

SYSTEMSTATS

North Carolina Criminal Justice Analysis Center

Governor's Crime Commission

COMPARING DISCIPLINARY INFRACTION RATES FAIR SENTENCING AND STRUCTURED SENTENCING INMATES

Fair Sentencing and Structured Sentencing Inmates: A Natural Experiment

This research was conducted to determine whether, as the researchers predicted, truth-in-sentencing prison inmates with short sentences, no time off for good behavior, and no parole eligibility have more disciplinary infractions than pre-truth-in-sentencing inmates with long sentences, much time off for good behavior, and parole eligibility.

Research Design

A natural experiment. The researchers compared the disciplinary convictions of Fair Sentencing (pre-truth-in-sentencing law) and Structured Sentencing (truth-in-sentencing law) inmates admitted to North Carolina Prisons from June 1, 1995, through August 30, 1996. No disciplinary conviction data were collected after that period.

Because a substantial number of Fair Sentencing (FSA) and Structured Sentencing (SSA) inmates were admitted to North Carolina prisons during the study period and served sentences during that period fully intermingled, the researchers had the opportunity to collect and analyze data generated in what social researchers refer to as a natural experiment. There were two groups, determined by sentence type, which were given different treatments pursuant to the applicable laws. Fair Sentencing inmates had relatively long sentences, one half of their sentences in time off for good behavior, and eligibility for parole. Structured Sentencing inmates had shorter sentences, but no parole eligibility, and no time off for good behavior. SSA inmates could earn sentence-reduction credits equal to 15% of their sentences through work or program participation.

The data set. The entire research data set was from Department of Correction (DOC) inmate computer records. For each inmate, detailed demographic information and information concerning prior North Carolina incarcerations, conviction offense, and disciplinary convictions during the study period were obtained.

Male and female inmates of all ages were included. It was assumed that two pre-SSA categories of adult offenders under 21, committed youthful offenders and regular youthful offenders, were treated similarly to Fair Sentencing inmates over 21. Inmates with both an FSA sentence and a SSA sentence were excluded. Also excluded were inmates with three-strikes-and-you're-out sentences, mandatory-minimum sentences, split sentences, life sentences, and/or death sentences. Finally, inmates in for parole revocation were excluded because only FSA inmates could be returned to prison for violation of discretionary parole conditions. Inmates in prison because of probation revocation were included because both FSA and SSA inmates could be imprisoned for probation violation.

Hypotheses. Based on social scientific deterrence theory, the predictions below were formulated. In the predictions, "disciplinary conviction rate" refers to the rate of disciplinary convictions per inmate per year, not the percentage of disciplinary hearings resulting in conviction.



Central Prison

Comparing Disciplinary Infraction Rates

(1) Structured Sentencing inmates will have a higher disciplinary conviction rate than Fair Sentencing inmates.

(2) For less serious disciplinary offenses, Structured Sentencing inmates will have a higher disciplinary conviction rate than Fair Sentencing inmates.

(3) For more serious disciplinary offenses, there will be no statistically significant difference in the disciplinary conviction rates of the two groups.

(4) Structured Sentencing inmates will have a higher assaultive conviction rate.

(5) Structured Sentencing inmates will have a higher drug/alcohol conviction rate.

(6) Structured Sentencing inmates will have a higher rate of profanity/disobedience convictions.

(7) Structured Sentencing inmates will have a higher rate of work-absence convictions.

Control variables. In this type of research, it is important to be able to determine whether a difference in the two groups actually resulted from the operation of some variable (control variable) **other than** the variable (sentence type here) being studied. For example, if, in this research, white inmates were much more likely than black inmates to have disciplinary infractions and if there were a much higher percentage of white inmates in the Structured Sentencing group than in the Fair Sentencing group, a higher disciplinary infraction rate for the Structured Sentencing group would probably be the result of the over-representation of white inmates in the group, not the result of sentence type.



