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Research on Small Area Estimation for the National Crime Victimization Survey

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Important information for today's webinar

- Recording in progress.
 - Video, slides, and transcript will be posted on the BJS website.
 - Live-captioning is available.
- Questions about the presentation?
 - Submit questions at any time by using the Q&A tab (select "Direct").
- Need technical assistance?
 - Use the Q&A tab to flag issues.
 - Q&A feature may not work on some Android devices (email AskBJS@usdoj.gov instead).



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Presentation overview

1. National Crime Victimization Survey (NCVS) overview
2. Subnational estimation background
3. Introduction to small area estimation
4. A multivariate Bayesian model
5. State estimates
6. Demographic estimates
7. Ongoing work
8. Discussion and future work



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NCVS data used in this presentation

- NCVS data used in today's presentation come from two sources:
 - Demographics: NCVS – Legacy version (NCVS-L) public use files (PUF)
 - Data for 1992–2024 are available for download through the National Archive of Criminal Justice Data
 - <https://www.icpsr.umich.edu/sites/nacjd/view/collections/95>
 - States: NCVS-L restricted use files (RUF)
 - Available through the U.S. Census Bureau's Federal Statistical Research Data Centers (FSRDC)
 - Apply for access through the Standard Application Process (SAP)
 - <https://sap.nsf.gov/dataset/>



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National Crime Victimization Survey (NCVS) Overview



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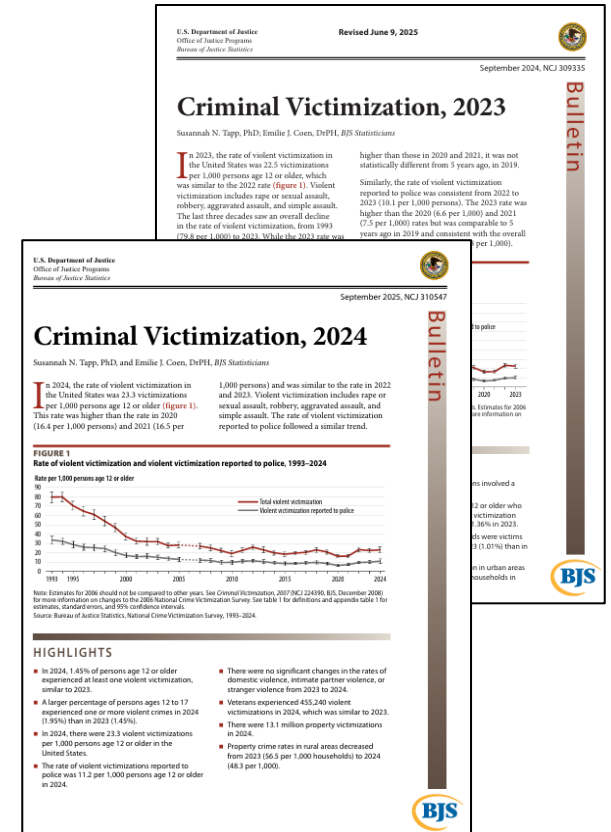
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- BJS was established in 1979 under the Justice Systems Improvement Act of 1979 (amendment to the Omnibus Crime Control and Safe Streets Act of 1968)
- BJS is the United States' **primary source** for **criminal justice statistics** and the principal statistical agency of the Department of Justice (DOJ)
- Our mission is to **collect, analyze, publish, and disseminate information** on crime, criminal offenders, victims of crime, and the operation of justice systems at all levels of government
- More information at <https://bjs.ojp.gov/>



What is the National Crime Victimization Survey?

- Nation's primary source of information on **criminal victimization**
- Sponsored and directed by BJS
- Started in 1972 as the National Crime Survey
- Redesigned and renamed National Crime Victimization Survey (NCVS) in 1992
- Developed to complement the FBI's Uniform Crime Reporting (UCR) program
- Crimes **reported** and **not reported** to the police





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How are the data collected?

- Administered by the U.S. Census Bureau
- National **sample** of persons **age 12 or older** living in U.S. households
- **Panel design** – Seven interviews over a course of 3.5 years (every 6 months)
- **Self-report survey** – Persons asked about criminal victimizations experienced during the prior 6 months
- **Incident-based** – Collects information about each victimization incident
- Survey designed to produce **national estimates of nonfatal criminal victimization**

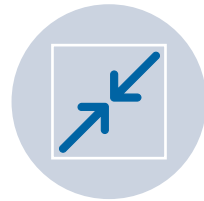


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NCVS instrument redesign



The NCVS instrument was redesigned to improve classification and measurement of crime and better engage respondents



The NCVS – Redesigned Version fully implemented in 2025



The current presentation uses NCVS – Legacy Version data only



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Terminology

- Direct estimator – Standard NCVS estimate
- Frequentist – Fixed model parameters
- Bayesian – Model parameters are random
- SE/BRR – Split the data to estimate uncertainty
- AIC – Compare models; lower numbers are better
- Unclear?
 - See the definitions sheet!



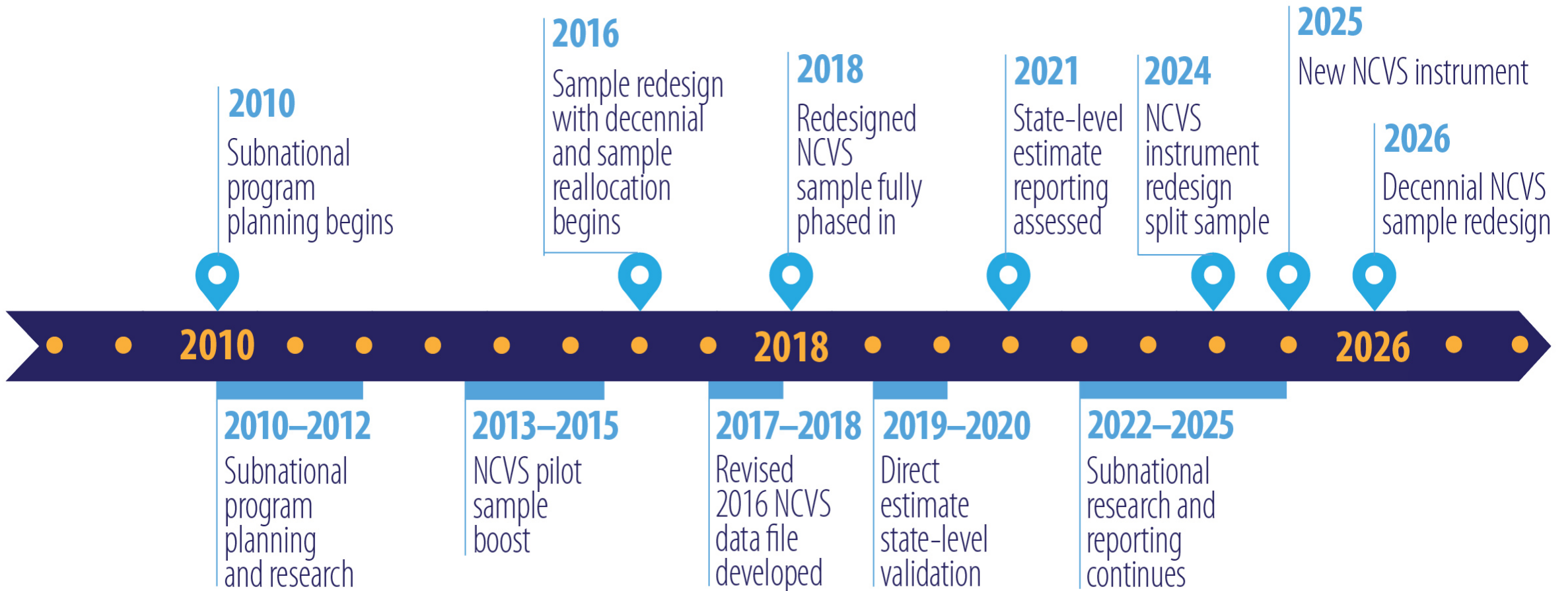
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Subnational Estimation Background



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BJS Direct Subnational Estimation Through the NCVS





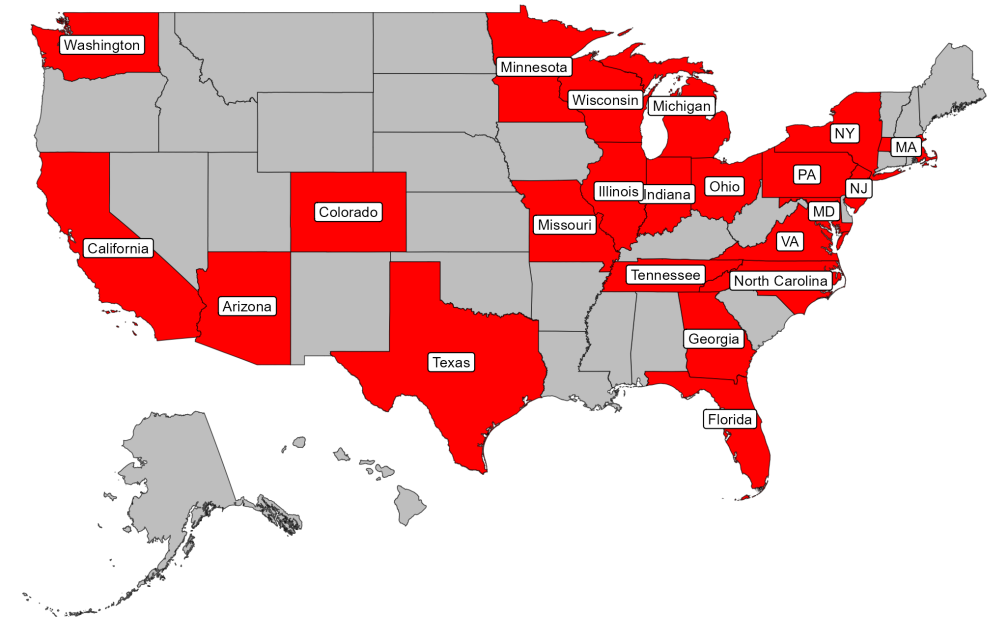
Subnational estimation: Direct estimates

- Motivation: Local policymakers and data users benefit from subnational statistics
- BJS traditionally publishes NCVS national-level estimates
- Based on findings from a pilot test, BJS **increased (or boosted)** the size of the NCVS core sample AND adjusted the **allocation** of the sample as needed to enhance representativeness in the 22 most populous states starting in 2016



Subnational direct estimation: Limitations

- Estimates for remaining 28 states and D.C. desired; MSAs also of interest; demographics within states
 - Standard NCVS estimates considered unstable
 - Unacceptably large estimated coefficients of variation
- **Solution:** Small area estimation
 - Use models to obtain more efficient estimates



Bureau of Justice Statistics, National Crime Victimization Survey, 2020-22



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Introduction to Small Area Estimation



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Small Area Estimation (SAE)

- Estimation using auxiliary information and model assumptions (Rao and Molina, 2015)
 - Auxiliary information – Covariates
 - Data from outside the survey of interest
 - Should be related to the direct estimators
 - Model assumptions – Mixed effects models
 - Random effects capture variability between areas
 - Sampling errors reflect variability among units in the same area



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Auxiliary information for NCVS small area models



