

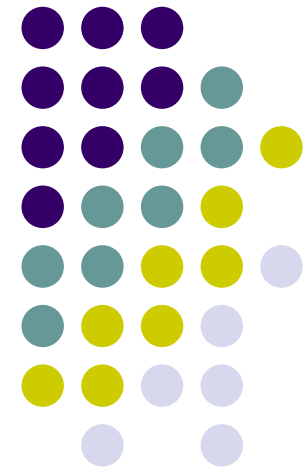
United States Simulation Modeling: Objective Custody Classification

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Organizational Background

JFA Associates/The Institute



- Non-profit based research firm with over 40 years of combined experience in criminal justice research
- Active forecasting technology in over 30 of the 50 United States and Puerto Rico
- Active classification system used in over 40 States and Puerto Rico; also Victoria and New South Wales
- Completed over 200 local jail and juvenile facility forecasting and classification systems
- Other areas of research include recidivism analysis, parole board risk assessment, juvenile justice monitoring, alternatives to incarceration, parole and probation risk management, etc.

Overall Project Goals

Describe and Inform the Decision Making Process



- Understand how the correctional system operates
- Analyze and document the most recent population trends in a criminal justice system
- Project ten year prison, parole, probation, and other community supervision populations
- Project future criminal justice population needs by inmate classification/security levels
- Estimate and quantify changes to the system
- Inform and educate policy makers

What Are The Necessary Tools

The Wizard Simulation Software



- Wizard 2000 simulation model
- Current data trends either computerized or manual data collection
- Qualified staff (analyst and planner)
- Policy assumptions committee (law enforcement, courts, corrections, policymakers)

Simulation Model: Wizard 2000



- Window's '95/98/NT micro-simulation based software package
- User input includes disaggregated population characteristics
- Simulation model constructed and customized using these inputs
- Generates projected admissions, releases, and length of stay on a monthly basis for an infinite number of years
- Not only answers “how many?” by “why?”, to better inform decision makers
- Typical model accuracy <2% each month of forecast

How Is The Forecast Accomplished

Step 1: Data Collection



- Identify existing policies and legislation
- Study current operations/trends
- Interview decision makers about likely changes or proposals
- Identify target populations
- Map out flow and business practices of a criminal justice system

How Is The Forecast Accomplished

Step 2: Extract Files/Data Analysis



- Who is admitted to population?

Sentenced received	Custody level	Demographics
Offense Type	Pretrial credits	Criminal history
Felony class	Parole eligibility	Admission date

- How do inmates exit population?

Admissions variables plus...

Good time credits earned/good time credits revoked or lost

Release type

Type of release (parole, parole hearing number at release)

- Who is confined in population now?

Admissions variables plus...

Projected discharge date	Length of stay left
Projected Parole date	Good time credits earned
Parole board hearing number	Good time credits revoked

What Are The Simulation Products?

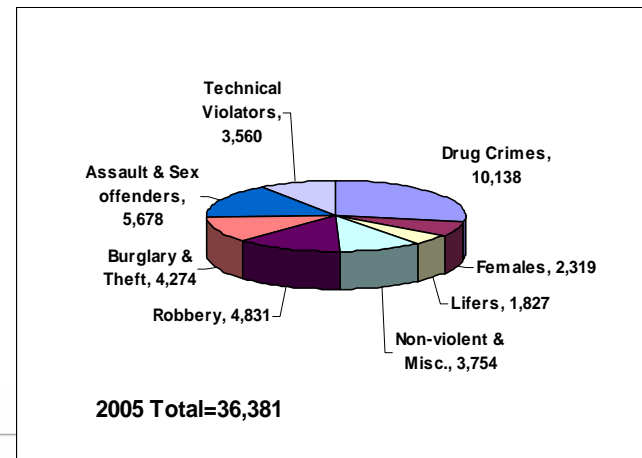
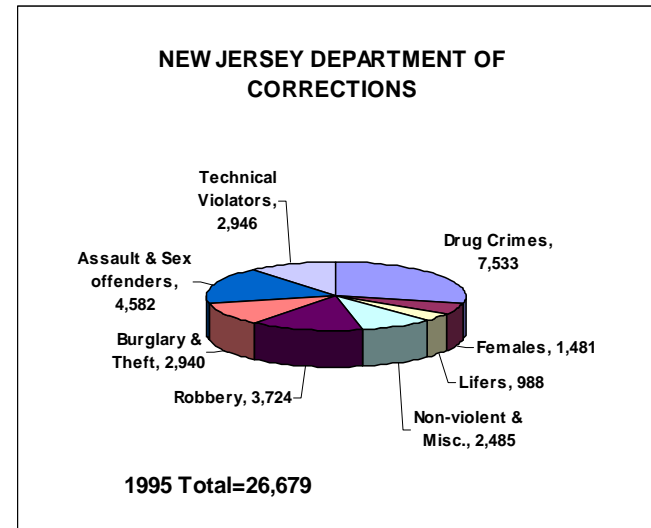
Wizard Simulation Model Output



