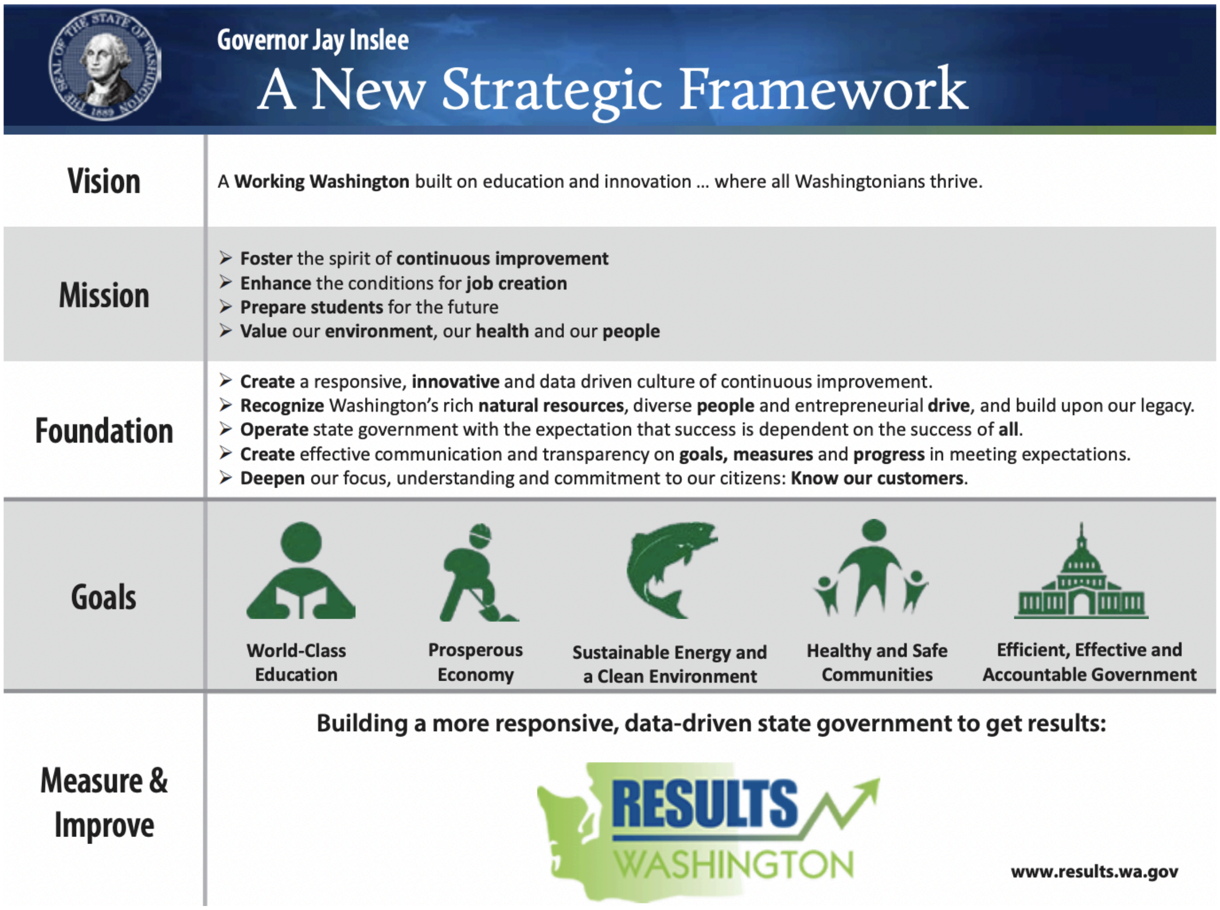

Figure 3: Results Washington Strategic Framework

In terms of results, Washington has proved its success in achieving tangible improvements in life and safety, saving time, saving state money and or increasing revenue. The lean process improvement approach has helped achieve $33 million in total savings and avoided costs, as well as excess working hours which further resulted in improved customer service.