Uniform Crime Reporting (UCR) program

- Tabulation of information from local police departments
- Submitted to the FBI

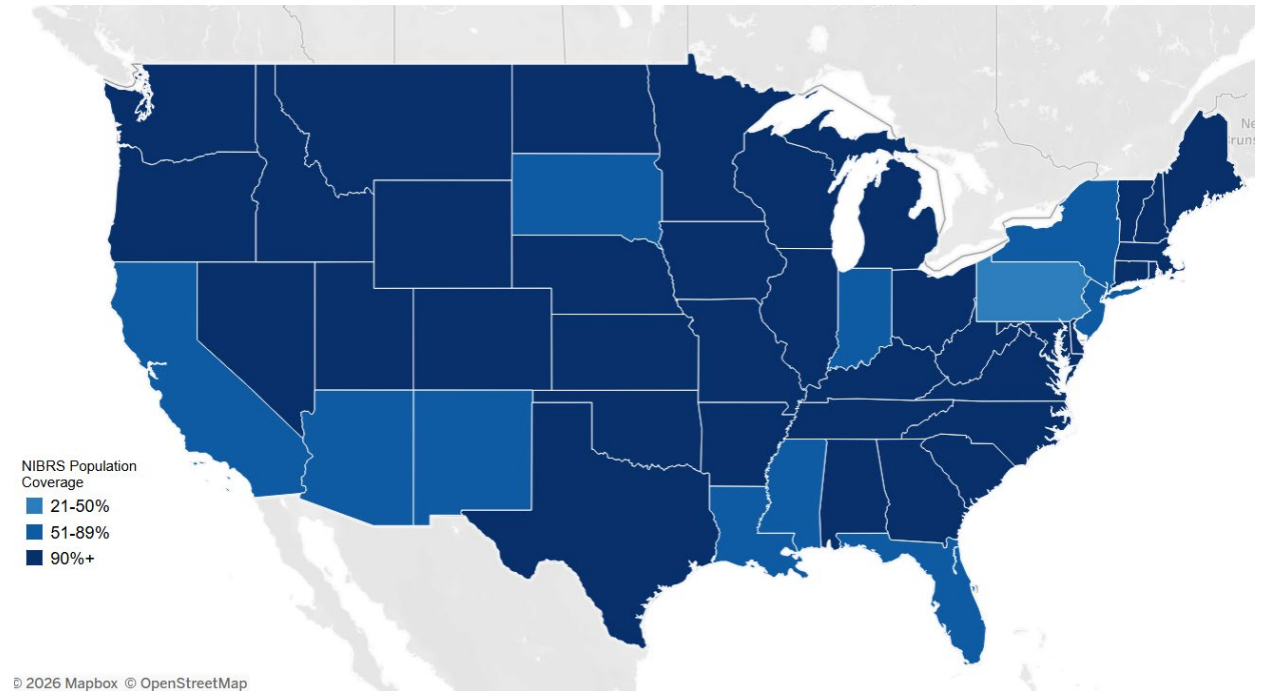
Data collection systems

- Summary Reporting System
 - Discontinued in 2021
- National Incident-Based Reporting System (NIBRS)



Auxiliary information for NCVS small area models: Limitations

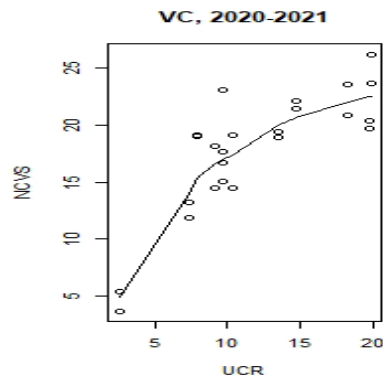
- Undercoverage of police departments, especially with NIBRS
- NIBRS measures different constructs and different crime types than NCVS
- NIBRS only includes crimes reported to police





Fay-Herriot (1979) model

- Y_i = direct estimator for state i with estimated variance ψ_i
- X_i = covariate for state i



$$\theta_i = \beta_0 + \beta_1 X_i + b_i$$

True crime
victimization rate
(unobserved)

$$Y_i = \beta_0 + \beta_1 X_i + b_i + e_i$$

$$b_i \sim N(0, \sigma_b^2); e_i \sim N(0, \psi_i)$$

Sampling error

Under the model, Fay-Herriot predictors have smaller mean square errors than direct estimators



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Extensions of Fay-Herriot model



Multivariate models

Model more than one crime type at the same time



Multiple time points and/or spatial dependence

Time series models can reflect longitudinal survey design

Nearby states may be more similar than distant states



Benchmarking

Force sum of model-based estimates to equal a direct estimate for the nation



Bayesian analysis

Specify priors for regression coefficients and variance parameters

Facilitates variance estimation after benchmarking

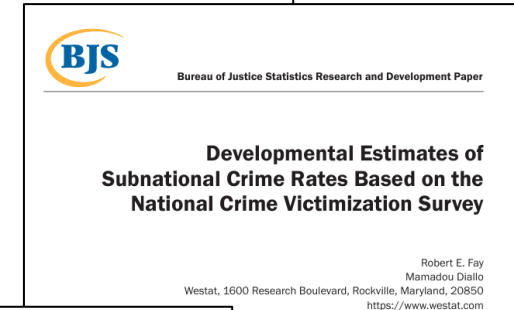


Past work on SAE for NCVS

- Multivariate Dynamic Model (Fay, 2021)
 - Multiple crime types (multivariate)
 - Lengthy time series (dynamic)
 - Frequentist inference procedures
 - Summary reporting system covariates
 - State-level estimation
- Full reports are on the BJS website

<https://bjs.ojp.gov/subnational-estimates-program#0-0>

Document title:	Bayesian Estimation of State-Level Crime Victimization Rates
Author:	Emily Berg, PhD, Iowa State University
BJS Project Manager(s):	Heather Brotos, Deputy Director of Statistical Programs Rachel E. Morgan, PhD, Chief, Victimization Statistics Unit
Document No.:	NCJ 308785
Publication Date:	November 25, 2025



Environmental Personnel Act (IPA) agreement, authored by report describes the feasibility of using model-based crime victimization rates. Specifically, a Bayesian direct estimates from the National Crime Victimization Survey information was derived from the FBI's incorporates multiple crime types and data for two results from applying the model to produce state-level

It does not release official government statistics. The parties of the research or analysis contained within and ed in this report are not official BJS statistics unless report. Any analysis, conclusions, or opinions expressed necessarily represent the views, opinions, or policies of

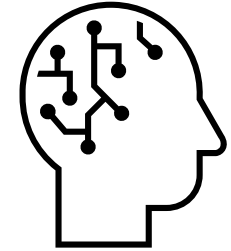
Authors:	Robert E. Fay, Westat, Inc.
Document No.:	NCJ 300603
Publication Date:	April 2021
Award No.:	This project was supported by award number 2017-BJ-CX-K030.
Abstract:	This report was produced by Westat, Inc., for BJS under award number 2017-BJ-CX-K030. It builds upon a previously released report that combined data from the National Crime Victimization Survey (NCVS) with small area estimation methods and data from the FBI's Uniform Crime Reports to produce estimates for states for 1999–2013 and for some large counties and substate areas for 1998–2012. This report features state-level estimates for an expanded set of characteristics that have been produced as 3-year averages for 2007–2018. The report includes displays of the state estimates accompanied by a more simplified description for the interested public. The majority of the report focuses on the software and its underlying methods.
Disclaimer:	The Bureau of Justice Statistics funded this third-party report. It is not a BJS report and does not release official government statistics. The report is released to help inform interested parties of the research or analysis contained within and to encourage discussion. BJS has performed a limited review of the report to ensure the general accuracy of information and adherence to confidentiality and disclosure standards. Any statistics included in this report are not official BJS statistics unless they have been previously published in a BJS report. Any analysis, conclusions, or opinions expressed herein are those of the authors and do not necessarily represent the views, opinions, or policies of the Bureau of Justice Statistics or the U.S. Department of Justice. This report refers to software developed by the author to carry out the analysis described for NCVS data. Persons interested in accessing the software to analyze NCVS data for their own research purposes should contact the U.S. Bureau of the Census regarding their Federal Statistical Research Data Center program at https://www.census.gov/about/adm/fsrdc.html. As of the release of this report, access to NCVS data is limited to years prior to 2016. Persons interested in copies of the software for adapting to their own small area estimation projects not involving NCVS data should send a request to the Bureau of Justice Statistics at askbjs@usdoj.gov.

R&DP-2015:01
NCJ 249238
December 17, 2015

Bureau of Justice Statistics, Award #2008-BJ-CX-K067.
Victimization Unit Chief.



Why a new approach?



- Explore alternative models and approaches
 - Broaden SAE research at BJS
 - Bayesian models for 2 time points
- Disruptions to a consistent time series
 - Transition to NIBRS
 - New covariates → relationships to covariates may change over time
 - NCVS questionnaire redesign
 - New instrument → possibly new trends



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A Multivariate Bayesian Model



Domains and variables of interest

- Domains
 - All states
- Time periods
 - 2017–2019
 - 2020–2022
- Variables
 - Overall violent crime
 - Simple assault, violent crime excluding simple assault
 - Overall property crime
 - Burglary/trespassing, remaining property crime (motor vehicle theft + other household theft)



Bayesian multivariate lognormal model for NCVS crime rates

- **Multivariate** response variables: two types of crime for each of two time periods (model violent and property separately)
 - Deduce the third type of crime based on the estimates for the other two crime types
- **Lognormal** transformation
 - Improved fit for overall state estimates
- **“Bayesian”** inference procedures
 - Vague priors for model parameters
 - Inference based on conditional distributions given our data



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Bayesian multivariate lognormal model for NCVS crime rates

- UCR covariates (Summary Reporting System 2017–2020; NIBRS 2021)
 - UCR revised rape = covariate for violent crime and simple assault
 - UCR burglary = covariate for burglary/trespassing
 - UCR motor vehicle theft = covariate for remaining property crime



Model form: Notation

- $i = 1, 2, \dots, 51 = \text{states}$
- $t = 1 (2017 - 2019), 2 (2020 - 2022) = \text{time points}$
- $k = 1, 2 = \text{crime types}$
 - Violent crime and simple assault
 - Burglary/trespassing, Theft/motor vehicle theft
- Y_{ikt} = direct estimator of crime rate
- x_{ikt} = UCR covariate
 - $x_{ikt}^{orig} = x_{ikt}$
 - $x_{ikt}^{log} = \log(x_{ikt})$
- $Y_i = (Y_{i1}, Y_{i2})'$, $Y_{it} = (Y_{i1t}, Y_{i2t})$
- $L_i = (L_{i1}, L_{i2})'$, $L_{it} = (\log(Y_{i1t}), \log(Y_{i2t}))$
- $\Psi_{i,orig}$ = direct covariance of Y_i
- $\Psi_{i,log}$ = direct covariance of L_i



Model form: General

- Let v_i be an arbitrary 4-dimensional random variable
 - Model 1 (original scale): $v_i = Y_i$
 - Model 2 (log scale): $v_i = L_i$
- Multivariate Fay-Herriot Model
$$v_i = \theta_i + e_i, \quad e_i \sim N(0, \Psi_{i,*}), \quad * \in \log, \text{orig}$$
$$\theta_i = B_0 + X_i B_1 + u_i, \quad u_i \sim N(0, \Sigma_{uu})$$
$$X_i = \text{diag}(x_{i1}^*, x_{i2}^*, x_{i3}^*, x_{i4}^*) \quad * \in \log, \text{orig}$$
 - Σ_{uu} is an unstructured 4x4 covariance matrix
 - $B_0 = (B_{01}, B_{02}, B_{03}, B_{04})'$, and $B_1 = (B_{11}, B_{12}, B_{13}, B_{14})'$.
- Priors:
 - B_0, B_1 flat
 - $\Sigma_{uu} \sim \text{Inverse - Wishart}(.001, I_4, .001)$



Posterior summaries

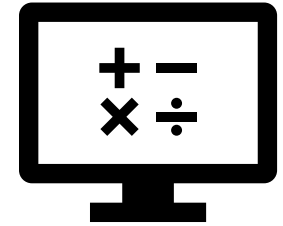


- Gibbs sampling: iterative procedure
 - Full conditional distributions
- Posterior samples $\{\theta_i^{(t)}: t = 1, \dots, T\}$.
- Three chains
 - 2,100 iterations each; 100 to reach the posterior
 - Scale reduction factors close to 1
- Predictors and posterior root mean square errors
 - Original scale: posterior mean and SD of $\{\ell' \theta_i^{(t)}: t = 1, \dots, T\}$
 - Log scale: posterior mean and SD of $\{\ell' \exp(\theta_i^{(t)}): t = 1, \dots, T\}$
 - $\ell = (1,0), (1,1), (1,-1)$