Total and Disaggregate Population Reports

population								
File								
----- Popaulation ----- Popaulation ----- Popaulation -----								
----> FOR (FID=ALL/FSTA=PRIS_STK,PRIS_OLD,PRIS_PVT,PRIS_HLD,PRIS_NEW)								
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1998	8054	8117	8095	8150	8150	8184	8168	8179
1999	8335	8306	8254	8203	8185	8195	8160	8145
2000	8073	8072	8058	8073	8076	8068	8078	8115
2001	8171	8169	8154	8126	8135	8121	8106	8100
2002	8142	8105	8128	8140	8122	8114	8114	8141
2003	8080	8094	8096	8101	8070	8070	8110	8122
2004	8114	8107	8112	8106	8088	8128	8122	8144
2005	8183	8182	8122	8100	8066	8082	8084	8088
2006	8159	8165	8207	8220	8227	8260	8249	8266
2007	8263	8279	8305	8323	8327	8290	8267	8287

----- D1 Prison Population ----- D1 Prison Population ----- D1								
----> FOR (FID=DRUGS_D1_OLD,DRUGS_D1_NEW,AGG_DRUGS_D1/FSTA=PRIS_STK,PRIS_D								
Year	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb
1998	32	34	35	36	37	37	37	37
1999	40	41	42	42	40	41	41	40
2000	43	43	44	45	46	47	48	48
2001	48	49	50	50	50	51	50	49
2002	50	51	51	52	53	54	55	55
2003	54	54	55	56	56	57	56	57
2004	56	56	56	56	56	55	57	57

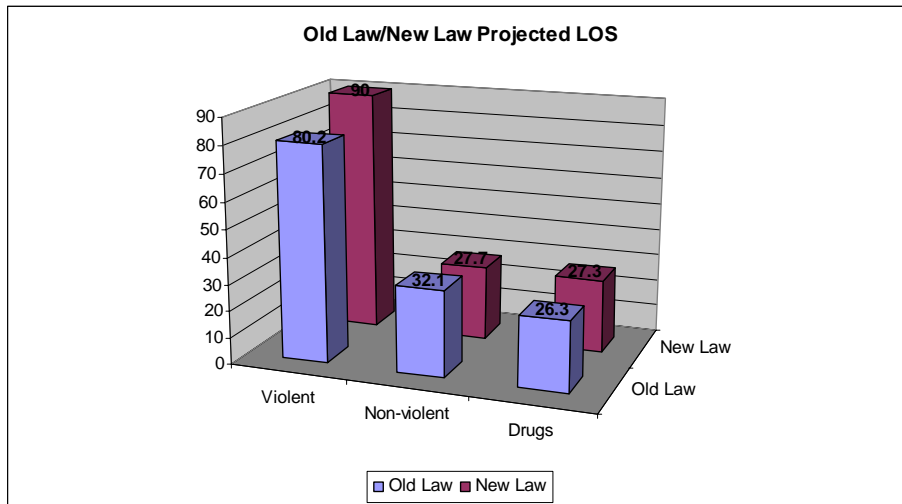


What Are The Simulation Products?

Wizard Simulation Model Output



Inmate Length of Stay Reports



Prophet 98 Custom Report Editor

Report Title:

List of Tables:

- Popaulation
- D1 Prison Population
- D2 Prison Population
- D3 Prison Population

Table Title:

Table Type:

- Population
- Movement
- Cohort LOS
- Cohort N

Time Interval:

- Monthly
- Quarterly
- Biannually
- Annually

Options:

