



Hennepin County Bureau of Community Corrections

Pretrial Release Study

Prepared By

Rebecca Goodman, Ph.D.
Senior Statistical Analyst, Planning and Evaluation

December, 1992

153608

Planning and Evaluation Unit
Michael Zimmerman, Ph.D. Director
A-510 Government Center
Minneapolis, Minnesota 55487-0056

153608

Hennepin County Bureau of Community Corrections

Pretrial Release Study

NCJRS

MAR 29 1995

ACQUISITIONS

153608

U.S. Department of Justice
National Institute of Justice

This document has been reproduced exactly as received from the person or organization originating it. Points of view or opinions stated in this document are those of the authors and do not necessarily represent the official position or policies of the National Institute of Justice.

Permission to reproduce this copyrighted material has been granted by
Hennepin County/Bureau of Community
Corrections

to the National Criminal Justice Reference Service (NCJRS).

Further reproduction outside of the NCJRS system requires permission of the copyright owner.

For Further Information Contact:
Rebecca Goodman, Ph.D.
Bureau of Community Corrections
Planning and Evaluation
A-510 Government Center - Mailcode 056
300 So. 6th Street
Minneapolis, MN 55487-0056
612-348-4257

ACKNOWLEDGEMENTS

This study, and the changes it initiated, would not have been possible without the efforts of many individuals. For their initial and ongoing commitment to the research, I would like to thank former Chief Judge Roberta Levy, current Chief (and former Assistant Chief) Judge Kevin Burke, Michael Cunniff, Associate County Administrator for the Bureau of Community Corrections, Sigmund Fine, Director of Adult Corrections, David Gair, former Manager of the Investigation Division, and Joe Heinz, current Manager of the Investigation Division. David Gair requested the study and deserves special thanks for his insight and patience. I also appreciated the cooperation of William Calder and Dennis Miller, supervisors of the new Pretrial Unit, and their willingness to integrate research findings with policy decisions.

The contributions of Dr. Michael Zimmerman, Director of Planning and Evaluation, to all aspects of the research, from the data collection to comments on various drafts of this report, were extensive. I greatly appreciate his knowledge, counsel, and support. Gratitude is also extended to John O'Sullivan, Administrative Services Manager, and to my research colleagues, Sarah Allen and Marcy Podkopacz, for their comments on this report. I further thank Sarah for her integral role in the field test of the new instrument.

Appreciation is also extended to Deb Abeln, Jackie Jakubiec, Robin Martinson, Mary Rubbelke, Teresa Wright, and Theresa Alyeshmerni for their painstaking efforts at data collection and data entry. Special thanks are extended to Theresa Alyeshmerni who was involved in both data samples and who quickly proved to be an indispensable research assistant. I am also indebted to Sue Maki for typing numerous drafts of this report.

Table of Contents

	<u>Page</u>
Purpose of the Research/Background.....	2
Description of the Data.....	4
Methodological Approach: Multivariate Analyses of Failure to Appear and New Offenses	5
Results of the Statistical Analyses.....	7
Descriptive Characteristics of Total Sample/Subsamples	7
Prediction of New Offenses.....	8
Prediction of Failure to Appear	10
Overall Predictive Accuracy.....	12
The New Scoring Instrument	13
The Pretrial Release Advisory Committee.....	14
Variables Added to the Prediction Scale.....	14
Changes in Variable Definitions and Weights.....	15
The "Field Test" of the New Instrument and Derivation of the Cutoff Scores.....	16
Summary and Conclusions.....	18
Notes	21
References.....	24
Appendix: Attachments	27
Tables	32
Figures.....	43

This report is written for two distinct audiences: (1) criminologists and other researchers who are interested in the prediction of criminal activity; and (2) practitioners who are charged with making decisions about constraints and conditions to be placed on persons awaiting trial. Specifically, this paper first presents the methods and findings of research on pretrial crime and pretrial "failure to appear" based on two samples of accused persons from Hennepin County, Minnesota. The paper then summarizes how the research was translated into action. This translation resulted in the implementation of a new quantitative instrument for guiding decisions about whether an individual should be released from jail pending the resolution of their charges, and if so, under what conditions.