Additionally, $4.5 in value to taxpayers was returned for every $1 that is invested in the lean process improvement program (Wiseman, 2017). Other statistical progress includes "one million hours of time saved waiting in Department of Licensing lobbies using process improvements and partnering with private driver-training schools, [...] 15% decrease in speed-related deaths, [...] 20% faster processing of DNA tests at the Crime Lab, reducing the backlog by 10% and cutting staff overtime 56%, [...] $6.2 million in recovered overpayments from Department of Labor and Industries, a 28%

increase in one year, [...] $2.3 million in savings a year on long-distance phone calls” (Wiseman, 2017).

There are several major takeaways from this case study. Key elements of the Results Washington project’s success lies in public engagement and how it is both top-down and bottom-up. For public engagement, all the meetings with the governor are open to the public both in-person and online. Indeed, the Results Washington website has easy access to the public through user-centric design, and the website has a survey where the public can share feedback.

There is also active outreach such as inviting a team of students to offer insights for discussion on World Class Education and hearing from students with special needs to create programs for inclusivity. This system of public engagement can be used as inspiration for the Japanese government to promote a culture of accountability and gain public support and trust in creating effective policies. As for the top-down and bottom-up system, the governor presides in all monthly meetings and also asks employees for input in state agencies. Employees are empowered through training in lean process improvement with contributions from both the public and private sectors. In conclusion, this top-down and bottom-up system can aid in providing a possible framework for how to restructure government systems to ensure effective and efficient policy-making that listens to the employees.

Specific Suggestions for the Digital Agency:

Aspect	Details
Government Aims	- Increase public engagement with decision processes - Develop a strategic framework with clear and realistic goals for effective policy-making
Stakeholders	- Civil servants - Citizens
Digital Agency’s Role	- Build a foundation for cost-benefit analysis with methods to gather and analyze reliable pieces of evidence
Challenges	- Creating a new organizational culture that is more distinctly bottom-up with more public engagement - Kickstarting the implementation of policy-making based on reliable evidence
Strategic Directions	- Create easier access to government planning information for the public to improve transparency and increase public engagement. Such information should be made easily accessible through official web pages showcasing the goals, plans, and strategies that are being discussed with easy-to-follow graphics and explanations. The web page should ideally have a space for the

	public to comment on and share their ideas as well. - Formulate a strategic framework for each sector the digital agency has a goal in through collaboration with outside sources with expertise such as consulting firms. First, carefully define what EBPM is and the aims/visions the Digital Agency has for what EBPM can accomplish for each specific sector. Then help to track that definition of evidence-based practice through all different publicly owned services. The digital agency should act as a facilitator of this process, and bring together people and groups who have different experiences, expertise, and roles in the policy-making network.

3.5 Healthcare, Education, and Indigenous Rights in Canada

This section discusses four policy successes and failures in Canada, loosely using a framework defined in a widely-cited article written by Allan McConnell. The framework (shown below), uses five criteria to define success: longevity, legitimacy, collaboration, innovation, and community acceptance. Longevity means that the policy has lasted without many changes. Legitimacy examines the degree to which people accept the authority of the new policy. Collaboration measures how well stakeholders and the government have worked together to enact the policy. Innovation looks at how much the policy impacted or changed the status quo. Community acceptance questions whether the community (broadly defined, including the target community and the larger country) have opposed the program. McConnel defines success on a gradient including "process success," "resilient success," "conflicted success," "precarious success," then "process failure."

Although McConnell's framework will inform how this section evaluates the headline outcome of the policy, this section will also provide details of the case study, with the end of each case study summarizing the key takeaways. The end of the section will include a table outlining recommendations for the Digital Agency based on all four case studies.