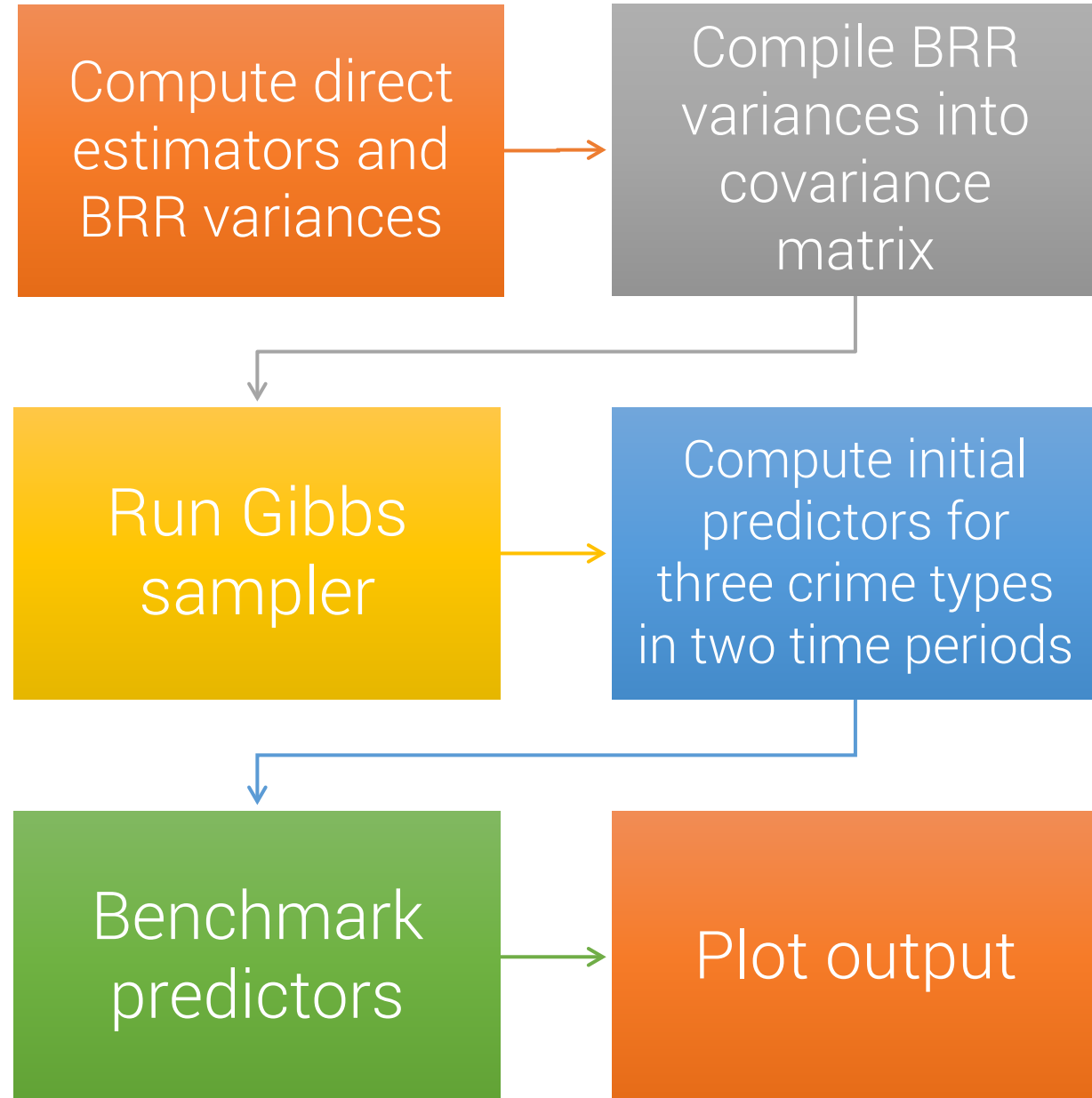
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Benchmarking



- Post-processing adjustment to force sum of final predictors to equal U.S. estimate
- Mean square error of the benchmarked predictor is the sum of the posterior variance and the squared difference between the benchmarked and non-benchmarked predictors
- Tradeoffs between additive and multiplicative benchmarking

SAE workflow





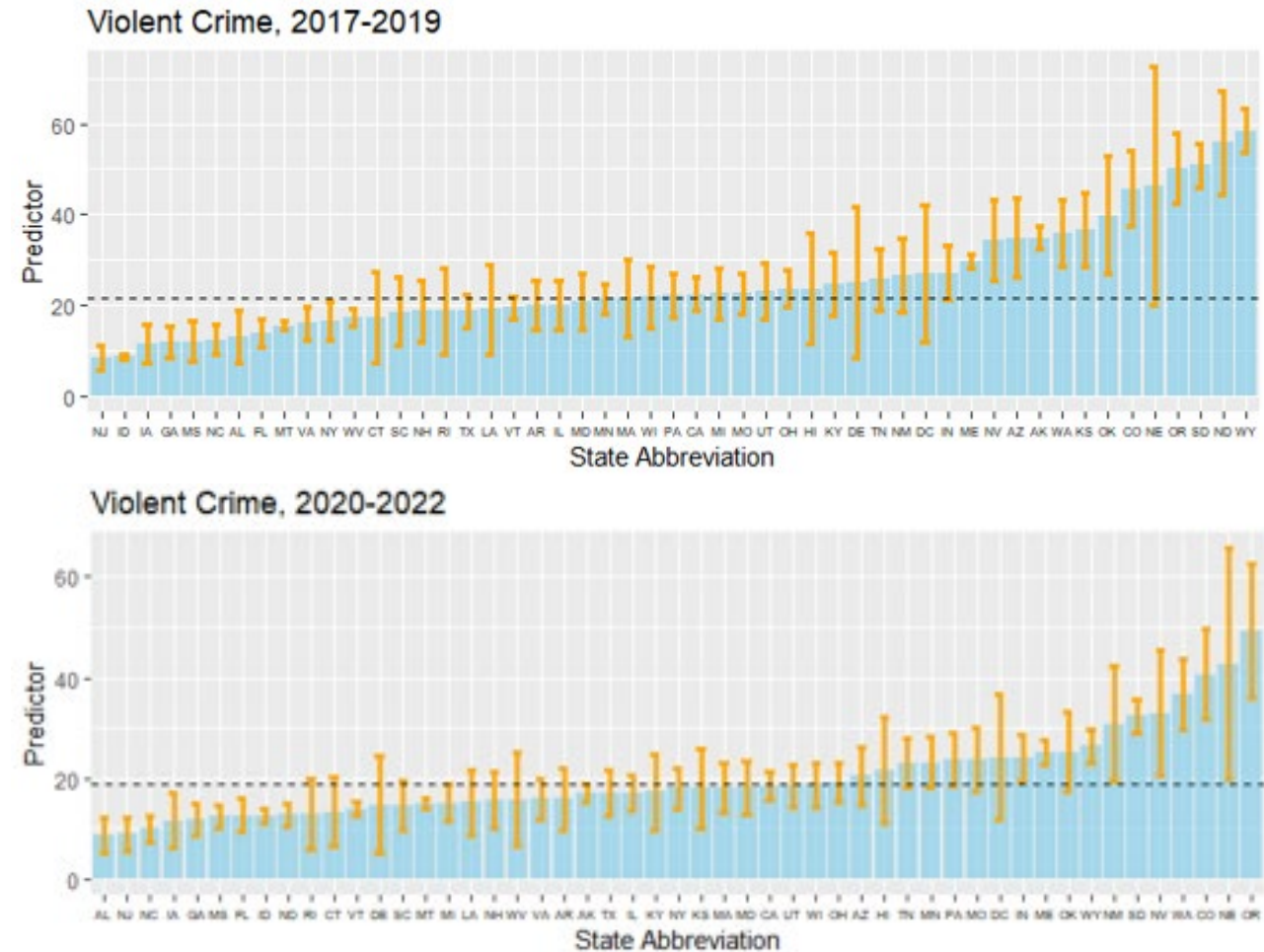
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State estimates



Violent crime results: Comparison to the U.S.

- Significant variation around U.S. estimate



The U.S. Census Bureau reviewed this data product for unauthorized disclosure of confidential information and approved the disclosure avoidance practices applied to this release (CBDRB-FY24POP001-0021).

See additional figures at <https://bjs.ojp.gov/document/beslcvr.pdf>

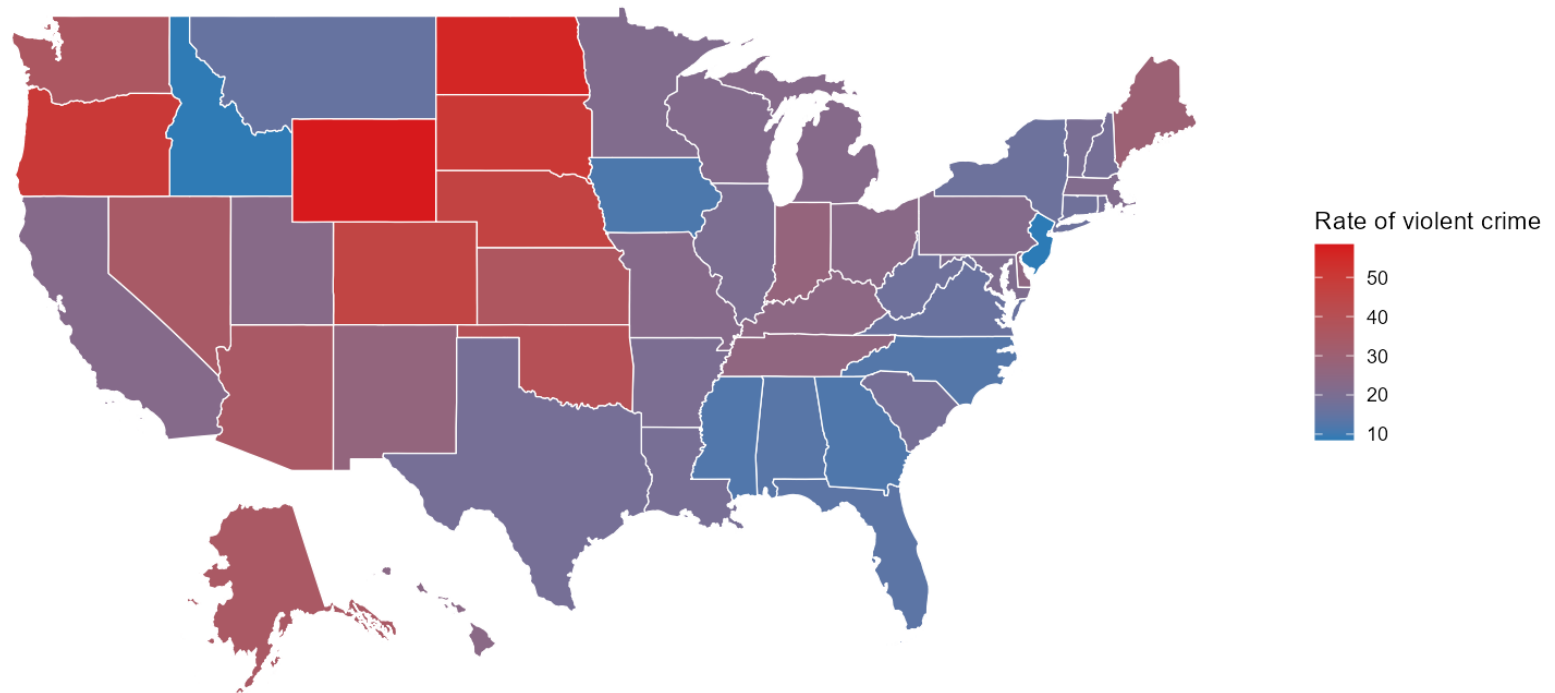


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Violent crime results: Geographic distribution