The writing of a paper intended for two separate audiences is especially challenging. Researchers may be less concerned with policy implementation; conversely, practitioners may be less concerned with the statistical methodology. To help direct readers with these different concerns to the material that may be most relevant to them, the paper has been organized into six sections. The first section outlines the purposes of the research and briefly discusses the pretrial scoring instrument, (the "modified Vera scale"), which had been in use since 1972. Section two describes the data. Section three discusses the statistical approach utilized to predict pretrial rearrests and failure to appear in court. Section four outlines the research findings. Section five contrasts the new scoring instrument with the research findings and discusses why modifications were made. The final section summarizes the research findings and concludes with some thoughts on how the study was beneficial to practitioners and policymakers.

Section One: Purpose of the Research/Background

The genesis of the research was threefold. First, the management of Felony Probation wanted to determine if the modified Vera scale it had been using for eighteen years was predictive of pretrial "failure". "Failure" was defined as either a failure to appear in court or a new offense during the pretrial period. Felony staff interviewed and scored only those individuals charged with a felony or gross misdemeanor; individuals charged with a misdemeanor were generally released from custody within several hours of booking. Since the original Vera scale was designed to predict failure to appear, confidence in the instrument's ability to predict new offenses was lacking. Further, evidence from previous studies in this jurisdiction had suggested that this scale contained numerous items which were not related to failure to appear (see Osterbaan, 1986 and Bennett and Ford, 1988).

The second issue to be addressed was the "neutrality" of the scale with regard to race and gender. For example, if an individual scale item such as time in the metropolitan area was found to favor whites but not be predictive of pretrial failure, its continued inclusion on the scale would be suspect. In order to insure fair and equitable treatment across individuals, the extent to which scale items might favor or disadvantage certain

groups needed examination. Specifically, the relationship of the scale items to race, gender, and pretrial failure was to be thoroughly investigated.

Third, judges, county attorneys, and corrections officials were concerned about crowding in the pretrial detention facility. While numerous attempts to alleviate jail crowding had been made, the problem persisted. Each Friday, the Chief Judge was routinely forced to reverse detention decisions made by other judges earlier in the week due to lack of bed space. All parties understood that inherent in the release decision was the tradeoff between jail capacity and risk. This risk existed because the released individual could fail to appear, commit a new offense, or both. Public safety concerns were of particular importance; thus, the focus from the start was on prediction of pretrial failure as it pertained to new offenses. While the explicit goal was to use a scale which was predictive of pretrial criminal behavior, it was implicitly hoped that overcrowding in the jail would be reduced. Since the rate of pretrial "failure" (new offenses) was unknown, it was difficult to specify at the outset how achievement of the implicit goal, reduction in jail overcrowding, was to occur.

The issue of release practices and pretrial detention is not a new one for the criminal justice community. The history of various bail reform studies which were precursors to the development of the original Vera scale and the widespread adoption of scoring devices based on the Vera prototype have been well documented elsewhere (see for example, Goldkamp and Gottfredson, 1985). Research has been conducted in a number of jurisdictions on the relationship between the individual scale items and pretrial failure (see for example, Gottfredson, 1974; Toborg, 1981; and the review in Gottfredson and Gottfredson, 1986). In certain unique instances this research has been used in conjunction with judicial decision making to structure what is known as bail guidelines. With bail guidelines, two dimensions determine the presumption regarding pretrial release. These dimensions are the seriousness of the current charge and the individual's score on a research-based risk scale (see Goldkamp et al., 1981, and Goldkamp and Gottfredson, 1985 and 1988). More recently, research has focused on pretrial drug test results as predictors of failure (see Smith et al., 1989; Toborg et al. 1989; Goldkamp et al., 1990; Visher, 1990; and Visher and Linster, 1990).

The latter two developments in pretrial research are not part of the current study. The possibility of utilizing "bail guidelines" to structure the release decision was discussed but rejected, in part, because it was not considered politically feasible to dismantle the current private bail/bond system. Further, although Minnesota has a tradition of "Guidelines" for sentencing, the approach has not been enthusiastically embraced by all judges, attorneys, and corrections officials. Self-reported drug use will be analyzed to determine if it is a significant predictor of failure to appear and/or new arrests; however, Hennepin County does not systematically require or offer urinalysis prior to the release decision.