3.5.1 Table: "Policy as Process: The Spectrum From Success to Failure"

TABLE 1. Policy as Process: The Spectrum From Success to Failure

Process Success	Resilient Success	Conflicted Success	Precarious Success	Process Failure
Preserving government policy goals and instruments.	Policy goals and instruments preserved, despite minor refinements.	Preferred goals and instruments proving controversial and difficult to preserve. Some revisions needed.	Government's goals and preferred policy instruments hang in the balance.	Termination of government policy goals and instruments.
Conferring legitimacy on the policy.	Some challenges to legitimacy but of little or no lasting significance.	Difficult and contested issues surrounding policy legitimacy, with some potential to taint the policy in the long-term.	Serious and potentially fatal damage to policy legitimacy.	Irrecoverable damage to policy legitimacy.
Building a sustainable coalition.	Coalition intact, despite some signs of disagreement.	Coalition intact, although strong signs of disagreement and some potential for fragmentation.	Coalition on the brink of falling apart.	Inability to produce a sustainable coalition.
Symbolizing innovation and influence.	Not ground breaking in innovation or influence, but still symbolically progressive.	Neither innovative nor outmoded, leading at times to criticisms from both progressive and conservatives.	Appearance of being out of touch with viable, alternative solutions.	Symbolizing outmoded, insular or bizarre ideas, seemingly oblivious to how other jurisdictions are dealing with similar issues.
Opposition to process is virtually non-existent and/or support is virtually universal.	Opposition to process is stronger than anticipated, but outweighed by support.	Opposition to process and support are equally balanced.	Opposition to process outweighs small levels of support.	Opposition to process is virtually universal and/or support is virtually non-existent.

Figure 4: Taken from page 352 of "Policy Success, Policy Failure and Grey Areas in-Between" by Allan McConell.

3.5.2 The Ontario Poverty Reduction Strategy (Process Success)

The Ontario Poverty Reduction Strategy (OPRS) was a regional policy in Ontario created in 2008 through the Cabinet Committee on Poverty Reduction. The government was trying to address poverty levels in Ontario by focusing on education, social support, and health care for low socioeconomic status children and adults. The OPRS was a medley of policies that included early childcare, preparation for college, affordable housing, disability support, a review of social welfare policies, and much more. The OPRS focused on investing in pathways out of poverty; it was not a simple welfare program ("Poverty Reduction Strategy (2009 Annual Report)"). Like most democracies, Canada greatly values equality of opportunity, but with around 14% of the population living in poverty as of 2000, a significant portion of the population cannot access the same opportunities as others, given they must spend a disproportionate amount of time worrying about basic survival (E. and S. D. Canada, "A Backgrounder on Poverty in Canada"). To the Ontario government, the moral imperative for the policy was clear.

Researchers stood at the center of this policy, pushing evidence towards politicians who had the power to fight for change. Researchers and their organizations were able to push their evidence under politician's noses because they started and maintained political relationships that granted them access to the political realm as well as the research realm. “Rather than taking for granted that they will be called upon for policy advice, they felt it was necessary to consistently and purposefully bring attention to the work of their respective organizations, to retain their status” (Sohn 8). Researchers and their organizations also utilized persuasion through narrative, framing evidence around a strong imperative (some researchers came up with a number that said that poverty costs Ontario 18 billion dollars a year, which ended up in headlines [Sohn 9]). The researchers also needed to be able to speak to and frame their evidence for different types of politicians running the gamut from welfare-minded politicians to economic freedom-minded politicians. The human element of decision-making, including personal values and moral imperatives, must play into the evidence-producers’ strategy in communicating their evidence and recommendations to politicians (Sohn 6).

Using the after tax low-income cut-off, The OPRS proved itself to be effective in mitigating the growth of child poverty after economic downturn. Compared to the economic downturns in 1981 and 1989, during which child poverty rates increased 17.4% and 30.5% from their low points 3 years after the recessions, the rate increased by only 6.1% from their low point 3 years after the recession (Sohn 4). The OPRS continues to run, proving that it has been accepted by the public without significant opposition (“Poverty Reduction Strategy (2009 Annual Report)”). The federal government created its first poverty reduction strategy in 2018, likely influenced by the success of the OPRS (E. and S. D. Canada, “Canada’s First Poverty Reduction Strategy”).

3.5.3 Insite: Supervised Injection Sites (SIS) (Process Success)

Supervised injection sites are places for drug addicts to inject drugs under the supervision of health officials without punishment. Understanding such a site requires a recognition of the state of Vancouver’s Downtown Eastside. The Downtown Eastside contains a heavy concentration of marginalized individuals who are more vulnerable to drug addiction (Vancouver); in other words, without providing significantly more community support, the government cannot expect drug use to decrease. At the same time, the government can try to reduce harm from drug use. These harms include but are not limited to the spread of diseases from sharing needles, the potential for fatal overdoses, and the danger of public, rushed injections (Levengood et al.). At supervised injection sites, addicts can inject drugs without punishment and under the supervision of medical professionals. Case studies demonstrate the overwhelming benefits of these sites. In one paper looking at injection mortality, harm reduction, access to treatment programs, and crime and public nuisances, across 22 studies, researchers could not find negative outcomes; every study found favorable outcomes in at least one of the four measured results.