- Normal
- Summary

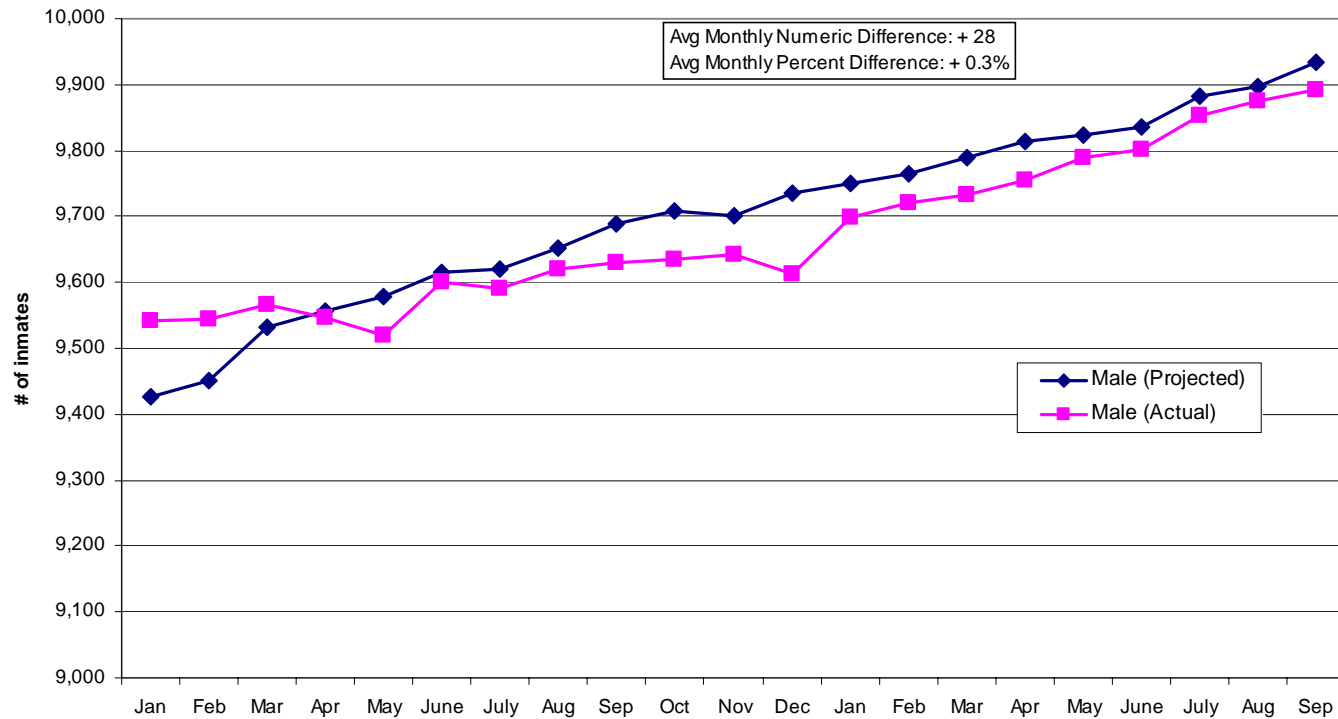
What Are The Simulation Products?

Wizard Simulation Model Output



Model Accuracy

FIGURE 3: Accuracy of The Institute's 2002 Forecast
Total Male Inmate Population: January - September 2003



Additional Model Outputs/Features



- A data entry import for fast, accurate data entry
- Quick change features that permit global changes and allow for “what-if” scenarios to be completed in minutes
- Sentencing law features that allow for clearer modeling of several governing sentencing laws
- A “prison capacity” feature that recommends early releases in response to prison capacity issues
- Age forecast overlay which produces projections by user defined age categories

Classification Forecasting Module



- Provides a simulation of classification decisions and produces monthly projections by custody level
- Cost module which generates prison operating and capital costs by custody type
- Project housing and cost impacts of increasing length of stay for violent offenders
- Can use simulation model to estimate the impacts of changes to a classification system

Simulation Model Benefits



- Better understanding of how the system operates
- Analyze the current confined, admitted and release populations of a correctional system
- Project ten year criminal justice population forecast
- Project correctional bed needs by classification levels
- Project future operational and construction costs by year
- Quantitative estimates of future changes and policies to the system

Residual Project Results



- Organized information influences decision makers
- Influence development or changes to sentencing practices
- Influence parole board and other release decisions
- Influence inmate classification process
- Inform capital construction plans
- Inform legislators and budget staff

Residual Project Results



- MIS database and system development
- Classification system development, implementation and validation
- Risk assessment and offender profiles
- Cost analysis studies
- Correctional alternatives studies
- Parole and probation forecasting



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