INTERNATIONAL JOURNAL OF LAW MANAGEMENT & HUMANITIES

[ISSN 2581-5369]

Volume 3 | Issue 4

2020

Governing through Artificial Intelligence Driven Policy Processes

VARDAAN SHEKHAWAT[1]

ABSTRACT

Failure and redundancy of public policy, its processes and impact has been spoken of since the inception of modern democracies. While the reasons of failure remain distinct; from a structured nexus of corruption to operational human errors, the resolutions are standard, incompetent and inefficient. Thus, the problem persists. However, this paper contemplates that an incremental model based blend of technology, digitalization and Artificial Intelligence (AI) if structured and incorporated within the policy processes and systems can be revolutionary in bringing forth the necessary adjustments and improvements. The paper introduces AI, its incorporation in the systems of governance and goes ahead to examine its relationship with Data Driven Policy (DDP) processes. It further emphasizes the importance AI and DDP will have in the upcoming decade and looks at AI as a linkage and apparatus to introducing multiple sets of opportunities and advantages within the policy framework. On an operational vertical the paper looks at how AI can be structurally embedded in policy processes right from agenda setting till monitoring and evaluation. The paper delves deeper into the domain of leveraging AI by recommending to follow best practices from previously implemented models of AI in governance. Holistically the paper aims at being a standpoint to enable further research in a discourse that looks at amalgamation of technology and governance as a resolution of frequent public policy failures.

I. INTRODUCTION

Time and again the public policy process is put to question vis-a-vis the kind of impact policies have made and how far policy goals have been achieved. To this, there is an increasing awareness that most social policies may fail on their own merit, especially in developing states. The partial or complete failure of policies can not be attributed to a binary understanding of policy formulation and implementation, but is embedded in a complex nexus of corruption, lack of monitoring and lack of proper evaluation. All this happens at the cost of social upliftment and a compromise of better standards of living. Initiatives of

[1] Author is a student at Kirori Mal College, University Of Delhi, India.

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combatting this nexus prove to be futile as the beneficiaries are themselves the ones responsible for its implementation, monitoring or adoption. This combination of human error and corruption has long been affecting governance. However, with the coming in of the digital age and technological advances, Artificial Intelligence (AI) is hypothesised to take over and combat the ills of policy processes by eliminating human interference and thus corruption. Simultaneously, providing ease of access and faster processes through a Data Driven Policy (DDP) Process. In just a few years, it is expected that the potential will exist to free up nearly one-third of public servants' time, allowing them to shift from mundane tasks to high-value work. Governments can also use AI to design better policies and make better decisions, improve communication and engagement with citizens, residents, and improve the speed and quality of public services (Berryhill, Heang, Clogher & McBride, 2019, p. 3).

While the benefits of AI governance are significant it is also equally difficult for governments to tap its full potential. Following the AI advancements in the private sector, it is known to have a steep learning curve and proves to be difficult to adapt considering the level of disruption AI run policy processes would bring to the current scenario of policy making and implementation. The impact of AI and its disruptive nature has thus caused a tremendous amount of uncertainty towards its implementation. Once governments have decided to leverage AI, as many governments and international bodies have acknowledged, it is critical that they develop a trustworthy, fair and accountable approach to designing and implementing AI that identifies trade-offs, mitigates risk and bias, and ensure an appropriate role for humans (Berryhill et al., 2019, p. 89).

This paper attempts to highlight the perks of AI directed policy process and acts as a conversation starter for future research into this topic. Keeping in mind that the research on AI modelled public policy remains largely limited due to its inherent non-binaries and multi-faceted issues.

II. RELATIONSHIP BETWEEN AI AND DDP

The binary between AI and DDP is an essential component of policy processes in the times to come. Fundamentally, AI is a part of public policy itself while DDP is the manifestation of AI in the sphere of policy making. This can be given historical validation by understanding the binary relationship between digitization and public policy. Assuming the presence of 4 industrial revolutions which are symbolic of the following breakthroughs; Steam engine (First Industrial Revolution, 18-19c), Electric power (Second Industrial Revolution, 1870-1914:), Internet (Third Industrial Revolution, From 1980s), AI (Fourth

 [ISSN 2581-5369]

Industrial Revolution, From 2010 into the future).