Violent crime rates by state

- Violent crime rate, 2017–2019

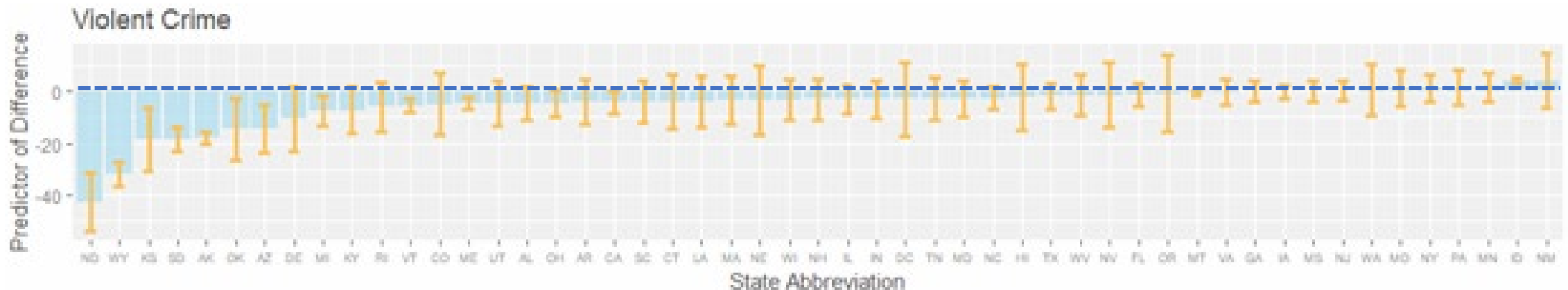


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Violent crime results: Change over time



- Few significant changes

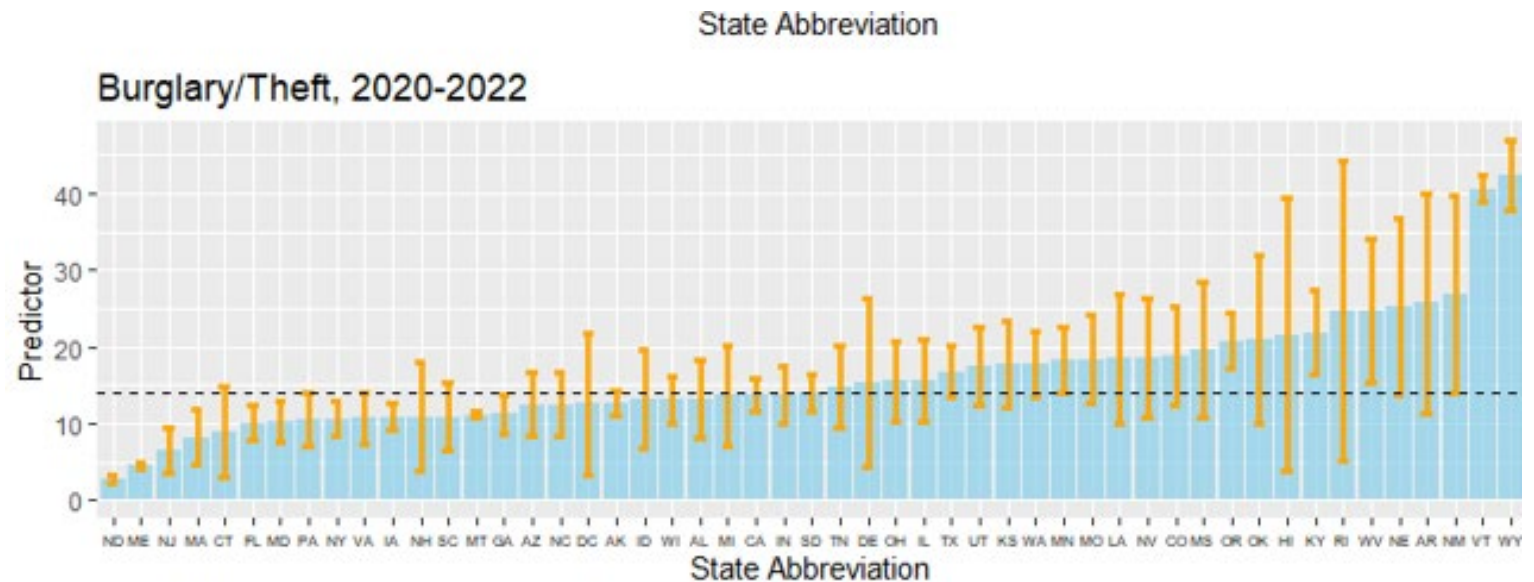
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Property crime results: Comparison to the U.S.

- Significant variation around U.S. estimates



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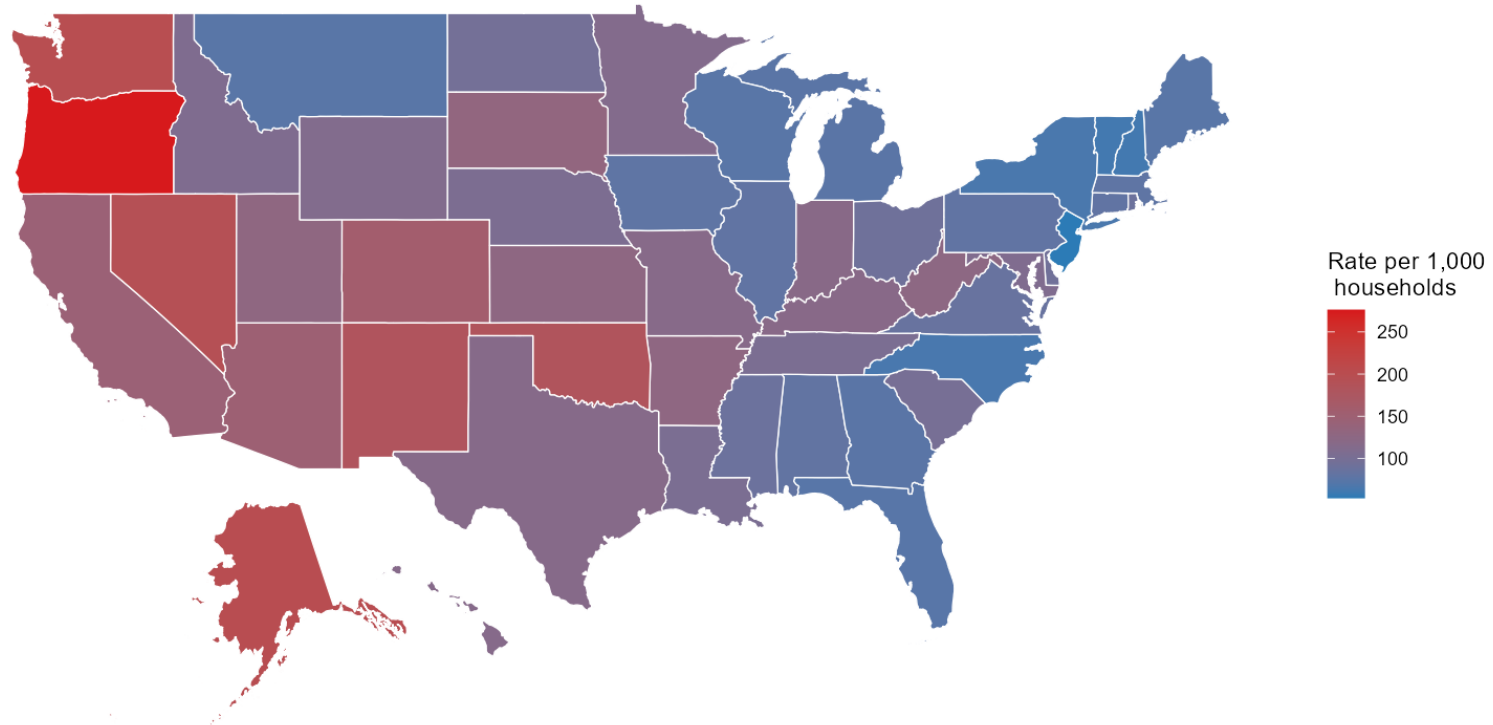
See additional figures at <https://bjs.ojp.gov/document/beslcvr.pdf>



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Property crime results: Geographic distribution

Rate of property crime by state

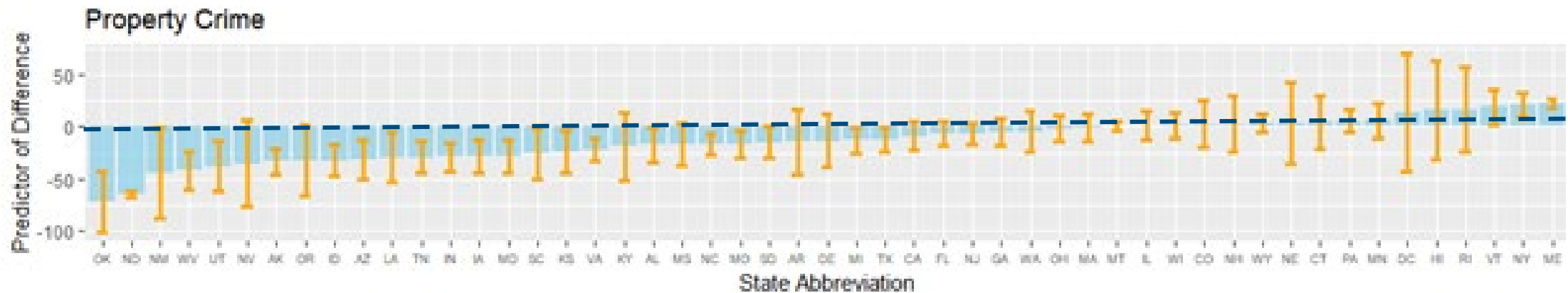


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Property crime results: Change over time



- Significant declines in property crime rates for many states

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See additional figures at <https://bjs.ojp.gov/document/beslcvr.pdf>



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Model Validation: Posterior predictive p-values

- Compare the distribution of a statistic based on the model to the corresponding statistic based on the data

Statistic	Violent Crimes	Property Crimes
Mean	.411	.527
Variance	.797	.615
Skewness	.322	.680

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Model Validation: Benchmarking ratio adjustments

	2017–2019	2020–2022
Property crime	0.992	0.999
Burglary/Trespassing	0.994	0.999
Remaining theft	0.992	0.999
Violent crime	1.008	1.015
Simple assault	0.988	1.015
Violent crime excluding simple assault	1.048	1.014