Variables to use as control variables were identified through study of published research concerning inmate misconduct. In the most important statistical procedures, the following variables were control variables: conviction-felony class, prior days in N.C. prisons, jail credit days, race, sex, age, whether the inmate was a probation revokee, and number of prior incarcerations in N.C. prisons or, in some analyses, infraction rate during prior N.C. incarcerations. The use of these control variables allowed the researchers to determine whether differences in the two groups were actually attributable to differences in the relevant law.

Primary statistical procedures. Cox regression¹ was used to compare the rates of occurrence of first disciplinary convictions, controlling for the control variables. Negative binomial regression, which also involved use of the control variables, compared the weighted disciplinary conviction rates during the entire study period.

Measurement of seriousness of prison disciplinary offenses. To be able to weight the seriousness of disciplinary offenses, the researchers had 88 prison administrators rate the 43 disciplinary offenses on a 50-point seriousness scale. The average seriousness scores were used as seriousness weightings in calculations of total seriousness scores of disciplinary convictions of the two groups. These scores were used in the negative binomial regression procedures.

Description of the study groups.

Table 1 (page 3) compares the two groups.

¹ Cox regression:

Cox regression and negative binomial regression, both of which are seldom studied in statistics courses and seldom used by researchers, were used because they provide meaningful results when many research subjects have zeros on the dependent variable. In this study, inmates with no disciplinary convictions during the study period had zeros on the dependent variable.

Comparing Disciplinary Infraction Rates

Table 1 Descriptive Findings concerning Study Groups

	FSA Inmates
Number of inmates in study	3194
% white	29.3%
% black	67.5%
% female	12.8%
% probation revokees	76.5%
% with 1+ discip. conv. in previous NC incarceration	14%
% with 1+ prior NC incarcer.	41.5%
Mean days in prison during study period	193.1
Mean days in prison during prior NC incarcerations	293.4
Mean days in jail prior to present incarceration	63.3

Several other findings complete the description of the study groups.

(1) The monthly percentage of Fair Sentencing inmates admitted decreased substantially during the study period. Seventy-two percent were Fair Sentencing during June of 1995 and 26.8% were Fair Sentencing during August of 1996. (This pattern indicates that the study period used was optimum or nearly optimum).

(2) About 75% of each group had no disciplinary convictions. Of the 6904 subjects, 1736 had at least one disciplinary conviction.

(3) FSA inmates 20 and younger had a rate of 2.6 disciplinary convictions per year. SSA inmates 20 and younger had a rate of 3.3 disciplinary convictions per year.

(4) Among inmates 36 and older, FSA inmates had a disciplinary conviction rate of .4 per year, and SSA inmates had a disciplinary conviction rate of .5 per year,

(5) There were 95 inmates with one or more A-level (the most serious) disciplinary offense convictions, 495 with one or more B-level disciplinary offense convictions, 1380 with one or more C-

level disciplinary offense convictions, 493 with one or more D-level disciplinary offense convictions, and 24 with one or more E-level (the least serious) disciplinary offense convictions.

Trend of disciplinary convictions in North Carolina prisons. There were 38,264 disciplinary convictions in 1994, 45,646 in 1995, and 57,305 in 1996. The number of convictions increased 26% from 1995 to 1996.

Some, but not all, of this increase is explained by the growth in prison population from 23,446 in 1994 to 30,775 in 1996. The annual rate of inmate disciplinary conviction increased from 1.7 in 1995 to 1.9 in 1996. An increase of 0.2 disciplinary convictions per year per inmate is approximately 6,500 convictions for an inmate population of 32,500 inmates, which was the prison population in June of 1997.

Annual disciplinary conviction rates of the two groups. SSAs included in the study had an overall disciplinary conviction rate per year of 1.64; included FSAs had an overall disciplinary conviction rate per year of 1.17. The annual disciplinary conviction rate of SSAs was 40% higher than the annual disciplinary conviction rate of FSAs. For all inmates included in the research, the rate was 1.42 per year.