The modified Vera scale was comprised of ten separate items. Items for which it was possible to receive positive points included residing at a current or past address for specified periods of time, living with family or friends, residing in the metropolitan area for a minimum of five years, being employed or receiving government assistance, and knowing if the individual was allowed to turn himself/herself in on the morning of their first appearance.¹ Items for which it was possible to receive negative points included if the individual is or was dependent on drugs or alcohol, had ever received a bench warrant, or escaped from custody. Additional negative points were awarded if the current offense involved a person and/or a weapon. Information regarding the current offense generally originated from the criminal complaint; information on the remaining eight scale items was **self-reported**. The recommendation to release an individual with no-bail required was made in almost all cases where the individual had a minimum total score of five and a verified address. Copies of the interview form and scoring sheet are included in the Appendix (see Attachments 1 and 2).

Section Two: Description of the Data

In order to assess the validity of the research findings, two distinct samples were collected. Thus, the variables found to be predictive of pretrial failure in one sample could be compared to the alternative sample. This comparison would show the extent to which results were unique to a sample or could be generalized across them. Only individuals charged with a felony or gross misdemeanor were interviewed by the Felony Probation staff. The first sample thus included all 866 individuals who were interviewed during the first quarter of 1989 (January 1, 1989 thru March 31, 1989). The second sample included all individuals who had a first appearance for a felony or gross misdemeanor from September 14, 1989 thru February 28, 1990. The second sample of 1,058 people was collected slightly differently because of a policy change which occurred between the two time periods. Partially in response to jail overcrowding, the county attorney's office began to issue what was known as a summons. A large number of individuals were mailed a summons and told when to appear on their first appearance. Previously, these individuals would have been booked and interviewed in the jail prior to first appearance. Although generally not interviewed by the Felony Probation staff², they represented approximately one fifth of the total sample (n=203).

Information on individuals from both samples originated from four separate sources. The interview conducted by Felony Probation staff served as the source for the points received on the modified Vera scale. Other information collected at the interview included education level, marital status, number of children, presence of a telephone, type of government assistance, probation/parole status, participation in drug or alcohol treatment, and the release recommendation of the probation officer (see Attachments 1 and 2 of the Appendix). Regardless of interview status, prior criminal history data was collected on all individuals. Prior felony and gross misdemeanor conviction history

originated from official state records³ in those cases where the individual was not convicted of the current charge. If convicted, the source of prior felony convictions was the "Minnesota Sentencing Guidelines Worksheet" required by the Court (see Attachment 3). Prior misdemeanor and petty misdemeanor convictions originated from Hennepin County court records. Unfortunately, statewide records of prior misdemeanor convictions do not exist; the results regarding prior misdemeanor convictions could be biased to the extent individuals have convictions in neighboring counties (or states). Information on the current charge(s), release decision, case disposition, failure to appear, and new offenses came from Hennepin County court records. Individuals could be involved in new crimes in other counties; the possibility of undercounting this aspect of pretrial failure exists. Since both of the samples were retrospective, new felony and gross misdemeanor offenses from other counties would most likely be noted in the current case history. The extent to which new misdemeanor offenses are committed in other counties is unknown. We can examine, from the self-reported interview data, the stability of our samples in terms of Hennepin County residence. For example, 85% of those interviewed and released reported a current address which was within Hennepin County. Of those individuals with a current Hennepin address, 45% had lived at this address for at least one year.

Pretrial failure to appear was measured by the existence of a bench warrant(s) on the current case.⁴ Bench warrants were issued for violations of conditional release as well as for failure to appear. In almost all cases, the bench warrant was issued for non-appearance at a scheduled court date. Pretrial crime was measured by recording new offense dates which occurred between the date of first appearance and the case resolution date. All new offenses were recorded, including petty misdemeanors. This measurement of pretrial crime differs from many studies which typically follow the individual for 90 to 120 days after release, regardless of the case disposition date. By following individuals for 90 or 120 days and ignoring case disposition date, new offenses which are committed after the current case is resolved are erroneously counted as "pretrial" crime. The current study avoids this problem by examining only new offenses which occur during the actual pretrial window (i.e. first appearance through case resolution). Unfortunately, this tighter measure of pretrial crime is not without a limitation. Measuring new offenses strictly between the first appearance and case resolution date means that individuals do not have equal opportunities to fail; the period "at risk" is not standardized.⁵ Future analyses of these data will focus on predicting the probability of new offenses with techniques that incorporate time elapsed since release (i.e. survival analysis).