Like most evidence-based policy, the implementation of SIS started from the ground up, with addicts, medical professionals, and miscellaneous activists. These advocates recognized the potential benefits of SIS in the late 1980s (Lindquist et al. 59), especially in the context of the HIV/AIDs epidemic during which sharing needles was particularly dangerous. From 1995 to 2003, activists opened several unsanctioned SIS; adjacent medical professionals saw these SIS saving lives (Lindquist et al. 60). As the movement grew, it began to draw more influential government officials who encouraged other officials and the public to see drug use as a health issue, not a criminal act. In 1997, the mayor of Vancouver declared a public health emergency, stimulating the consideration of new solutions. Another supporter came in the form of a conservative Vancouver mayor, who drew in support from typically-opposed people. Although the federal government initially opposed the law on legal grounds (the Controlled Drugs and Substances Act), they agreed to give the first SIS in Vancouver a temporary exemption as a result of a loophole in the aforementioned act (Lindquist et al. 60). Upon observing the positive results of the SIS in Vancouver, other cities began using them (Lindquist et al. 67). They continue to exist today, and even cities in the US have been considering using them (Levengood et al.).

The Vancouver SIS process, although long, proved to be an overall success in that the SIS have lasted, they have reduced harm, and they have inspired others to follow in their steps. The implementation required the incorporation of key political agents to ease social stigma around drug use; policies necessitate social acceptance, which, in turn, requires the voice of a politician—ideally on different parts of the political spectrum. The implementation may be considered a failure on one front: the time it took. Conflicting messages from various harm reduction advocates led to potential for controversy around SIS. Policy advocates must present a coherent front for politicians and the public.

3.5.4 The Modernization of Canadian Research Universities (Process Success)

Canada, in the late 1990s, faced a brain drain in its research universities, where highly qualified researchers moved to other countries (primarily the United States), enticed by more funding and a better research environment (Hoyle 1336). Compared to these other countries, Canada's funding systems presented a number of deficiencies: they did not provide funding for the indirect costs of research (including research supplies, assistant salaries, library books, etc.), grant requests and renewals were inefficient, and total funding was relatively scarce (Lindquist et al. 143). University research stands as a cornerstone of national innovation and global standing, so the government started to become concerned.

In 1997, as a result of frugal spending, Ottawa also found itself with a $11 billion budget surplus. The prime minister of Canada saw this surplus as an opportunity to amend university research funding systems. The four new pillars of funding introduced by the reform were the Canada Foundation for Innovation (CFI), the Canadian Institutes for Health Research (CIHR), the Canada Research Chairs (CRC), and federal funding for the indirect costs of research. The CFI, started with $800 million, provides funding to build research infrastructure; started with $175 million, the CIHR, compared to the previous Medical Research Council of Canada, gives grants to health researchers for longer periods of time and encourages more interuniversity and interdisciplinary collaboration; the CRC program, started with $900 million, gives grants of $200,000 to distinguished scholars and $100,000 to promising researchers; federal funding for the indirect costs of research helped ease universities into greater productivity, which was important because infrastructure costs increase as output increases (143-145). As a result of these initiatives, Canada has maintained its position as a world leader in university research. World rankings prove the lasting strength of Canadian universities: the University of Toronto regularly appears in the top 25, McGill University and the University of British Columbia almost never drop below 50, and a few others (like the University of Montréal) are often in the top 100 ("World University Rankings 2024"). The policy succeeded in achieving long-term, politically-sound success.

The policy was implemented successfully in a relatively short period of time because the initiative came from the prime minister. Prime Minister Chrétien discussed the plan with his network of high-level government officials and university leaders, which included a variety of powerful stakeholders. These stakeholders, able to comprehensively represent their institutions, suggested appropriate revisions like ensuring CRC positions to humanists (Lindquist et al. 145). Chrétien did not open discussions to the public, which would have led to a myriad of conflicting opinions about how to use the surplus. Although policy without public input may sound scary, the policy had grounding in sound evidence. When compared with the supervised injection site example, this research reform example demonstrates how a smaller number of deeply knowledgeable representatives can produce programmatic success while significantly accelerating implementation; such a process was only possible, however, because the idea started with a high-level government official.

