BREAKING THE "PATTERN"

EXECUTIVE SUMMARY

Black men are disproportionately impacted by algorithmic biases and errors, resulting in longer prison sentences and reinforcing the cycle of incarceration that leads to social inequity and government failure. The federal post-sentencing risk assessment tool, PATTERN, relies heavily on criminal histories, baking in the systemic racism and bias from historical policing into its future predictions, unfairly prejudicing against black men—bias in and bias out. Three alternatives to the status quo are evaluated based on equity, economic development, political feasibility, and sustainability. The alternatives in order of priority include a change to the algorithm, an appeal process, and acquisition reform. The primary recommendation to improve the algorithm will improve equity by reducing the number of false positives and setting a new model for unbiased risk assessment development.

BY THE NUMBERS

47%   Black men miscategorized as "high risk"

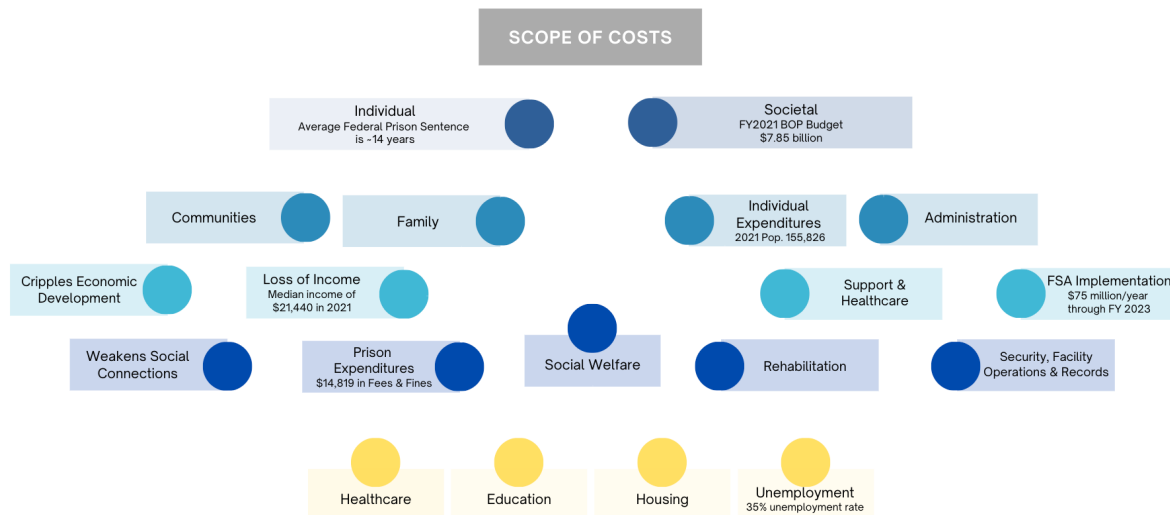**14K+**   Prisoners overall miscategorized

PROBLEM STATEMENT

Racially-biased federal post-sentencing risk assessment algorithms, such as PATTERN, disproportionately predict that Black men will recidivate, resulting in extended prison terms, undermining the policy goals of rehabilitation and reinforcing the cycle of racially biased incarceration that leads to broader social inequities and government failure.

Key Public & Social Issue: Equity

FOLLOW ALONG WITH THE PRESENTATION

SCOPE OF COSTS

Individual — Average Federal Prison Sentence is ~14 years

Societal — FY2021 BOP Budget $7.85 billion

Communities · Family

Individual Expenditures 2021 Pop. 155,826 · Administration

Cripples Economic Development · **Loss of Income** Median income of $21,440 in 2021

Support & Healthcare · **FSA Implementation** $75 million/year through FY 2023

Weakens Social Connections · **Prison Expenditures** $14,819 in Fees & Fines · Social Welfare · Rehabilitation · Security, Facility Operations & Records