Section Three: Multivariate Analyses of Failure to Appear and New Offenses

Multivariate techniques allow the researcher to test the importance of various independent variables, such as the individual items on the modified Vera scale, in the prediction of pretrial failure. Past research has shown that the variables which best predict failure to appear are not necessarily the same variables which best predict new offenses.⁶

Separate equations were estimated for the two types of pretrial failure. Further, both measures of failure have two possible outcomes (i.e. the individual either failed to appear or not; the individual committed a new offense or not). The appropriate statistical method to apply in this circumstance was logistic regression.⁷

Logistic regression produces coefficients for each of the independent variables. Each coefficient reflects the strength and direction of the variable's effect on the probability of pretrial failure, controlling for the effects of the other independent variables. When an independent variable has only two possible outcomes, (i.e. the individual received points for living 5 years or more in the metropolitan area: = 1 for "yes", = 0 for "no") the "yes" or "= 1" answer is associated with an increase or decrease in the probability of pretrial failure. Whether the probability increases or decreases is a function of the "sign" of the coefficient. A positive coefficient will be associated with an increase in the probability of pretrial failure; a negative or minus sign will be associated with a decrease in the probability of pretrial failure. The strength of the coefficient's relationship to the probability of failure is indicated by the level of "statistical significance". An observed relationship between an independent variable such as prior felony convictions and pretrial failure can be the result of a "true" association; alternatively, it can be due to lack of representativeness of the sample, or sampling error. Following customary practices, a relationship is considered to be "significant" when the chances of sampling error are very low (5 or less out of 100 or .05). A relationship is considered to be "somewhat significant" when the chances of sampling error are between 5 and 10 out of 100, or .10. All other relationships are considered to be "not significant".

Estimation of the logistic regression equations is limited to those individuals who were actually released from jail at some point prior to the disposition of their case. In both data samples, approximately 74% of the individuals were released at, or subsequent to, their first appearance. The remaining 26% were held in jail the entire length of their case. Various researchers (most recently Rhodes and Matsuba, 1984; Rhodes, 1985; Smith et al., 1989; and Goldkamp et al., 1990) have pointed out that estimates based solely on released individuals will be biased. As a consequence, variables which appear to be significant may really be insignificant and vice versa.

Detained individuals are usually very dissimilar from those released. These differences are to be expected for as Goldkamp et al. (1990) note, "... hopefully jailing of defendants before trial is not done on a random basis."⁸ Presumably these differences extend to the risk of failing to appear or committing new offenses.⁹ While it is acknowledged by all that the estimates will be biased, there is disagreement on the seriousness of the problem. Smith et al. (1989) argue for the use of a technique called "censored probit analysis" which corrects for the sample selection problem. On the other hand, Goldkamp et al. (1990) found no striking differences in the variables deemed significant (or insignificant) when results with and without a correction for detention were

compared.¹⁰ Regardless of whether the individual items on the scale remained the same or were altered, it was known at the outset that bail was going to continue to coexist with release recommendations by the Probation Staff. Thus, one could argue it was unlikely that individuals detained prior to the research would be vastly different from those detained after the research. In fact, explicit steps were taken to insure that individuals with similar characteristics to those currently detained would not be released initially under the new instrument (see Section Five). Future analyses of these data will investigate the effects of utilizing different techniques to adjust for those detained.

Section Four: Results of the Statistical Analyses

The results reported in Tables 3 through 6 originate from the second sample (all gross misdemeanor and felony first appearances from September 14, 1989 thru February 28, 1990). This sample was chosen because it was collected after an important change in policy (the issuing of summons discussed in Section Two). Identical analyses were performed on the first sample. Important differences in the results across the two sets of data are discussed in the text. The section is divided into four parts. Part one will describe the general characteristics of the sample. Parts two and three will outline the results of predicting new offenses and failure to appear in court. The definition of each variable appears in Table 1. Part four outlines overall predictive accuracy. It discusses how well the "best" models predict pretrial behavior and compares the findings from this jurisdiction to other research.