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Demographic estimates



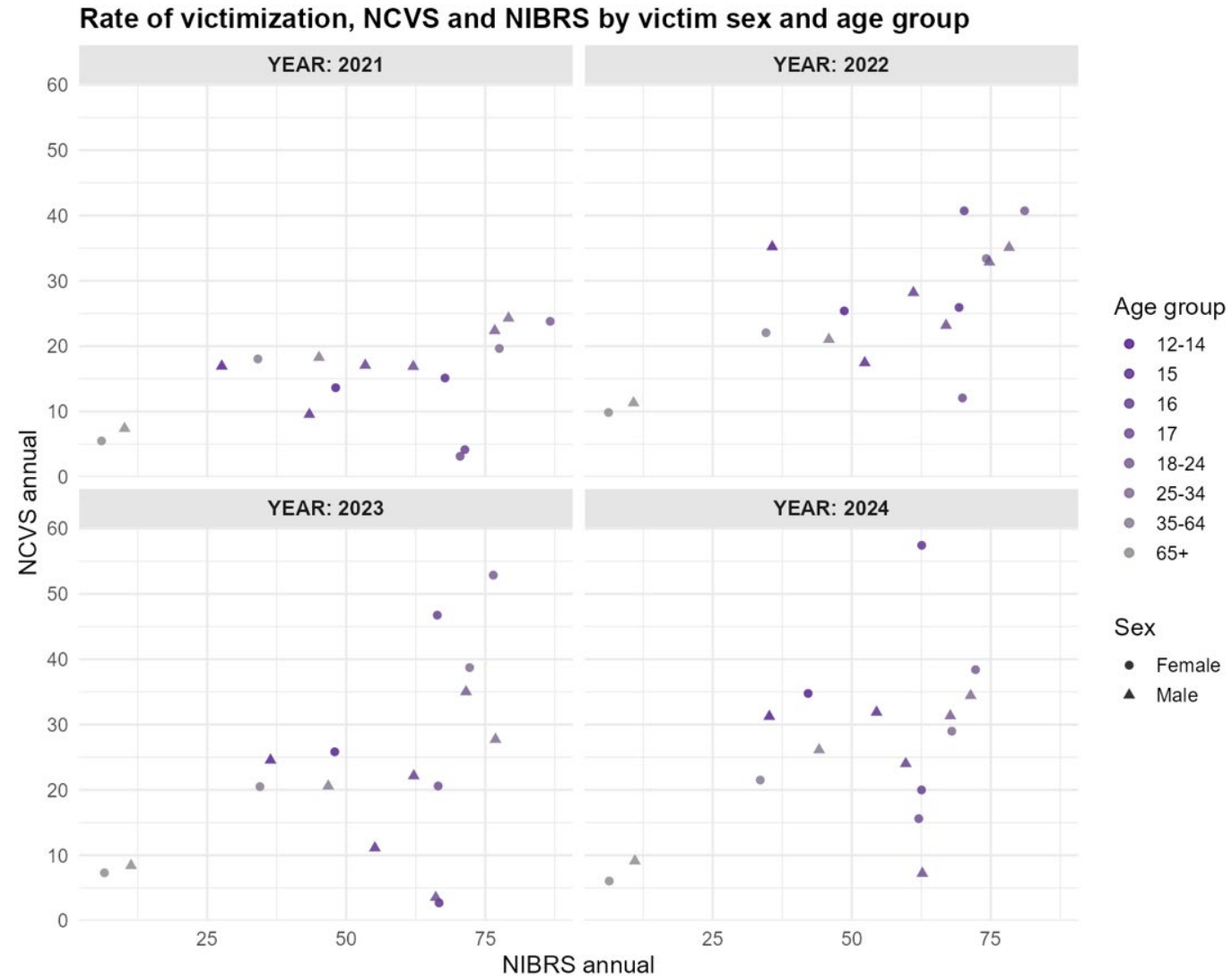
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Demographics

- Domains
 - Male/female
 - Eight age categories: 12–14, 15, 16, 17, 18–24, 25–34, 35–64, 65+
- Years
 - Annual estimates, 2021–2024
- NCVS estimates
 - Violent crime rates
 - TSL standard errors
- Covariates
 - Corresponding NIBRS violent crime rates



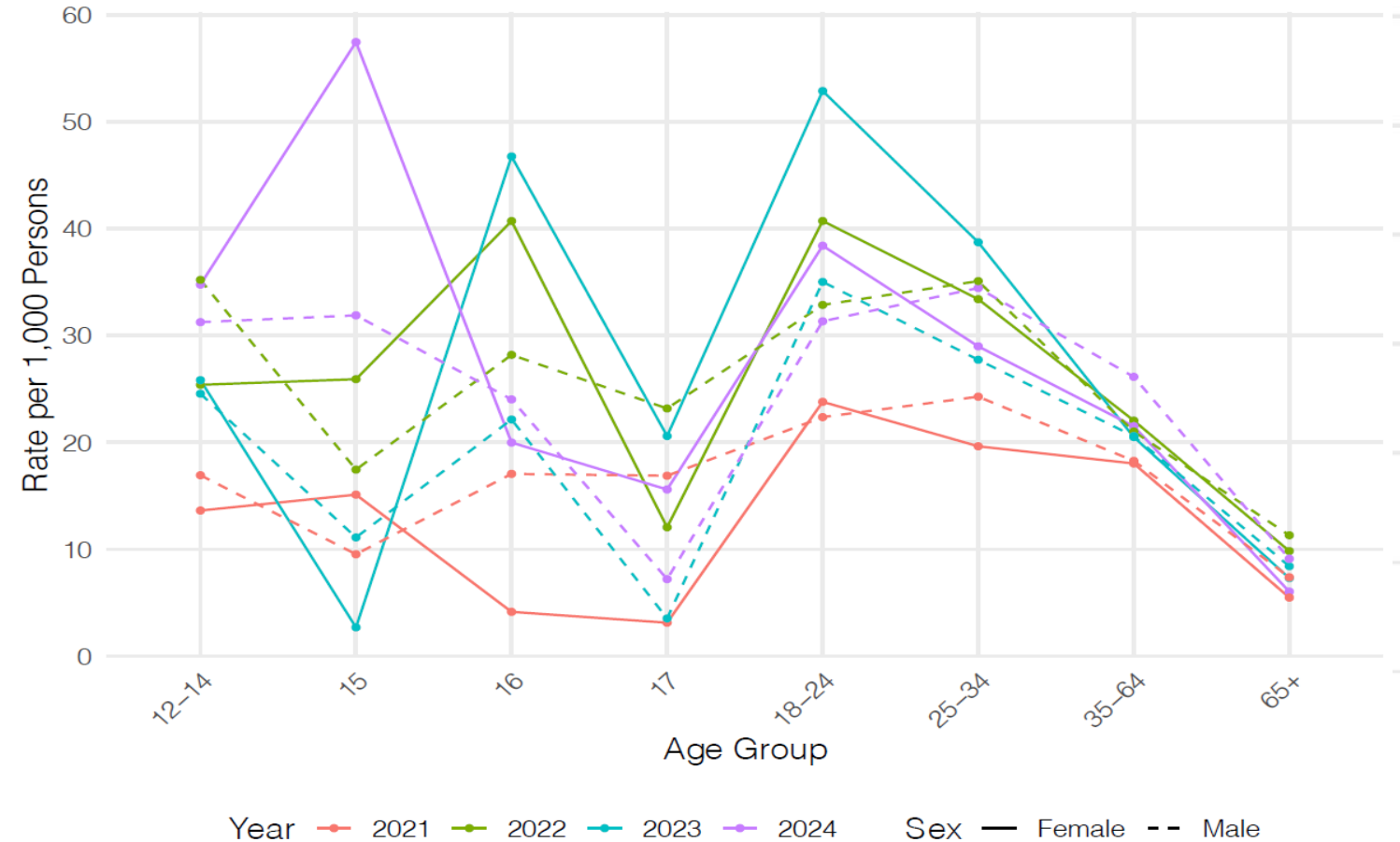
Exploratory analysis: NCVS and NIBRS





Exploratory analysis: NCVS

Violent Crime Victimization by Year, Age, and Sex, 2020–2024





Models

Rao-Yu time series model

- Random effect for demographic group
- AR(1) random effects for years crossed with demographics
- Correlated sampling errors over time

Dynamic model

- Extension of the Rao-Yu model
- Developed in the context of state-level NCVS estimation

Applied to demographics (sae2 package)

- Download the sae2 package: <https://cran.r-project.org/web/packages/sae2/index.html>



Sampling model

- $y_i = (y_{i1}, \dots, y_{i4})'$ = direct estimators for domain i for years 1–4
- $\theta_i = (\theta_{i1}, \dots, \theta_{i4})'$ = true crime rates
- $y_i = \theta_i + e_i$
- $e_i \sim N(0, \psi_i)$



Rao-Yu (RY) Linking Model (Rao and Yu, 1994)

- $\theta_i = X_i\beta + 1_4v_i + u_i$
- $v_i \sim N(0, \sigma_v^2)$
- $u_i = (u_{i1}, \dots, u_{i4})'$
- $u_{it} = \rho u_{i,t-1} + \epsilon_{it}, \epsilon_{it} \sim N(0, \sigma_u^2)$



Dynamic (DYN) Linking Model (Fay and Diallo, 2012)

- $\theta_{it} = x'_{it}\beta + v_{it} + u_{it}$
- $v_{it} = \rho^{t-1}v_{1,i}, v_{1,i} \sim N(0, \sigma_v^2)$
- $u_{it} = \rho u_{i,t-1} + \epsilon_{it}, \epsilon_{it} \sim N(0, \sigma_u^2)$



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Estimating ψ_i

- One of the inputs to these models is ψ_i
- The direct estimate of ψ_i may be unstable
- Rao and Molina (2015):

"The assumption of known sampling variances, ψ_i , can be relaxed by estimating ψ_i from the unit level sample data and then smoothing the estimated variances to get a more stable estimate of ψ_i . This smoothing is called the generalized variance function (GVF) approach."



A GVF for ψ_i

- Diagonal elements $\hat{\sigma}_k^2$
 - $(\sqrt{n_k})\hat{\sigma}_k^{\square} \approx \alpha_0 + \alpha_1 x_k + \gamma_{age}$
 - GVF estimate: $\tilde{\sigma}_k^2 = (\hat{\alpha}_0 + \hat{\alpha}_1 x_k + \hat{\gamma}_{age})^2 / n_k$
- Mean-variance relationship
- Variance decreases as sample size increases
- Correlations:
 - Average across age and gender categories for a given pair of years

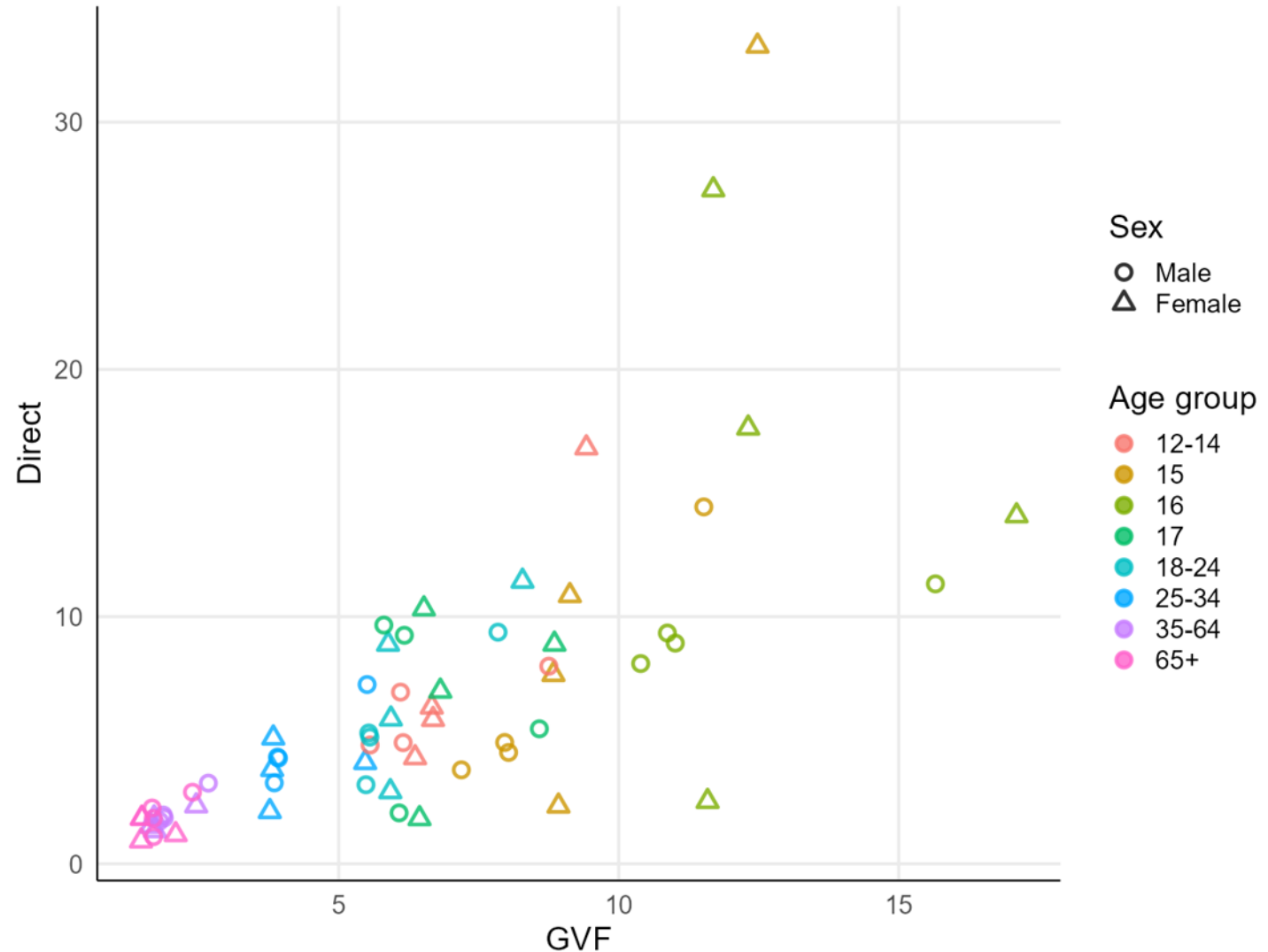
*GVF = Generalized Variance Function (see Terminology sheet for more)