Here each of the above digitization breakthroughs represents a shift in the policy processes of that particular time. Wherein, during the first Industrial Revolution public policy was based on an autocratic rule, then from 1850s it was based on ideologies and group-interests. During the second Industrial Revolution public policy came through vis-a-vis modern statistical analysis for instance surveys. Transitioning into modern social planning and technocratization during the 1930-70s with the coming of the internet in the Third Industrial Revolution. This paved the way for the adaptive policies and incremental model of policy making. With the coming in of the Fourth Industrial Revolution this binary between digitization and public policy has grown into extending its reach in an evidence based policy model through Data Driven Policy making (Berg, n.d.) and AI is a catalyst in this development through its principles of automation and fast processing of huge amounts of data.

While AI itself should be a part of public policy it is temporarily covered by other existing legislatures, for instance surveillance laws, Intellectual Property Laws etc. However, governments will soon have to formulate an independent AI legal framework that would govern AI's interference with policy making and regulate the amount and kind of data it generates. AI further brings forth a game changer by assisting DDP through giving relevant data which is often not in the hands of public authorities and is central to DDP. Thus, AI and its speed may also cut policy identification, design, mandating and its organisation from the policy cycle.

AI IN POLICY CYCLE

With a binary and functional relationship of AI and DDP established, it is essential to look at AI and its relative benefits in the policy cycle by the production of a DDP outlook. For the ease of understanding, let the policy cycle follow the given course:

AGENDA SETTING AND POLICY FORMULATION

The first few steps of the policymaking process: problem identification, agenda setting, and policy formulation, are usually tied together (Anderson, 2014), including a so-called 'multiple streams framework'. The multiple streams framework attempts to explain how policies reach the agenda when policy entrepreneurs are able to couple the policy, politics, and problems streams to open up a policy window, the opportune time when all the conditions are right to get a policy on the agenda (Zahariadis, 2007). Indicators such as evidence, statistics, societal and political pressure are usually followed so as to assess the

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importance of an issue and its relative place on the policy agenda. In AI governance, indicators such as the rate of technological progress could be used as examples. Creating a list of politically salient indicators or metrics could be potentially useful for creating long-term strategies and goals (Perry & Uuk, 2019). This would open way for comprehensive research thereby making policies accurate, efficient and speedy in its process. The formation of AI specific law governing AI indulgence in policy making and data generation would help its trustworthy and legitimate usage this could also be achieved through collaboration with other governmental agencies or trusted private players making policy formulation better targeted and including corporate discipline in its implementation. Trust could be further built through a human and AI collaborative framework. With such a network of policy formulation and agenda setting, the new policies will be more accountable to the people due to its lack of human involvement thereby reducing corruption and overly bureaucratic processes and will win better trust of the masses.

However developing such an approach is by no means an easy job as a number of factors go into its formation to list few; establishment of a legal, ethical and technical framework at the design stage and monitor compliance with them during the implementation phase, Maintenance of a constant focus on users and those who may be affected, clearly figuring out an appropriate role for humans in the decision-making process, Developing open and transparent accountability structures, Establishing safeguards against bias and unfairness (Berryhill et al., 2019).

III. POLICY ADOPTION AND IMPLEMENTATION

There are various approaches and models towards the implementation of policy but these begin with policy adoption which can be seen as, a pre-phase to policy implementation. Policy adoption, or when decision-makers choose an option that influences an existing policy or creates a new one. This does not necessarily take the form of choosing from completed pieces of policy, but rather to take further action on a policy alternative that is more preferable and that is more likely to win political approval (Perry & Uuk, 2019). Here AI based policy adoption will assist governance by posing a suitable trade-off mechanism between multiple factors. For instance, a policy's likelihood of approval vs. its societal benefits, its costs to the environment vs. its economic benefits etc. Such a use of AI helps policies to be economized and increase its productivity gains and decrease its relative costs. This is followed by the implementation of the best policy option, its adoption perse.