Comparing Disciplinary Infraction Rates

Subjective impressions concerning SSA inmate behavior. In interviews and meetings, disciplinary-system personnel and nearly all of the administrators, correctional officers, and case managers we met with expressed the opinion that SSA inmates are harder to manage and present more disciplinary problems than FSA inmates. For example, the disciplinary hearing officers reported that SSA inmates who are subjected to disciplinary processing often say, in effect, “I don’t have anything to lose” if convicted for a disciplinary offense.

Cox regression results. Table 2 presents all of the Cox regression results. A risk ratio of 1 indicates that there was no difference in the disciplinary infractions of the two groups. A risk ratio over 1.0 indicates a higher rate for Structured Sentencing inmates. A risk ratio under 1.0 indicates a lower rate for Structured Sentencing inmates. A risk ratio of 1.5 would indicate that SSA inmates had a 50% higher rate of first conviction for a particular type of offense than did FSA inmates. Statistical significance is indicated as follows: *=.10 level; **=.05 level; ***=.01 level. The high-score offenses are ones with seriousness ratings of over 31.5 and the low-score offenses are ones with seriousness ratings

of 31.5 and lower. The cutoff of 31.5 was selected because disobedience of an order, which was subjectively selected by the research team as the “less serious” offense with the highest mean seriousness rating, had a rating of 31.5.

Negative binomial regression results. Table 2 presents also the negative binomial regression results for all of the inmates included in the study. The reported numbers are the exponentiated coefficients. An exponentiated coefficient of 1.5 would indicate that SSA inmates had a 50% higher weighted rate of conviction during the study period for a certain type of disciplinary offense. The weighting of offenses was based on seriousness ratings obtained in research conducted by several members of the research team solely to obtain such ratings on a 50-point seriousness scale.

It is important to note that the Cox regression procedures compared the rates of occurrence of first disciplinary convictions of certain types for FSA and SSA inmates. The negative binomial regression procedures compared the total seriousness scores of disciplinary convictions during the study period, controlling for the length of time in prison during the study period.

Table 2 Cox and Negative Binomial Regression Findings

Offense(s)	(Cox Regression Risk Ratios)			
	M&F	M	F	M<
All offenses				
First ever	1.22***	1.15***	1.99***	1.16
Low score	1.22***	1.17**	1.78***	1.14
High score	1.3***	1.22***	2.08***	1.14
Assaultive	1.5***	1.46***	1.64	1.26
Drug/alcoh.	0.81	.75*	1.05	.70
Profanity/ disobed.	1.40***	1.32***	2.04***	1.14
Work absen.	1.17	1.10	2.95	.83

Comparing Disciplinary Infraction Rates

Conclusions

Conclusions relating to the hypotheses.

Hypothesis 1. As hypothesized, SSA inmates had a higher weighted disciplinary conviction rate (based on negative binomial regression) and earlier disciplinary convictions (based on Cox regression). The weighted disciplinary conviction rate of SSA inmates was 19.4% higher than that of FSA inmates.

Hypothesis 2. The negative binomial regression findings regarding disciplinary offenses rated 31.5 or lower in seriousness do not support the hypothesis predicting a higher conviction rate for SSA inmates. The Cox regression results tend to support this hypothesis in that SSA inmates generally had a higher rate of conviction for first low-score offenses than FSA inmates. Therefore, the hypothesis was partially supported.

The lack of support for this hypothesis in the negative binomial regression procedure may have resulted from the fact that convictions for less serious disciplinary offenses are much less likely to result in demotion from minimum custody to medium custody and in forfeiture of good time. FSA inmates appear not to be more effectively deterred from commission of less serious disciplinary offenses than SSA inmates.

Hypothesis 3. Contrary to hypothesis, SSA inmates had a 32% higher weighted disciplinary-conviction rate than FSA inmates and a higher rate of conviction than FSA inmates for first offenses rated higher than 31.5 in seriousness. This difference, which is consistent with the most general hypothesis (#1), may result from the fact that most of the more serious disciplinary offenses presumptively call for demotion from minimum custody to medium custody and forfeiture of good time. (FSA inmates not in a minimum custody prison are rarely granted parole.)