3.5.5 Contaminated Water in Indigenous Communities (Conflicted Success)

Indigenous territories find themselves disproportionately impacted by water advisories (where the government tells residents not to drink local water for safety reasons) because indigenous territories in Canada do not receive the same regulation as most Canadian residents. Contaminated water can contain diseases like E. Coli, parasites, and a host of other harmful substances (Orellana). Since the mid-1990s, people have raised concerns that water systems in indigenous areas would be unacceptable in the provinces. Although one law states that Indigenous leaders must take care of the water supply, a number of other laws make that task nearly impossible. The federal government, for example, pays for the operational and maintenance costs of water supplies, but leaves a 20 percent for communities to cover, despite their resources being limited. Additionally, funding by the Indigenous and Northern Affairs Canada—the organization that has jurisdiction over the indigenous areas—has been weak, despite almost yearly budget surpluses. Finally, the government remains relaxed about source water contamination by companies upstream from indigenous communities. No matter what the laws, Canada's constitution ultimately mandates "essential public services of reasonable quality" (Klasing). The government is clearly not doing enough.

To remedy the issue, in 2016, Prime Minister Trudeau announced that the government would spend $4.6 billion on infrastructure for five years to end all drinking water advisories. By 2021, despite improvements, 28 communities continued to face long-term water advisories ("Canada"). The policy cannot be declared a complete success.

Analyzing the failures—both the original failure of contaminated water and the second failure of ineffective solutions—reveals two keys to policy success: stakeholder power and government-stakeholder alliances during implementation. First, the original problem would not have occurred if a diverse array of stakeholders had power in the government. One dismayed volunteer during a water crisis explained that "the city almost treated it like an inconvenience" (Orellana). The government must represent the viewpoints of everybody, not just the dominant force. If Indigenous representatives were given more power in government, it is not unreasonable to believe that they could have called attention to the issue sooner and more comprehensively. Second, the $4.6 billion spent during 2016 and 2021 could have been more efficiently spent had the government worked more closely with the communities (Orellana). Without expertise on water systems, disparate communities could not use the money as efficiently as possible.

3.5.6 Conclusion: Recommendations for the Digital Agency

Recommendation	Details
Fund knowledge transfer programs at universities with people who can effectively communicate to politicians, bridging the gap between science and policy.	- The OPRS' success showed how researchers must communicate with the government to effect change. - Researchers should focus on research and remain separated from politics. - Knowledge transfer experts could be highly knowledgeable people at research institutions who specialize in contacting politicians about researchers' recommendations. - Would not need many people

Develop knowledge transfer expertise in research departments at government agencies to help distill evidence and write reports for the government.	- Same objectives as above, but from the other side. Would need effective communicators who have deep expertise and can distill information from researchers for - Both university knowledge transfer and government knowledge transfer would be helpful to ensure the most helpful knowledge is being transferred to the government. - These experts in knowledge transfer would also help smoothen the enactment of the policy, ensuring effective communication of the research with the public.
Fund more independent research organizations like the Canadian Observatory on Homelessness (where Dr. Sohn works) to encourage unbiased research unfettered by bureaucracy.	- Dr. Sohn noted during the interview that independent research institutions provided a far better working environment than government research arms. - She noted the pressure to align with politics in the government, while the independent research organization had a freer working environment.
Maintain a positive media presence, using news sources and **social media**, to make policy implementation easier.	- The OPRS and the SIS required the government to change minds; people did not want to pay more taxes to fund the OPRS, and they were afraid of encouraging drug use with the SIS. - The OPRS greatly benefitted from articles by famous economists highlighting the dangers of poverty, and the SIS benefitted from community advocacy. - Besides maintaining a positive image on TV and in the newspapers, the Digital Agency has the unique latitude to push forward on social media platforms like Instagram. Although not in line with the ideal governmental image for other departments, the Digital Agency can and should take advantage of social media to showcase cool initiatives. - Maintaining a positive image boosts public credibility.
Ensure diverse representation in	- The case study of contaminated water in