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Policy implementation simply can be seen as a stage in the policy process concerned with turning policy intentions into actions (John, 1988, p. 204). Policy implementation is the most important aspect of policy cycle as it determines the success or failure of the policy on the ground level. It is to note, policy implementation is a distinct step that can be clearly distinguished from others. Every implementation action can influence policy problems, resources, and objectives as the process evolves. Policy implementation can influence problem identification, policy adoption, etc. (McLaughlin,1987). The success of policy implementation depends on the presence of material availabilities and the will of the society (Perry & Uuk, 2019). That is, if enough resources are available to carry out policy implementation along with the right societal spirit to make something happen. Both these factors, especially the latter is extremely hard to quantify and manage. However, with AI based surveys and networking the will and opinions of people are easy to gather and analyse for instance, AI can survey and understand public opinion by keeping a tab on the targeted population's tweets or online posts. Giving the policy implementation a clearer picture of the public's will. Thus, AI based policy implementation can incentivise the targeted population towards a certain behaviour required to make policy successful. By reducing ambiguity in trade-offs, social will and political culture AI, helps in mobilizing political legitimacy and installs better structures so as to ensure the achievement of policy goals. AI is further envisioned to decrease frauds in policy implementation as discussed in the previous sections by an increased digitization of services reducing corruption in implementation, it would further limit the amount of hassle that relates to obtaining policy benefits for the targeted population through an interconnected system of better services and decision making. This point relates to an AI powered E-Governance model of delivering public services in an accurate, faster and trustworthy way.

However it is to note that such a model of implementation would only function once a proper framework for AI run public policy is in place. Primarily because policy issues and their responses aren't linear but have multiple dimensions to them. Here, Finland's AuroraAI National AI Programme serves as a pioneering framework. The AuroraAI programme takes a human-centric approach and efforts to improve the holistic wellbeing of its citizens as wellbeing is multi-dimensional and, thus, dependent upon multiple domains. The AuroraAI programme seeks to re-orient the provision of services around citizens and businesses by combining data from multiple domains and building a network of AI citizen-focused applications that provide services when they are needed – around various business activities or life stages and events such as childbirth, buying a home or retirement (ISA2 programme,

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2019).

IV. POLICY EVALUATION

Policy evaluation is concerned with an assessment of policy outcomes relating to its achievement vis-a-vis policy goals as aspired while its adoption. It seeks to measure the kind and degree of the impact that the policy has made since its implementation. Policy evaluation can also be done while policy implementation or during its adoption and may serve as the means which aid policy monitoring. Through a properly governed framework of AI channeled policy evaluation, policy makers could have an improved and optimized analysis with indicators of not only quantitative measures but also qualitative values to determine how far reaching has the policy been, AI shall also help policy makers reflect on how well policy has been targeted and will be a determining factor between the long standing policy dilemma of need for action and quality of policy making process. AI based evaluation lays out a working condition for real time updates and evaluation. Hence, policy makers would have access to live evaluation on implemented policies which will assist in taking timely action to urgent issues, this approach keeps in mind the non-linear dimension of social issues and will help generate a policy response mechanism that has the ability to deal with the changing situations of the society. With each policy having a historic database of its evolution and a predicted course of its future impact, the chances of failure will greatly reduce. This has been actualized by Belgium's CitizenLab (CitizenLab, n.d.) which is a civic technology company that aims to empower civil servants and provide them with machine-learning augmented processes that will help them analyse citizen input, make better decisions and collaborate more efficiently internally (OECD-OPSI, 2018). Through this, civil servants are able to access important policy information at a glance through intelligent, real-time dashboards. Some features allows them to easily identify citizen's priorities and to make decisions accordingly (Berryhill et al., 2019).

AI can be put to use on almost all branches of policy evaluation from statistical analysis to data based reflections and can also take the place of government supplied data which has time and again been distorted to show manipulated information. Furthermore, AI based evaluation is relatively more dependable and provides an improved, detailed and sophisticated analysis based on which further policy changes can be executed. Hence, an AI based policy cycle would result in incremental upgradations in policy everytime the cycle is completed with consistent improvements in each cycle (Ref, Fig 1.0).