Descriptive Characteristics of the Total Sample/Three Subsamples

The characteristics of the total sample by interview and release status appear in Figure 1. The total sample is composed of three distinct subsamples. The largest subsample (N=529, or 50%) includes those individuals who were interviewed and released. Most of the prediction equations were estimated using this subgroup. Individuals who were released but not interviewed (N=249) represent a second subgroup. These individuals either posted bail prior to first appearance or were mailed a "summons"; they constitute 24% of the total sample. Finally, those detained from first appearance through case disposition (N=280) represent the remaining 26%.

The characteristics of these three subsamples are shown in Table 2. It is particularly interesting to contrast some of the characteristics across the groups. For example, the detained group has a high percentage of individuals arrested for a person offense and a high percentage with prior felony convictions. The group released but not interviewed has a high percentage of whites. While we point out these differences and note the causes for them are multi-faceted, they are not the central subject of this research.

The pretrial failure rates for the two subgroups which were released are displayed in Figures 2 through 5. The pretrial offense rate of those interviewed and released was 22.9%; the failure to appear rate was 16.6%. The new offense rate was 20% and the failure to appear rate was 21% when individuals released but not interviewed were added. Changes in the pretrial failure percentages occurred because individuals released but not interviewed had higher failure to appear rates and lower pretrial arrest rates than those interviewed and released (see Table 2). The types of new offenses are shown in Figures 6 and 7. These figures clearly show the bulk of the new offenses occurring during the pretrial window were misdemeanors. Of the 199 total new offenses committed by those interviewed and released, 161 (or 81%) were petty misdemeanor or misdemeanor offenses. A similar pattern held when all released individuals were included. While misdemeanor offenses are less serious than gross misdemeanor or felonies, person crimes are still represented at this level. In terms of public safety, offenses such as assault V (included in misdemeanor person) and driving while intoxicated (DWI included in misdemeanor traffic) raise concerns equal to those generated by felony and gross misdemeanor person offenses. Of the 199 total new offenses, 45 (or 23%) were for offenses involving persons or with the potential of victim injury (misdemeanor and gross misdemeanor DWI's).

Generally, the prediction equations were estimated over the subsample interviewed and released. Before discussing the equations, Figures 8 through 13 graphically highlight selected descriptive statistics for this group. Figure 14 contrasts the no-bail release recommendation made by the Probation Staff with the Judges' decision at the first appearance hearing. The recommendation was conservative; only 23% of the group were recommended for no-bail release. Judges generally agreed and released 22% of the group in this fashion. Another 16% were released with "conditions" (i.e. weekly telephone contact) not requiring bail. Approximately 30% posted bail at first appearance. Table 3 shows the pretrial new offense and failure to appear rates by type of release and average modified Vera scale score. Individuals released with no-bail required have the highest scale scores and, with one exception, the lowest pretrial failure rates.

Prediction of New Offenses

Three equations estimating the probability of committing a new offense appear in Table 4. The first equation, Model 1, estimates the effects of the modified Vera scale items. Two of the nine variables were significant. Individuals who were employed/received government assistance (Employment/Income) had a lower probability of committing a new offense; individuals with a current or past bench warrant (Bench Warrant) had a higher probability of committing a new offense. The seven remaining variables were found to be insignificant in the prediction of pretrial crime. These variables included residence, living situation, time in area, voluntary surrender, chemical abuse, and if the current offense involved a person and/or a weapon. A variety of different formulations for the independent variables were estimated. For example, as Attachment 2 illustrates it was possible to get 3

points for residence if an individual lived at their current residence for a minimum of 1 year. By assigning the value of 1 to these individuals and 0 to all others, we could estimate the effect of this combination against the one reported in Model 1 (= 1 if present residence \geq 3 months/past residence \geq 6 months; = 0 for all others). None of the different formulations estimated were significantly related to new offenses committed in the pretrial period.