government because people of different backgrounds can act as advocates for minorities.	Indigenous communities provides a prime example of how the majority can ignore the issues of disenfranchised groups. - Japan does not have many foreigners and Indigenous people, but such people are still an integral part of the country, deserving of rights. - The Digital Agency can pave the way with internship programs designed to recruit people of non-Japanese backgrounds.
Maintain constant communication with the target community when developing and implementing any policy.	- Policy should be made for people, so it only makes sense to consult those people. - The OPRS and the SIS succeeded because the movements started in the community. The modernization of Canada's research universities also succeeded because Prime Minister Chrétien worked directly with university leadership, who understood the needs of their community. Meanwhile, the government failed to fix the contaminated water in Indigenous communities because the government did not transfer expertise on how to maintain water systems. - Please see the below table for some pathways to ensure stakeholder participation.

3.5.6 Table

Key Concern	Possible Mechanisms	Specific Goals	Suitable Options
Type of bias addressed			**Consider involving these actors**
Issue bias	Public deliberation of evidence	*Measuring public opinion informed by evidence and debate*	*Naive publics; Researchers*
		Increasing equity and voice in resource distribution	*Affected publics; Policymakers*
Technical bias	Expert advisory bodies and roles	*Prioritizing independence and technical quality of advice*	*Technical experts*
		Balancing technical quality of advice with relevance and transparency	*Technical experts; Policymakers; Affected publics*
Phase of the evidence-policy process			**Consider establishing this relationship with government actors**
Evaluating policy outputs	Policy experimentation and evaluation	*Maximizing policy influence*	*In partnership*
		Challenging the status quo	*Independent*
Inputting evidence into formal decision-making processes	Knowledge mobilization	*Ensuring existing evidence is available to and accessible by policymakers*	*Intermediated*
		Enhancing relevance of evidence base to policymakers' concerns	*In partnership*
Relevant policy concerns			**Consider designating these actors as a locus of authority**
Equity/social justice	Co-production of evidence	*Redistributing power to frame and produce evidence*	*Participating publics*
		Integrating community expertise, scientific rigor and policy impact	*Participating publics; Traditional knowledge users; Traditional knowledge creators*
Contested value-based issues	Public deliberation of evidence	*Using public opinion informed by evidence and deliberation to guide policy decisions*	*Traditional knowledge users*
		Increasing public influence on policy decisions and ensuring accountability to participatory processes	*Participating publics*

Taken from "Mechanisms to Bridge the Gap Between Science and Politics in Evidence-Informed Policymaking: Mapping the Landscape" by Adèle Cassola, Patrick Fafard, Michèle Palkovits, and Steven J. Hoffman

4. Discussion

Across the five different cases, key takeaways about Evidence-Based Policymaking can be consolidated into specific themes, exemplifying how similarities emerge despite the varying topics, players, and localities. Indeed, these takeaways showcase that Evidence-Based Policymaking can be used in various areas of applicability; increase data collection; enhance cultural learning; support quicker decision making; and lead to the discovery of the unexpected.

Area of Applicability: Low-cost, large-scale government programs, such as mailers or emails, can be used to inform the public about opportunities or other necessary information. More complex than information dissemination, areas like social policies, healthcare, education, and childcare can also implement randomized controlled trials. The prerequisites for these trials include low-cost access to administrative data of acceptable quality and a sizable pool of potential participants who can participate without special recruitment efforts.

Increased Data Collection and Quicker Decision Making: Running a randomized controlled trial and recording the results generates data related to the experimental variables. This data can be interpreted within the context of the experiment to determine its success, but can also be used in other contexts to support or question future hypotheses. In addition, regarding quicker decision making, in areas where there is no clear consensus or strong rationale on the best course of action, a randomized controlled trial can expedite the decision-making process.

Cultural Learning: By implementing easy-to-run randomized controlled trials, government bodies can gradually learn about the benefits of evidence-based policy making, as well as the increased levels of digitalization that often accompany data collection processes. Even non-conclusive trials can be beneficial if the value of the collected data is highlighted. With more data, the government agency can better understand their constituents and serve them more effectively in the future.