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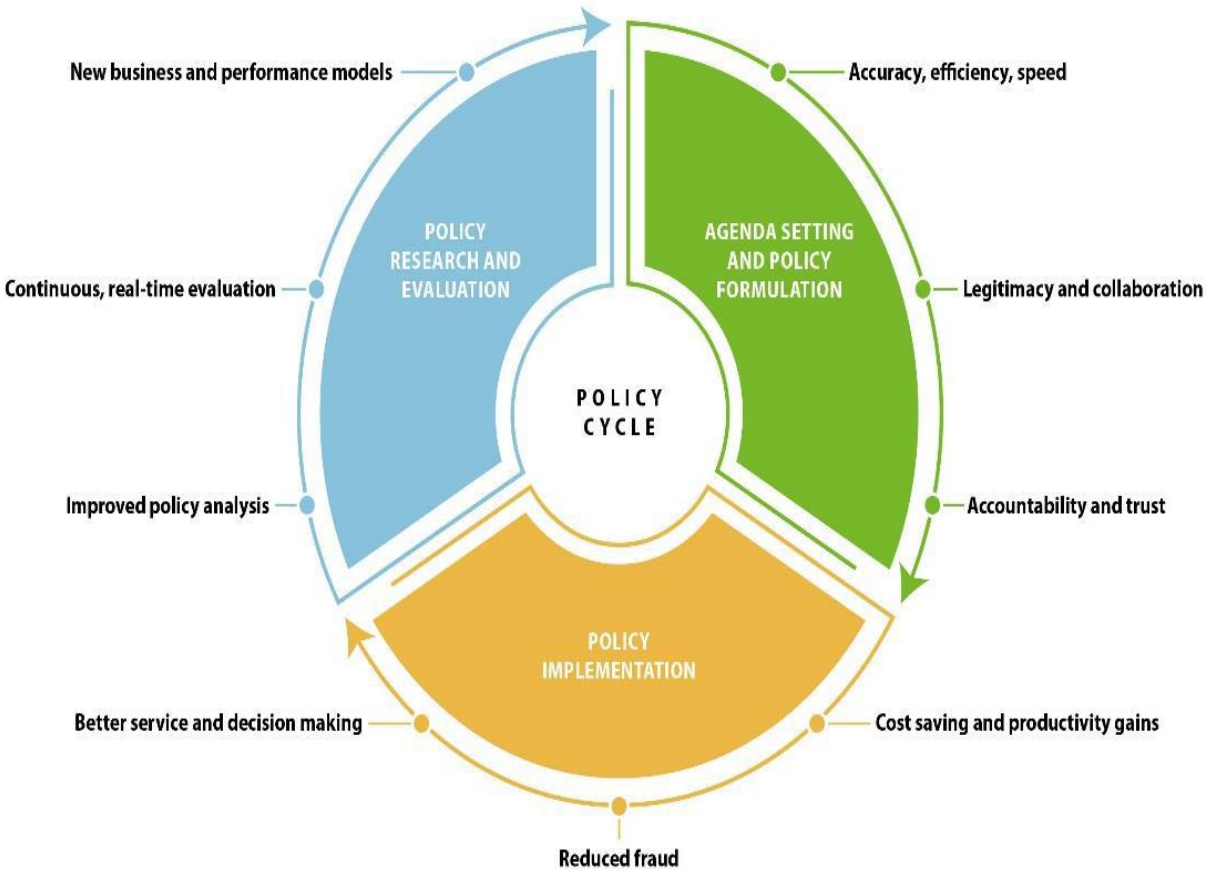

Figure 1.0: Benefits of AI at each stage of the policy cycle (Pencheva et al., 2018)

V. DEVELOPMENT OF GOVERNMENTAL AI FRAMEWORK FOR POLICY DEVELOPMENT AND THE WAY AHEAD.

Because each policy arena throws a distinct set of problems with distinct political setups, developing a common AI framework for policy development is impossible. The aforementioned AI based intervention towards better public policy will only be possible when governments develop an AI framework for policy development as previously observed in the case of Belgium's CitizenLab (CitizenLab,n.d) and Finland's AuroraAI and National AI Programme (ISA2 programme, 2019). This strategy should include the following baselines: an assessment of the organisation's current strategic situation and challenges that AI might help address. Objectives: what the organisation wants to achieve using AI and the principles that will underpin the actions it takes to achieve them. Approaches: the concrete actions that will be undertaken to achieve these objectives (Berryhill et al., 2019, p. 138). As noted, multiple governments are developing detailed research on their AI strategy and a working policy framework around it. However, adequate attention is yet to be given to tackling diverse social-policy scenarios and in the development of a comprehensive understanding of the intermingling of AI and politics.

Hence this paper, by highlighting the relative gains of AI in policy cycle encourages further research into the development of a policy framework based on an increased involvement of AI by studying this sphere through the lense of public policy and politics. It opens a way for newer questions into the development of such a strategy and integration of AI, for instance, how such policies should be constituted, how it is to yield the desired results, the kind of financial inputs required, how these policies are to be advocated and how various stakeholders approach this development.

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 [ISSN 2581-5369]