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Direct vs. modeled standard errors

Comparison of direct and modeled standard errors





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Alternative regression models

- Only NIBRS
 - AIC 468 (RY); 460 (DYN)
 - Benchmarking adjustment about -10% for 2021
- NIBRS + Age/Sex fixed effects
 - AIC 464 (RY); 464 (DYN)
 - Effect for sex not significant
- NIBRS + Year effects
 - AIC 452 (RY); 442 (DYN)
 - Smaller benchmarking adjustments



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Alternative regression models

- Only NIBRS
 - AIC 468 (RY); 460 (DYN)
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- NIBRS + Year effects
 - AIC 452 (RY); 442 (DYN)
 - Smaller benchmarking adjustments



Estimated regression coefficients

	Rao-Yu		Dynamic	
	Est.	T-value	Est.	T-value
Intercept	5.605	1.533	9.680	4.025
2022	6.246	4.832	5.877	5.258
2023	4.855	3.315	4.626	3.346
2024	6.610	3.673	6.887	3.431
NIBRS	0.023	3.645	0.016	3.483



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Estimated variance components

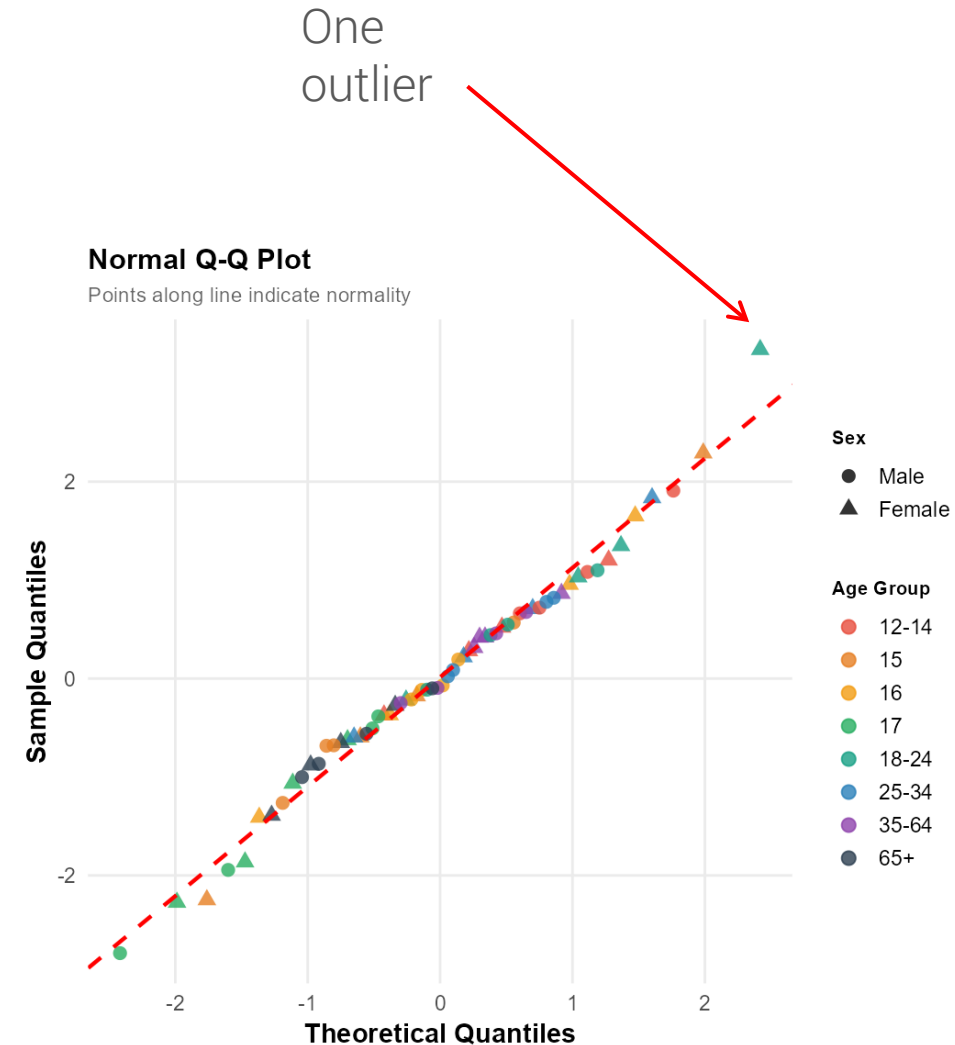
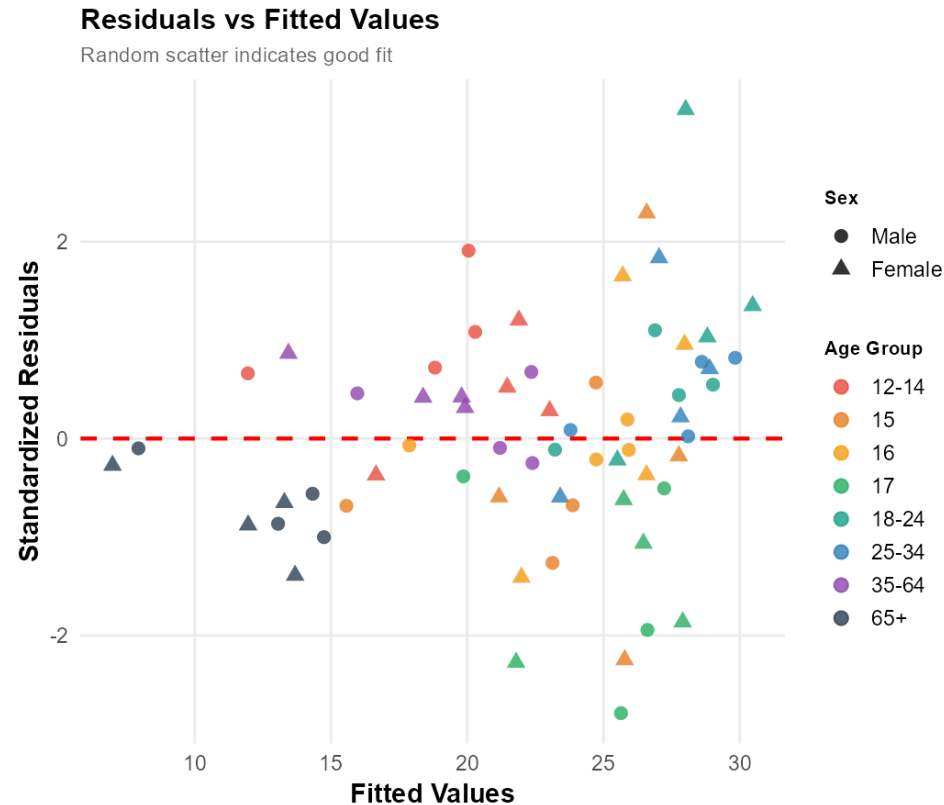
- Rao-Yu
 - $\hat{\rho} = .94$; $\hat{\sigma}_u^2 = 3$; $\hat{\sigma}_v^2 = .0002$
- Dynamic
 - $\hat{\rho} = 1.30$; $\hat{\sigma}_u^2 = .0002$; $\hat{\sigma}_v^2 = 17$



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Residuals: Rao-Yu

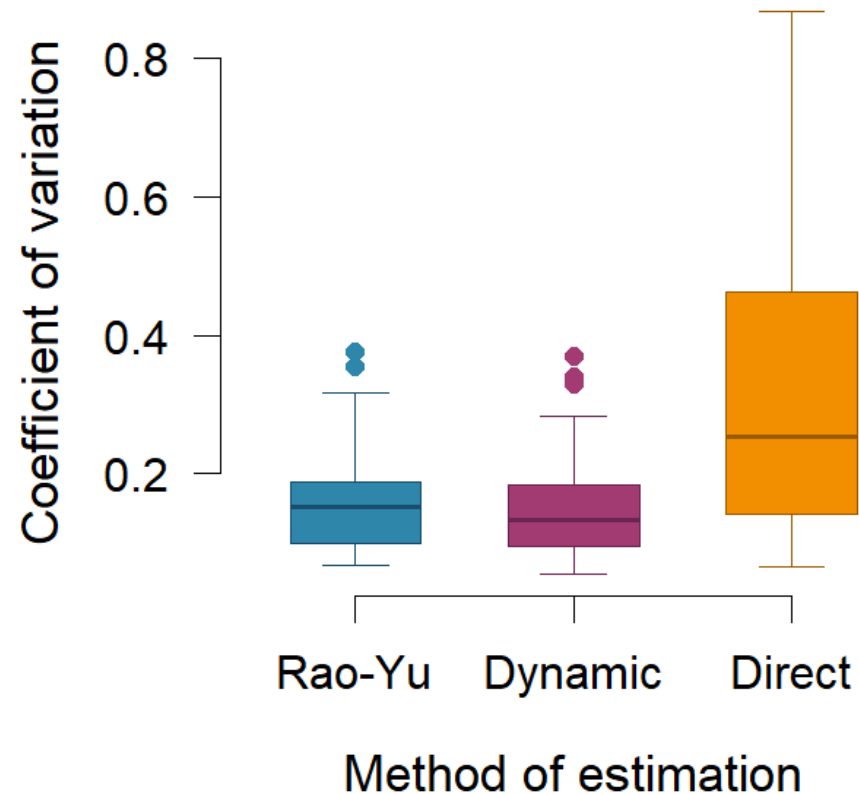
- Residuals symmetric around zero
- Normal Q-Q plot approximately a straight line