Discovery of the Unexpected: With a randomized controlled trial, there is always the possibility that the results will differ from expectations. A government's goal is to best serve their constituents, so discovering which processes work and which do not align with the government's purpose. By running a randomized controlled trial, a governmental body creates conditions that allow them to learn something new. For example, if the Chattanooga Police Department had only created one mailer and received very few responses, they might have believed that the single mailer design was incompatible with the general public. Likely the department would allocate more resources in designing better mailers. However, in an alternative scenario, if they ran a randomized controlled trial and sent four different types of mailers and still received very few responses across all four types, the department would have learned that the problem likely wasn't the content of the mailers, but rather that the mailers themselves were not effective at eliciting responses. This is a hypothetical situation, but it demonstrates how randomized controlled trials can lead to unexpected benefits, even in the face of seemingly unsuccessful results.

5. Conclusion

While a key foundation in creating policies is the intuitive reliance on unbiased and accurate information, various challenges are also shown, such as the issue of subjectivity and objectivity of data collection and the data itself, along with the usage of findings to apply towards policymaking. This report showcases a comparative case study analysis of previous policies implemented in Washington State, the federal United States, Singapore, the United Kingdom, and Canada.

Within different case studies, different insights emerge about evidence-based policymaking. In the United States, the Public Service Motivation Messaging project highlights the importance of tailored messaging for public sector recruitment, offering valuable lessons for increased enrollment. The UK's Educational Maintenance Allowance scheme emphasizes continuous improvement and the power of detailed data collection from different angles and different sources. Moreover, the Healthier SG Initiative from Singapore highlights the need to address challenges in implementation and effectiveness, especially when examining adjustments to IT systems and billing systems within healthcare. Finally, the Results Washington initiative in the state of Washington emphasizes the impact of public engagement and operational efficiency on financial savings and sector improvements.

When examining the basis of what makes these case studies successes or failures given their own circumstance, one can also obtain details of the various obstacles in creating and implementing Evidence Based Policymaking, as well as the process of ensuring success. Moreover, through interviews with experts in relevant fields, it is possible to gain a more nuanced view on the process of translating evidence into actionable policy work. The effectiveness of tailored approaches, public involvement from multiple stakeholders, engagement with the public-at-large, and robust data collection through diverse methods ultimately emerge as key insights in these case studies.

References

"A Backgrounder on Poverty in Canada." Canada.ca, 20 Apr. 2022, www.canada.ca/en/employment-social-development/programs/poverty-reduction/backgrounder.html.

"Biomedical Data Lifecycle." Harvard Medical School, 2023, https://datamanagement.hms.harvard.edu/plan-design/biomedical-data-lifecycle.

"Building Digital Ecosystems in Japan." McKinsey & Company, 5 Nov. 2018, https://www.mckinsey.com/industries/life-sciences/our-insights/building-digital-ecosystems-in-japan.

"Canada's First Poverty Reduction Strategy." Canada.ca, 2018, www.canada.ca/en/employment-social-development/programs/poverty-reduction/reports/strategy.html. Accessed 7 Jan. 2024.

"A Backgrounder on Poverty in Canada." Canada.ca, 20 Apr. 2022, www.canada.ca/en/employment-social-development/programs/poverty-reduction/backgrounder.html.

"Canada." Human Rights Watch, 20 Jan. 2023, www.hrw.org/world-report/2023/country-chapters/canada.

"Digital Health on the Rise as Japan's Healthcare System Gets Hi-Tech Makeover." JETRO, 2023, https://www.jetro.go.jp/en/invest/insights/japan-insight/digital-health-rise-japan-healthcare-system-hitech-makeover.html.

"Downtown Eastside." City of Vancouver, vancouver.ca/news-calendar/downtown-eastside.aspx.

Foo, C. D., Chia, H. X., Teo, K. W., Farwin, A., Hashim, J., & Koh, G. C.-H. "Healthier SG: Singapore's Multi-year Strategy to Transform Primary Healthcare." The Lancet Regional Health - Western Pacific, vol. 37, 2023, p. 100861. https://doi.org/10.1016/j.lanwpc.2023.100861.

Gaetz, Steven. "The Real Cost of Homelessness: Can We Save Money by Doing the Right Thing?."Homeless Hub. 2012, www.homelesshub.ca/costofhomelessness.