Model's 2 and 3 show the estimates when significant Vera items are included with other variables, such as prior conviction history and categories of the instant offense. The variable Employment/Income remained statistically significant but Bench Warrant was no longer significant when prior felony convictions, prior misdemeanor convictions, type of instant offense, and age were included. When race was included in the equation, the significant variables from Model 2 remained significant or somewhat significant with one exception. If the instant offense was a drug sale or possession, this fact no longer was associated with a higher probability of committing a new offense.

The interpretation of the significance of race is fraught with difficulties. Three possible interpretations are given below to illustrate the complexity of the problem. First, since there were no reliable measures of income for the sample, race may be a proxy for socio-economic status.¹¹ Second, race may be a reflection of police behavior. Let us assume that blacks and whites have equal propensity to be involved in criminal activity. If the police patrol more heavily in black communities their very presence could detect criminal activity and result in a higher number of black arrests. Defining the pretrial crime variable such that it is based on convictions, rather than arrests, does not improve matters. If the variable is more a reflection of crime detection than propensity, and no other racial effects are present following arrest through disposition, blacks would still be over-represented in terms of participation in criminal activity. Third, the significance of race may be the result of racial differences in criminality.¹² Given the present data, it is not possible to disentangle cause and effect relationships.

Why is race included in the equations at all? Obviously such a variable would not be included on a pretrial release scale. Simply eliminating race from the equations does not mean it is not reflected in the remaining independent variables. For example, race may be correlated with prior convictions. When race is dropped from the equation, its effect may be partially absorbed in the coefficient on prior convictions. Only by estimating the equations with and without race can we observe how the coefficients on the other independent variables, and ultimately the points on a new pretrial scale, reflect their interrelationship with race. This knowledge can then lead to more informed discussion on how a pretrial release scale can be free of bias.¹³

Model's 2 and 3 of Table 4 are labeled the "best" models in the sense that other variables were estimated but were not found to be significantly related to this type of pretrial failure. These other variables included past petty misdemeanor convictions,

gender, marital status, number of children, education, presence of a telephone, type of government assistance, and if the individual reported a chemical dependency and/or treatment experience. Again, different formulations of the variables were estimated when it was possible. For example, categorizing education differently (i.e. = 1 if attended college; = 0 for all others) did not improve the estimates.

Since 249 more people were released but not interviewed, Table 5 shows the "best" equations estimated over all released individuals. We cannot estimate the effect of the Employment/Income modified Vera scale item in these equations. Those individuals mailed a "summons" or posting bail prior to first appearance were generally not interviewed. In comparing Table's 4 and 5, it is evident that no striking differences in the coefficient estimates or significance levels emerged.

The results from the first sample were comparable to those reported in Table 4 with three exceptions. Individuals who were allowed to voluntarily "turn themselves in" to authorities (Voluntary Surrender), were less likely to commit new offenses. Voluntary surrender was an option left to the discretion of the police and the county attorney. In the second sample, fewer people were given this option. We suspected that these individuals were instead mailed a summons. The second difference between the two samples concerned the variable representing current or past bench warrants (Bench Warrant). In the first sample, this variable was associated with a greater likelihood of committing new offenses. It was not significant in the second sample. Finally in contrast to the second sample, current offense categories (Property and Drug) were not associated with a higher likelihood of committing new offenses.

Prediction of Failure to Appear

Three equations estimating the probability of failing to appear in court are displayed in Table 6. The first equation, Model 1, estimates the effects of the modified Vera scale items. Only one of the nine items was statistically significant. Individuals who had current or past bench warrants (Bench Warrant) had a high probability of failing to appear in court. As was true in the prediction of new offenses, a variety of formulations for the remaining modified Vera scale items were estimated. None were important in explaining the likelihood of failing to appear. Model's 2 and 3 show the estimates when the variable Bench Warrant is included with past conviction history¹⁴ and categories of the instant offense. In Model 2 which excludes race, time in the metropolitan area (Time in Area) and an arrest for drug sale or possession (Current Offense: Drug) indicated a lower likelihood of failing to appear. When race is included, Time in Area is no longer significant.¹⁵

The latter two models in Table 6 are labeled the "best" models. For the second sample, the number and type of past convictions, gender, age, marital status, number of

children, education, presence of a telephone, type of government assistance, and if the individual reported a chemical dependency and/or treatment experience were unrelated to the likelihood of failing to appear. When it was possible, different formulations of the independent variables were estimated; no significant results emerged.