Hypothesis 4. As hypothesized, the SSA inmates had a higher weighted disciplinary conviction rate than FSA inmates for assaultive infractions, and the difference was statistically significant. The

negative binomial regression result indicates that the SSA inmates had 71% higher weighted rate of conviction for assaultive disciplinary offenses than FSA inmates. The Cox regression result indicates that the rate of conviction for first assaultive offenses by SSA inmates was 50% higher than the rate of conviction for first assaultive offenses by FSA inmates. These statistically significant findings establishing higher assaultiveness of SSA inmates are the most important findings of this research.

Hypothesis 5. The hypothesis that SSA inmates would have a higher rate of conviction for drug/alcohol offenses was not supported. Though the differences were not statistically significant, FSA inmates tended to have more and earlier drug/alcohol disciplinary convictions than SSA inmates. This occurred even though the 1425 FSA inmates imprisoned for drug offenses had an annual disciplinary conviction rate of .9, while the 1246 SSA inmates incarcerated for drug offenses had an annual disciplinary conviction rate of 1.3. It occurred also even though a smaller percentage of FSA drug-felony inmates (62%) than SSA drug-felony inmates (72%) were in minimum-custody facilities.

Hypothesis 6. As hypothesized, the SSA inmates had a 30% higher weighted disciplinary conviction rate than FSA inmates for profanity/ disobedience infractions, and the difference was statistically significant. SSA inmates also had earlier disciplinary convictions than FSA inmates for profanity/ disobedience offenses.

Hypothesis 7. The general hypothesis that FSA inmates would have a higher work-absence conviction rate than SSA inmates was not supported. The hypothesis was supported only among males 21 and older. The lack of general support for the hypothesis may have resulted from SSA inmates being less likely to take and keep prison work assignments, possibly because of awareness that the sentence-reduction credits (earned time) they would earn could be forfeited as a disciplinary punishment. If a smaller percentage of SSA inmates have work assignments, there would be a lower potential for work-absence infractions by SSA inmates. Another possible

Comparing Disciplinary Infraction Rates

explanation is that, as reported to research team members by NC DOC personnel, inmates who are absent from work are usually charged with a disciplinary offense other than work absence, such as disobedience of an order.

Differences attributable to Structured Sentencing law.

Strong data on the identified potentially important control variables was used in configuring control variables utilized in the Cox regression and negative binomial regression procedures. Therefore, the Cox regression risk ratios and binomial regression exponentiated coefficients present differences that can, to a substantial extent, be attributed to implementation of Structured Sentencing, and not just to differences in the types of people incarcerated under Fair Sentencing and Structured Sentencing.

Discussion

The recent trend in disciplinary convictions in North Carolina prisons indicate that there is a substantial increase in disciplinary enforcement activity occurring. The qualitative impressions gleaned from workers in the prison system by the research team suggest that an unusually high infraction rate of Structured Sentencing inmates is contributing to the increase in disciplinary enforcement activity. The statistical analyses, with control variables identified in the research literature, indicate that, in general, Structured Sentencing inmates had higher weighted disciplinary infraction rates than Fair Sentencing inmates during the study period and that a significant part of the difference can be attributed to the implementation of Structured Sentencing. While this research was not initiated as a “triangulation” study in which various types of data and analyses were to be used, the consistency of the different types of information contribute to the credibility of the statistical findings.

Implications

The most important and most general implication of this research is that, unless control measures are effectively brought to bear on Structured Sentencing inmates, North Carolina Department of Correction prison administrators can expect the rate of disciplinary infractions of inmates to continue to increase substantially as the percentage of inmate population who are under Structured Sentencing law sentences increases. Most significantly, Structured Sentencing inmates can be expected to be significantly more prone to commit assaultive infractions than Fair Sentencing inmates.