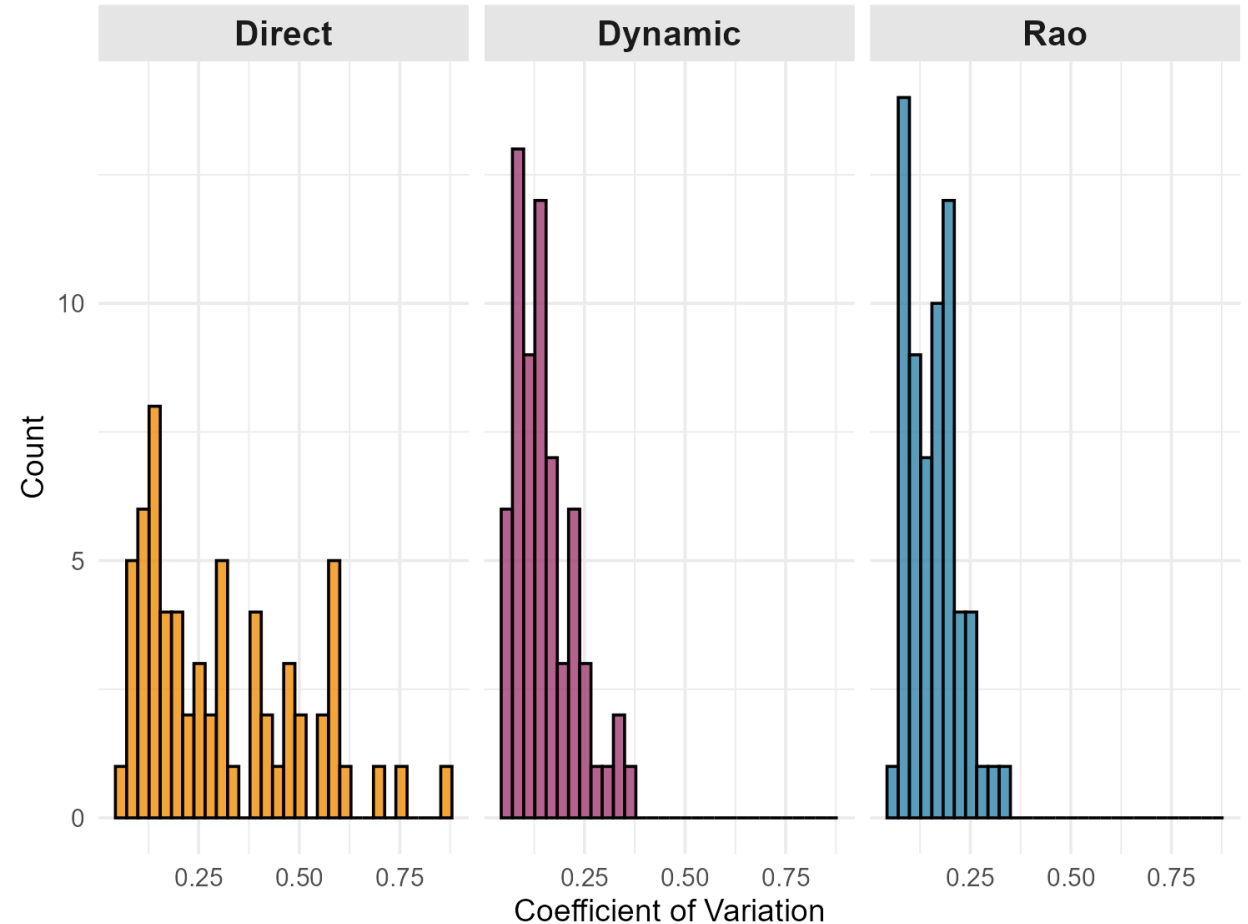


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Comparison of CVs



Comparison of Coefficient of Variation Across Methods

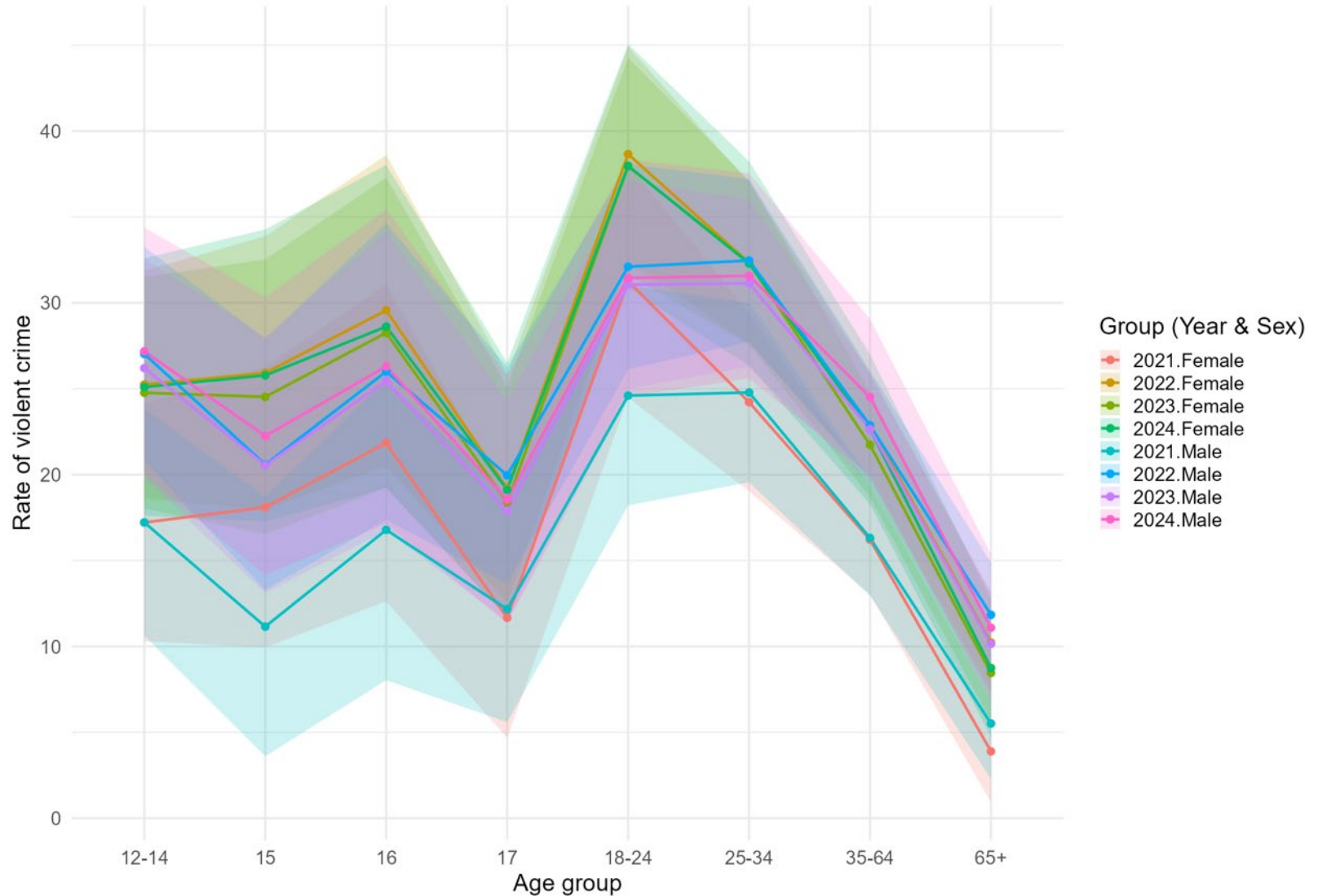




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Rao-Yu predictors with confidence intervals

Rao-Yu predictors against age by year and sex

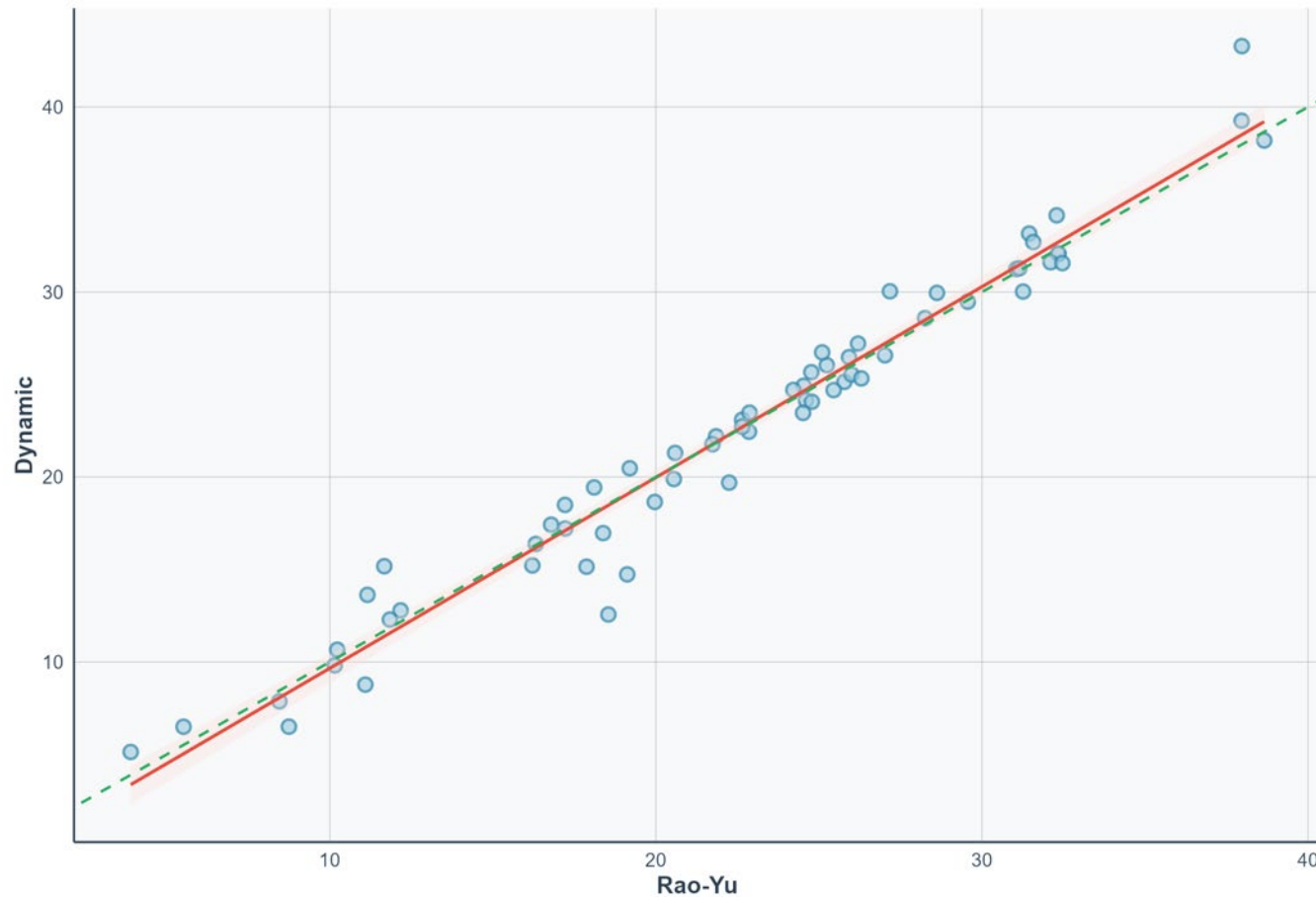




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Comparison: Rao-Yu and Dynamic

Comparison of predicted benchmarked estimates





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Related R&D work: extensions and challenges



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Extension: Demographics within states

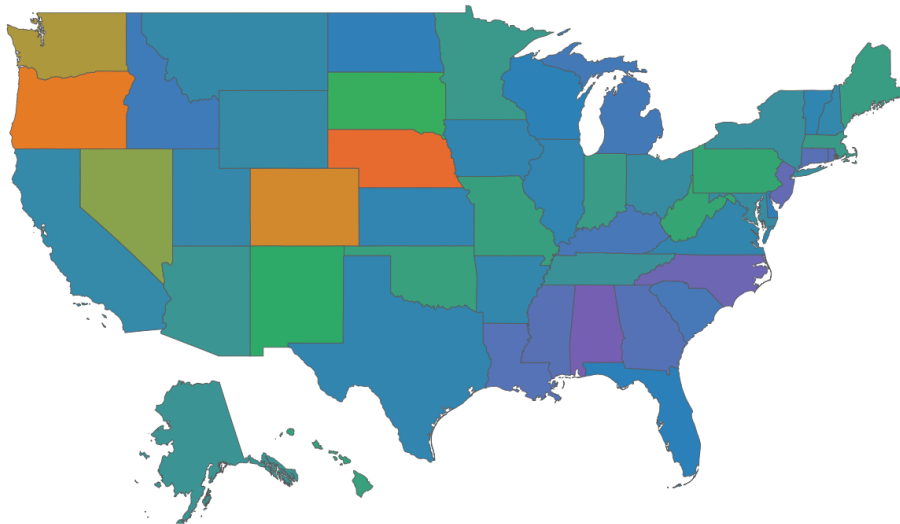
- Within-state categories
 - Male/female; <18, 18+
- NIBRS covariates
 - Selected crime type with highest correlation with NCVS
- Crime types: simple assault, violent crime excluding simple assault, violent crime
- Aggregate time frame: 2020–2022
- Multivariate Bayesian model
- Combines concepts of state estimation with demographic estimation



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Rate of simple assault by victim sex