Healthcare · Education · Housing · **Unemployment** 35% unemployment rate

(BOP, 2021.; BOP, 2022.; DOJ, 2021; Lewis & Lockwood, 2019; Rabuy & Kopf, 2015; The White House, 2022; USSC, 2021)

TARGET POPULATION & COSTS

Continuing to utilize historical data to inform and develop biased algorithms in the federal criminal justice system has grave consequences for marginalized individuals, particularly Black men, their families, and communities (Craigie et al., 2020). 26.2% of Black families live under the poverty line compared to 12.7% of white families, and the incarceration of Black men further impedes familial progress (Lofstrom & Raphael, 2016; Cottrell et al., 2019). This potential for "breakdown" of the Black American family is directly intersectional with the disparities in physical and mental health, employment, and education (Western & Wildeman, 2009).

The harm to incarcerated individuals, their families, and communities is just one facet; the operation of the federal criminal justice system, including its use of risk assessment instruments, must also be considered (Slobogin, 2021).

In fiscal year 2021, the Bureau of Prisons (BOP) was granted a budget of $7.85 billion, an approximate cost of $50,377 per inmate (BOP, 2021; BOP, 2022). The budget also included $75 million for the continued implementation of the First Step Act (FSA) (BOP, 2022). Due to the flaws in the FSA, the White House sought an additional $300 million for improvements in 2020 – PATTERN's categorization disparities were subsequently addressed (Grawert, 2020). Since its initial implementation, PATTERN has undergone several iterations and is currently being retooled a fifth time (DOJ, 2021). These costs are borne by society as a whole and can lead to an erosion of trust in governmental institutions and discontent in government (Rainie & Perrin, 2019).

ALTERNATIVE 1: ALGORITHMIC REFORM / CHANGING WEIGHTS

One source of implicit bias comes from the nature of algorithms: they learn from historical data (Skeem, 2020). Overall, the available data oversamples Black men because of law enforcement's history of disparate treatment (Turner Lee, 2018; O'Brien, 2021). The algorithm uses that data to create its relative weights for criteria (i.e., proxies), meaning the history of disparate treatment is locked into the model (Hamilton et al., 2021). Accordingly, the scoring system of PATTERN prioritizes "static" past factors (e.g., criminal history) over dynamic, rehabilitory actions (e.g., job training or drug treatment). Not only does this approach undermine the rehabilitation goals of the First Step Act, it also disproportionately scores black men as high risk (DOJ, 2021; Grawert, 2019; Stimson, 2020).