Authored by:

John M. Memory, J.D., Ph.D.
University of North Carolina at
Pembroke

Assisted by a Research Team of:

Guang Guo, Ph.D.
University of North Carolina at
Chapel Hill

Ken Parker, M.C.S.
Director, Decision Support
North Carolina
Department of Correction

Tom Sutton
Research and Planning Division
North Carolina
Department of Correction

Danny Thompson
Division of Prisons
North Carolina
Department of Correction

With the Assistance of:

Kitty Herrin, Ph.D.
North Carolina
Sentencing Commission

Comparing Disciplinary Infraction Rates



SYSTEMSTATS

A Publication of the
Governor's Crime Commission
Department of Crime Control and Public Safety
(919) 733-4564
<http://www.gcc.state.nc.us>

James B. Hunt Jr
Governor

Richard H. Moore
Secretary

Linda W. Hayes
Chair, Governor's Crime
Commission

Robin Lubitz
Executive Director

David Jones
Deputy Director

Renee Hoffman
Public Affairs
Director

Douglas Yearwood
Director,
Analysis Center

Navin Puri
Information
Systems Planner

James Klopovic
Lead Evaluator

Richard Hayes
Social Research
Associate

Charlene Coppersmith
Data Analyst
Desktop Publisher

This research was funded by the Governor's Crime Commission with Edward Bryne memorial funds, (grant number 140-196-11-D190).



North Carolina Governor's Crime Commission
 1201 Front Street, Suite 200
 Raleigh, North Carolina 27609

The Governor's Crime Commission was established in 1977 by the North Carolina General Assembly under G.S. 143B-479. Its primary duty is "to be the chief advisory body to the Governor and the Secretary of the Department of Crime Control and Public Safety for the development and implementation of criminal justice policy." The Crime Commission is always open to comments and suggestions from the general public as well as criminal justice officials. Please contact us and let us know your thoughts and feelings on the information contained in this publication or on any other criminal justice issue of concern to you.

James B. Hunt, Jr. Governor	Linda Hayes, Chair Governor's Crime Commission	George L. Sweat, Chief Winston-Salem Police Department Governor's Crime Commission Vice-Chair	Richard H. Moore, Secretary Department of Crime Control and Public Safety
J. B. Allen, Jr. Superior Court Judge	Howard Boney District Attorney	H. David Bruton, Ph.D., Secretary Department of Human Resources	Earl "Moose" Butler, Sheriff Cumberland County Sheriff's Office
Dallas A. Cameron, Director Administrative Office of the Courts	Lonnie W. Carraway Defense Attorney	Gwendolyn Chunn, Director Division of Youth Services	Janice McKenzie Cole U. S. Attorney
James J. Coman, Director State Bureau of Investigation	Francis D'Ambra, Jr., Chief Manteo Police Department	Michael Easley Attorney General	Charles Patrick Farris, Jr. Defense Attorney
Robert Guy, Director Adult Probation and Parole	Edwin Hardy, Member North Carolina House of Representatives	Mack Jarvis, Secretary Department of Correction	Joe L. Kiser, Member North Carolina House of Representatives
Jack D. Marion Citizen Representative	Carol J. Mattocks Citizen Representative	Frank McGuirt, Sheriff Union County Sheriff's Office	John Minges, III Citizen Representative
Burley Mitchell, Jr., Chief Justice North Carolina Supreme Court	Collice C. Moore Youth Member	Donnie Parks, Chief Henderson Police Department	James I. Pendergraph, Sheriff Mecklenburg County Sheriff's Office
Senator Eric Reeves, Member North Carolina State Senate	Timothy Spear Clerk of Court	Ronald E. Spivey District Court Judge	William H. Stanley Buncombe County Official
Dan Stieneke Division of Prisons	Ed Taylor Administrator Juvenile Services, AOC	Judge Albert S. Thomas Chief District Court Judge	Michael E. Ward Superintendent of Public Instruction
Deborah Lamm Weisel Police Executive Research Forum	Allen Wellons, Member North Carolina State Senate	Claudette Burroughs-White Citizen, Council Woman	Frederick Yates, Mayor Winfall