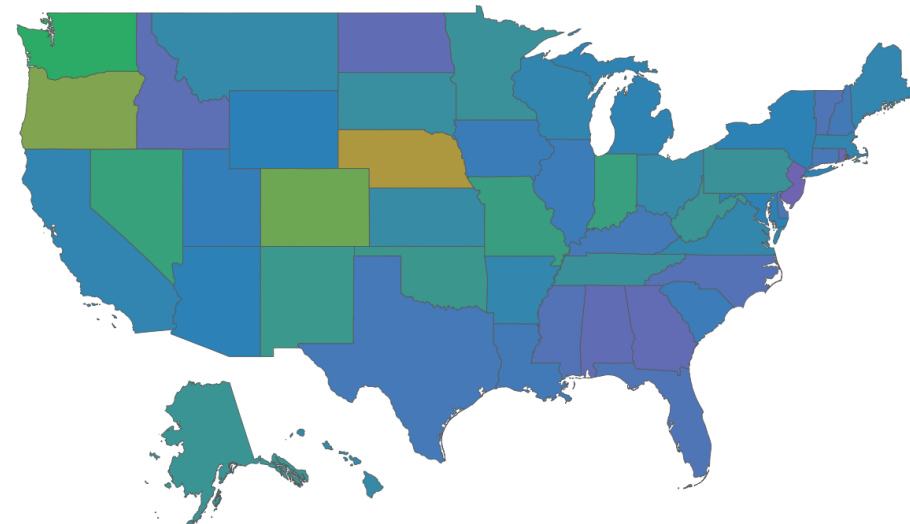
Simple assault rates for males by state



Rate per 1,000

30
20
10
5
0

Simple assault rates for females by state



Rate per 1,000

40
30
20
10
0

The U.S. Census Bureau has reviewed this data product to ensure appropriate access, use, and disclosure avoidance protection of the confidential source data used to produce this product (Data Management System (DMS) number: P-7533322; Disclosure Review Board (DRB) approval number: CBDRB-FY26-SEHSD003-119).



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Summary of challenges



UCR covariates
are weak

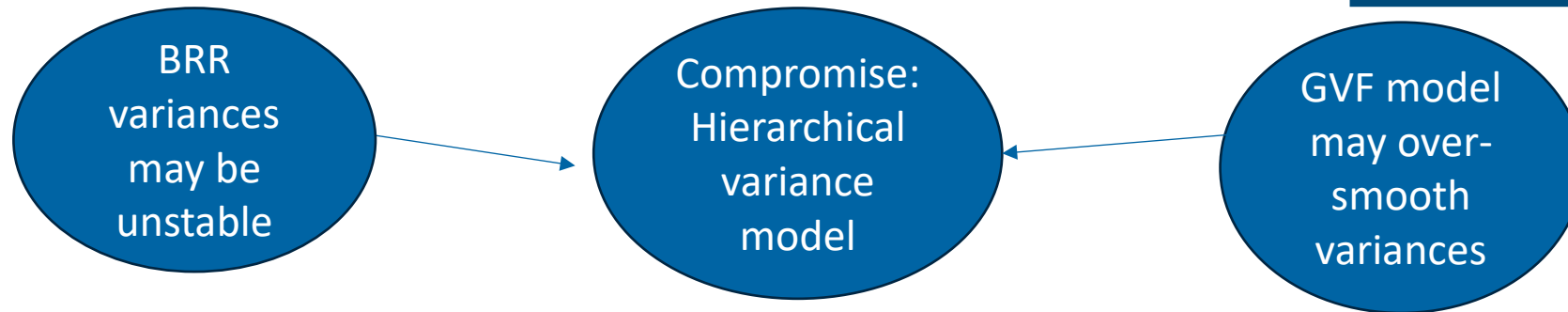
Possible presence
of spatial
dependence

BRR inputs may
be unstable



Variance estimation

	North Dakota	Montana	New York
Direct	0	0.27	1.46
Fixed	0	0.28	1.27
Hierarchical	3.07	2.82	1.14



- **Preliminary conclusion:** gives more reasonable variance estimates for states with small population sizes



Related R&D work: Spatial-temporal models

- Data
 - Response = NCVS violent crime annual estimates 2019–2024
 - Covariate = NIBRS revised rape category (2021)
- Model
 - AR(1) model for time points 0.105 (.069)
 - Correlation decays as years become more separated
 - Conditionally autoregressive model for states 0.469 (0.215)
 - Adjacent states are more similar than distant states
 - Same regression coefficient across different years 0.105 (.069)
 - Simplifying restriction; pools data across years
 - GVF for variances
- Preliminary conclusion
 - Spatial correlation higher than temporal



Related R&D work: Multivariate spatial models

- For male/female, consider one aggregate time point with two response variables
 - Simple assault, violent crime excluding simple assault
- Response variable is multivariate
- Want to account for spatial dependence
- Non-separable multivariate spatial model (Porter, Holan and Wikle, 2015)
 - Effect of spatial dependence may be different for simple assault or violent crime excluding simple assault



Related R&D work: Multivariate spatial models

- Fit models for males and females separately
- Selected output for males
 - Estimated spatial dependence parameter for simple assault: 0.643
 - Estimated spatial dependence parameter for violent crime excluding simple assault: 0.972
- **Preliminary conclusion:** strength of spatial dependence different for different crime types



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Related R&D work: Covariates and spatial dependence

Additional covariate sources

- CDC death rate of:
 - Suicide, firearm suicide
 - Homicide, firearm homicide
 - Unintentional drug overdose
 - All firearm injury deaths
- 5-year American Community Survey (ACS) covariates
 - Poverty rate
 - Percent of female-headed households
 - Social disorganization

https://data.cdc.gov/Injury-Violence/Mapping-Injury-Overdose-and-Violence-State/fpsi-y8tj/about_data

<https://www.census.gov/programs-surveys/acs>



Related R&D work: Covariates & spatial dependence

- Step-wise variable selection
 - Compared spatial dependence parameters (ρ) for selected model and reduced (only revised rape)

	Years	Selected covariates	Reduced ρ	Selected ρ
Simple assault	2017–19	Percent moved in the past year (+) Percent unemployed (-)	0.595	0.563
	2020–22	Revised rape (+)	0.356	0.356
Violent crime excluding simple assault	2017–19	Revised rape (+) percent black (-) Average suicide rate (+)	0.579	-0.049
	2020–22	Percent moved in the past year (+) Percent below the poverty line (-) Percent receiving SNAP (+) Average suicide rate (+)	0.627	0.574



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Related R&D work: Covariates & spatial dependence



- Preliminary conclusion:
 - Different covariates are important for different crime types and demographic groups
 - Including better covariates can in some cases reduce spatial dependence
 - About a 10% improvement in MSE from use of the selected covariates

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Discussion



Summary

- A multivariate Bayesian small area model proposed:
 - Overall state estimates for 2 time points
 - Demographics for annual estimates
 - Models multiple crime types together, accounting for correlation and preserving property that specific crime types add to overall violent crime
 - Variance modeling is considered

Limitations

Covariates

- Relationships to NIBRS not always significant at 5% level

Efficiencies

- CVs of model-based estimates can be high

Modeling direct variance estimates

- An ideal solution was not found



Future Work

- Statistical
 - Further exploration of new covariates and spatial dependence
 - Revisiting the dynamic model
 - For subnational estimates
- Operational
 - Sub-area models for counties within states
 - SAE for prevalence



References

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Research on Small Area Estimation for the National Crime Victimization Survey

Wednesday, September 23, 2026

Reports

- Bayesian Estimation of State-Level Crime Victimization Rates (<https://bjs.ojp.gov/library/publications/bayesian-estimation-state-level-crime-victimization-rates>)
- Criminal Victimization in the 22 Largest U.S. States, 2017 – 2019 (<https://bjs.ojp.gov/library/publications/criminal-victimization-22-largest-us-states-2017-2019>)
- Criminal Victimization in the 22 Largest U.S. States, 2020 – 2022 (<https://bjs.ojp.gov/library/publications/criminal-victimization-22-largest-us-states-2020-2022>)

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<https://bjs.ojp.gov>

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Data Collection Resources

- National Crime Victimization Survey (NCVS) (<https://bjs.ojp.gov/programs/ncvs>)
- NCVS Subnational Estimates Program (<https://bjs.ojp.gov/subnational-estimates-program>)
- NCVS Data User Page (<https://bjs.ojp.gov/ncvs-data-user-page>)
- BJS and NCVS publications (<https://bjs.ojp.gov/library/publications/list>)

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Extra slides and analysis



Rates and standard errors of simple assault, males, 2020 – 22

State	Rate	Standard errors	State	Rate	Standard errors	State	Rate	Standard errors
Alabama	3.8	3.2	Kentucky	8.3	4.7	North Dakota	9.7	2.0
Alaska	14.4	3.1	Louisiana	7.3	3.9	Ohio	12.7	5.6
Arizona	14.5	2.6	Maine	16.2	2.6	Oklahoma	16.9	1.6
Arkansas	11.5	2.4	Maryland	12.7	2.9	Oregon	30.8	1.8
California	11.9	6.1	Massachusetts	15.7	2.3	Pennsylvania	18.1	3.1
Colorado	28.4	1.4	Michigan	8.7	3.0	Rhode Island	6.8	5.5
Connecticut	7.0	4.0	Minnesota	15.5	1.2	South Carolina	8.4	3.0
Delaware	9.6	2.0	Mississippi	7.1	4.7	South Dakota	20.3	4.6
District of Columbia	16.3	5.1	Missouri	16.9	4.9	Tennessee	13.8	2.4
Florida	9.9	2.2	Montana	12.0	6.4	Texas	11.2	1.8
Georgia	7.2	2.0	Nebraska	34.2	4.5	Utah	11.8	5.3
Hawaii	16.9	2.5	Nevada	23.5	3.6	Vermont	11.0	2.9
Idaho	9.0	3.3	New Hampshire	11.7	4.5	Virginia	11.3	5.4
Illinois	11.1	5.9	New Jersey	6.0	1.5	Washington	25.8	1.5
Indiana	16.0	4.7	New Mexico	19.2	6.0	West Virginia	18.0	4.0
Iowa	11.2	1.3	New York	13.2	2.1	Wisconsin	10.3	3.6
Kansas	11.0	2.1	North Carolina	4.9	3.1	Wyoming	12.3	1.9



Rates and standard errors of simple assault, females, 2020 – 22

State	Rate	Standard errors	State	Rate	Standard errors	State	Rate	Standard errors
Alabama	6.3	6.4	Kentucky	8.7	1.7	North Dakota	6.2	2.1
Alaska	14.4	4.5	Louisiana	8.7	5.2	Ohio	11.9	2.0
Arizona	10.3	3.6	Maine	11.2	2.8	Oklahoma	15.1	2.4
Arkansas	11.4	4.5	Maryland	10.3	5.4	Oregon	23.0	3.3
California	11.1	1.5	Massachusetts	11.1	1.4	Pennsylvania	13.9	5.8
Colorado	22.1	6.0	Michigan	10.7	4.0	Rhode Island	5.5	4.7
Connecticut	8.3	2.1	Minnesota	13.8	3.6	South Carolina	9.1	1.2
Delaware	8.1	3.1	Mississippi	7.5	1.8	South Dakota	13.0	2.0
District of Columbia	14.5	2.0	Missouri	16.3	3.2	Tennessee	13.6	4.7
Florida	7.7	5.6	Montana	11.9	3.0	Texas	8.6	3.8
Georgia	6.1	1.6	Nebraska	25.7	2.5	Utah	9.6	2.5
Hawaii	12.1	1.7	Nevada	17.2	2.4	Vermont	7.8	2.8
Idaho	6.6	3.1	New Hampshire	8.6	6.1	Virginia	11.6	2.3
Illinois	9.1	5.5	New Jersey	4.6	1.3	Washington	19.4	2.9
Indiana	16.7	3.0	New Mexico	15.2	4.0	West Virginia	14.3	1.2
Iowa	9.2	4.6	New York	10.5	2.0	Wisconsin	11.2	4.7
Kansas	12.5	2.3	North Carolina	7.2	5.1	Wyoming	10.2	4.8

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