Estimating separate equations for the two types of pretrial failure led us to wonder how many individuals that failed were common to both equations (i.e. how many individuals committed new offenses and failed to appear in court). When we included new offenses as an independent variable in predicting the probability of failure to appear, it was significant. Thus, knowledge that an individual had committed a new offense increased the likelihood he/she would fail to appear in court. Failure to appear was also significant in explaining the probability of committing a new offense. When we closely examined the "order" or timing of failure for the 34 people who failed to appear and committed new offenses, the majority committed new offenses prior to the date of failing to appear in court. It seemed reasonable that, having committed a new offense, a person might be reluctant to appear in court on the previous charge. When we accounted for this "order" of failure in the logistic regressions, the variables were no longer significant in their respective equations.

In terms of the number of significant variables, we were more successful at predicting failure to appear in the first sample. Six variables were statistically significant. These variables included three modified Vera scale items (Voluntary Surrender, Bench Warrant, and Employment/Income), past felony and misdemeanor convictions, and age. One obvious rationale for the difference in findings across the samples, is that the population of persons booked into the jail actually changed. In looking at the characteristics of the two samples across all the independent variables, it was difficult to be completely satisfied with this explanation. The two samples did differ on the failure to appear rate (22% for the first sample versus 16% for the second sample); however, this difference is partially an anomaly related to summons cases. At the time of the first sample, the county attorney was not extensively issuing summons. If we compare the failure to appear rate of those interviewed and released in the first sample (i.e. 22%) with **all** those released in the second sample (21% in Figure 5), we see they are very similar. On the other hand, we did not find comparable results when we included the available significant variables from the first sample (prior felony convictions, prior misdemeanor convictions, and age) in the prediction of failure to appear for the sample of all released individuals. The findings were mixed; past misdemeanor convictions were significant in explaining the probability of failure to appear. Since this variable was correlated with the existence of current or past bench warrants, its true importance was questionable.

Overall Predictive Accuracy

Characteristics of each model, such as the sample size and percentage of those who failed (the base rate), are listed at the bottom of Tables 4, 5, and 6. Also shown is the **percentage of total variation (log-likelihood) explained**. This measure addresses how well each model "explains" the probability of new offenses or failure to appear. A model "explaining" a great deal of the variation would approach 100 percent on this measure.¹⁶ Three measures which directly address predictive accuracy include sensitivity, the false positive rate, and the percentage correctly classified. A model's **sensitivity** is the percentage of failures it correctly identifies. For example, the actual number of failures in Table 4, Model 3 is equal to 105 or 22.2% of the sample. Given the set of variables included in Model 3, 18 of the 105 failures (or 17.1%) were accurately identified. Alternatively, the **false positive rate** is the proportion of errors in the model's identification of failures; it is the percentage classified as failures who actually did not commit new offenses. The **percentage correctly classified** is the proportion of individuals who fail and who do not fail (i.e. succeed) that the model correctly identifies.¹⁷

In contrast to Model 1 estimating the effects of the modified Vera scale items, all remaining models in Tables 4 and 5 show higher percentages of variance explained and higher sensitivity rates. Although these latter models represented improvements in the ability to predict new offenses over current practices, it would be difficult to argue the improvements were dramatic. Further, the model with the highest explained variance and sensitivity rate includes race. Since race (for reasons previously discussed) would never be included on a new pretrial instrument, it could be argued only Model's 1 and 2 should be compared in terms of their overall predictability. This issue is placed in its proper perspective by Petersilia and Turner (1987) who provide an excellent discussion on how much race actually contributes to the ability to predict failure in comparison to "chance". Without race, Model 2 classified 78.5% of the individuals correctly, or 13.1% above what would be predicted by "chance". Model 3 with race, classified 79% of the individuals correctly, or a 13.6% improvement above "chance". Thus, although it appears the models with race are the most predictive overall due to their high explained variance and sensitivity rates, excluding race does not dramatically impact predictability compared to "chance".