Top Criteria Weights in PATTERN
(Hamilton et al., 2021)
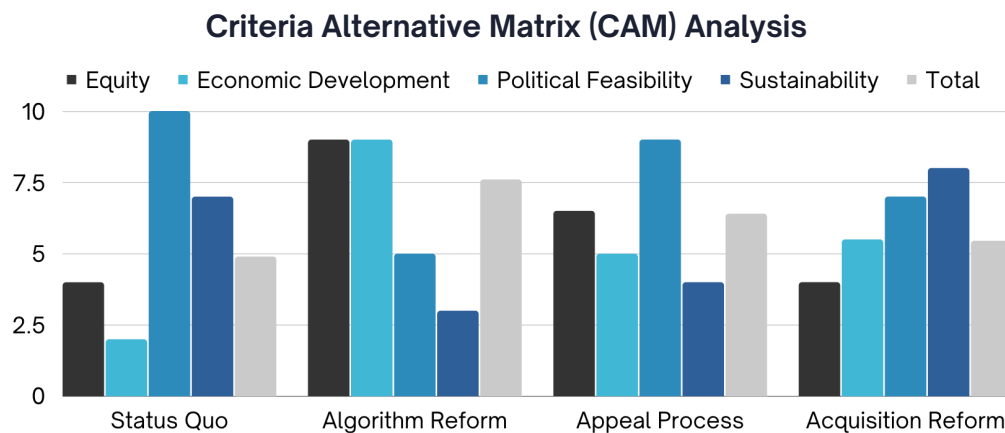
■ **Static** ■ **Dynamic**
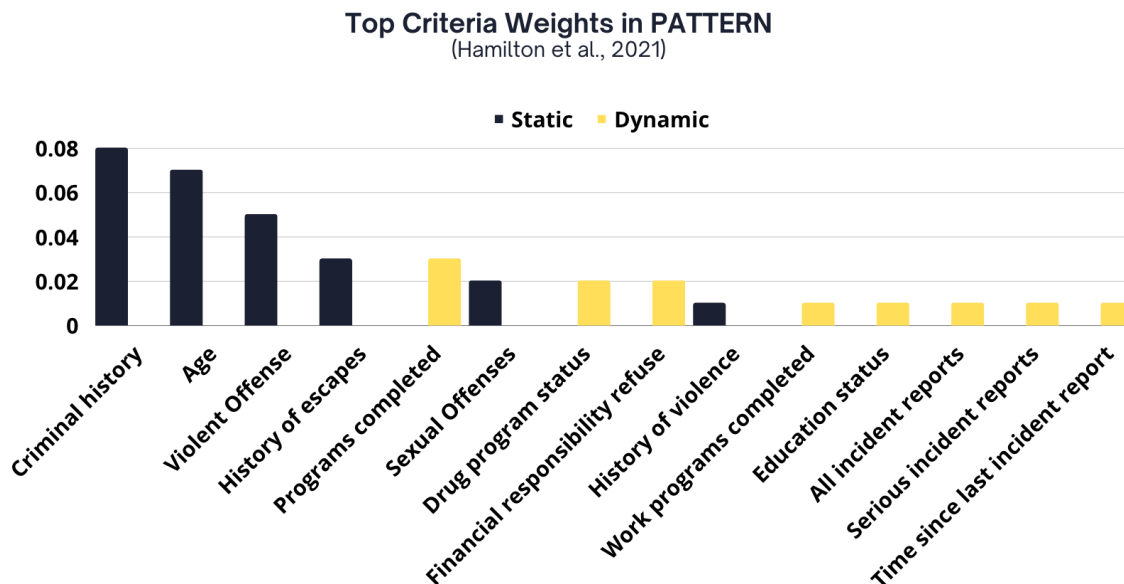
ALTERNATIVE 2: ALGORITHM APPEAL PROCESS

PATTERN does not include a vetting process for prisoners to appeal their risk categorization (Federal Bureau of Prisons, n.d). One consideration is to introduce a level of human review into the risk assessment process.

A review team could be formed for this purpose, and the review team could use the trends they see through their review process to provide input to algorithm developers on how to continue reducing bias through the algorithm.

ALTERNATIVE 3: ACQUISITION REFORM

Currently, the DOJ's Acquisition Policy and the Federal Acquisition Regulation (FAR) does not include any specific requirement for equity in algorithms (FAR, n.d.). Through acquisition requirements, the DOJ should and can mandate all algorithms created for risk assessment, including bias mitigation, open-source, and open data, to ensure that transparency and accountability are maintained. The action by the DOJ will set a precedent in ensuring equitable and accountable algorithms (Bloch-Wehba, 2021).

Criteria Alternative Matrix (CAM) Analysis

■ Equity ■ Economic Development ■ Political Feasibility ■ Sustainability ▢ Total

RECOMMENDATION: PILOT ALGORITHMIC REFORM WITH NEW WEIGHTS

The final recommendation to improve equitable outcomes and establish a standard for federal risk assessment algorithms would be to make changes to the algorithm.

- Commission Updated PATTERN Algorithm prioritizing fairness & rehabilitation
- Partner with CIO Council and GSA to develop open source and open data guarantees for the new algorithm
- Conduct retro-active analysis to determine the impact of new model
- Pilot the new model with select inmates for the RCT study

See References & More in the Appendix in the Presentation