Hoyle, Brian. "Spending Spree to End Canadian 'brain Drain.'" Nature Medicine, vol. 5, no. 12, Dec. 1999, p. 1336. https://doi.org/10.1038/70889.

Jimmy. "Singapore's Elderly Population with Multiple Chronic Diseases Surges." Pacific Prime Insurance, 30 Aug. 2019, https://www.pacificprime.sg/blog/singapores-elderly-population-with-multiple-chronic-diseases-surges/.

Klasing, Amanda. "Make It Safe." Human Rights Watch, 28 Mar. 2023, www.hrw.org/report/2016/06/07/make-it-safe/canadas-obligation-end-first-nations-water-crisis.

Levengood, Timothy W., et al. “Supervised Injection Facilities as Harm Reduction: A Systematic Review.” American Journal of Preventive Medicine, vol. 61, no. 5, Nov. 2021, pp. 738–49. https://doi.org/10.1016/j.amepre.2021.04.017.

Li Ying, Lee. "Trust between Patients and GPS Key for Healthier SG." The Straits Times, 5 Oct. 2022, https://www.magzter.com/stories/newspaper/The-Straits-Times/TRUST-BETWEEN-PATIENTS-AND-GPS-KEY-FOR-HEALTHIER-SG.

Linos, Elizabeth. “More Than Public Service: A Field Experiment on Job Advertisements and Diversity in the Police.” *Journal of Public Administration Research and Theory*, vol. 28, no. 1, 2018, pp. 67–85, https://doi.org/10.1093/jopart/mux032.

Lindquist, Evert, et al., editors. “Policy Success in Canada.” Oxford University Press eBooks, 2022, https://doi.org/10.1093/oso/9780192897046.001.0001.

"Managing the Challenges of an Aging Society." Institute of Policy Studies, https://lkyspp.nus.edu.sg/ips/research/managing-the-challenges-of-an-aging-society.

Mandava, Siddharth, and Sasha Tregebov. “Why Null Isn’t for Naught.” *Medium*, Medium, 23 Mar. 2018, whatworkscities.medium.com/why-null-isnt-for-naught-7e80b707a306.

"Market Intelligence: Japan Digital Health Industry." International Trade Administration, 12 Sept. 2022, https://www.trade.gov/market-intelligence/japan-digital-health-industry.

Matsui, R., & Geary, S. "Japan and the Pandemic: New Challenges, New Solutions." DIA Global Forum, Feb. 2022, https://globalforum.diaglobal.org/issue/february-2022/japan-and-the-pandemic-new-challenges-new-solutions/.

McConnell, Allan. “Policy Success, Policy Failure and Grey Areas In-Between.” Journal of Public Policy, vol. 30, no. 3, pp. 345–62. https://doi.org/10.1017/s0143814x10000152.

Orellana, Marcos. “Freshwater Canada’s Dirty Water Secret.” Human Rights Watch, 28 Oct. 2020, www.hrw.org/news/2019/04/04/freshwater-canadas-dirty-water-secret.

Santiago, M. "The Revolution of Digital Healthcare in Japan." The Borgen Project, 7 Sept. 2020, https://borgenproject.org/digital-healthcare-revolution/.

Sherwin, Kara. “A Simple Combination of Data and Language Tweaks Is Helping Recruit More Diverse Police Officers.” *Quartz*, 20 Feb. 2017, qz.com/914339/a-simple-combination-of-data-and-language-tweaks-is-helping-recruit-more-diverse-police-officers.

Sohn, Jacqueline. “Navigating the Politics of Evidence-informed Policymaking: Strategies of Influential Policy Actors in Ontario.” Palgrave Communications, vol. 4, no. 1, Apr. 2018, https://doi.org/10.1057/s41599-018-0098-4.

“Poverty Reduction Strategy (2009 Annual Report).” Government of Ontario, www.ontario.ca/page/poverty-reduction-strategy-2009-annual-report.

“Using Behavioral Insights to Build the Police Force of Tomorrow.” *The Behavioural Insights Team*, 23 Jan. 2019, www.bi.team/blogs/using-behavioral-insights-to-build-the-police-force-of-tomorrow/.

“World University Rankings 2024.” Times Higher Education (THE), 21 Dec. 2023, www.timeshighereducation.com/world-university-rankings/2024/world-ranking.