A comparison of how well these models predict failure relative to research in other jurisdictions, shows the modest success researchers have had in predicting future criminal behavior.¹⁸ In their review of the literature, Gottfredson and Gottfredson (1986) note that in most studies the proportion of explained variation rarely exceeds 20%. In predicting new arrests for California probationers, Petersilia and Turner (1987) report R²'s in the range of 6 to 7%. Their models incorporating race and variables correlated with race classified 73% of the probationers accurately. This figure represented a 20% improvement

above "chance." These comments aside, it is generally acknowledged that statistically based models are superior to human judgements.¹⁹

Section Five: The New Scoring Instrument

From the outset of the research, public safety concerns were of greater importance than failure to appear rates. The variables which were significant in predicting new offense behavior became the catalyst for the discussions regarding a new pretrial instrument. This focus on new offenses as the sole criteria of pretrial failure was aided by two factors. First, many of the variables which were significant in the prediction of new offenses were also predictive of failure to appear (for the first sample). Second, funding for an expanded Pretrial Unit had recently been obtained from the county board. The Pretrial Unit, which would continue to be the responsibility of the Bureau of Community Corrections, grew from a staff of 3 to 23. With additional staff, the failure to appear rate could be directly addressed. Different methods of notifying individuals of their court dates would be implemented and then evaluated. If necessary, the decision to focus solely on new offenses could be re-examined.

The variables significant in the prediction of new offense behavior and their respective weights are shown in Attachment 4. The weights were derived by dividing each coefficient from Model 2 in Table 4 by a common number (.15) and rounding. This calculation was done simply because the resulting numbers were easier to use. While the existence of current or past bench warrants was not significant in the second sample, it was significant in the first sample. The weight on Bench Warrant, derived from its coefficient in the first sample, was a reflection of the lack of congruence across the samples. The variables and weights in Attachment 4 became the basis for extensive discussions. At issue was the replacement of most of the modified Vera scale items with new variables, the weights of those variables, and the "cutting scores"²⁰ to determine the boundaries of the no-bail required and conditional release recommendations.

The final scoring instrument which was adopted appears in Attachment 5. It is readily apparent by comparing Attachment 4 to Attachment 5, that the significant variables from the prediction are included in the new instrument; it is equally apparent a number of modifications were made. The remainder of this section will be divided into four parts. First, we will discuss the actors in the decision making process. Second, we will discuss the variables which were not significant in the prediction equations but were added to the new instrument. These variables include Current Minnesota Residence, Living Situation, Present Offense/Main Charge Not Requiring Judicial Review, Present Offense/Main Charge Requiring Judicial Review, and Weapon Used. The third part of this section will outline the alterations in the variable definitions and/or their weights. The impacted variables were Bench Warrants (now entitled Failure to Appear), and Prior Felony and Misdemeanor Convictions (now under the subheading of Prior Criminal Record). Finally, we will describe how cutoff scores for no-bail required and conditional release recommendations originated from a "field test" of the new instrument.

The Pretrial Release Advisory Committee

Due to the major expansion of the Pretrial Unit and the existence of research which suggested replacement of the modified Vera scale, the management of the Bureau of Community Corrections chose to form an advisory committee. In addition to various Bureau managers, the committee was composed of the Chief Judge, and representatives from the following offices: County Attorney, City Attorney, Public Defender, City Police, County Sheriff, and County Planning and Development. Community victim advocates were also represented. In addition to identifying the Pretrial Unit's impact on the various parts of the criminal justice system, its purpose was to advise Pretrial staff on important policy and procedural matters. Prior to the formation of the Committee, a variety of issues and concerns related to the research findings had surfaced in discussions both within the Bureau and with other relevant groups. Many of these same issues, plus some new ones, were raised in Advisory Committee meetings. For purposes of the discussions which follow, we will not be attributing each modification of the new pretrial instrument to any specific group or groups. We will, however, attempt to outline the reasoning underlying the modifications.

Variables Added to the Prediction Scale

In addition to the variables research found to be predictive of new offense behavior, five other items were placed on the new instrument. Variables such as length of time at current address, living situation, and time in the metropolitan area are commonly identified as "ties to the community". Despite evidence from previous recent studies in this and other jurisdictions,²¹ many found it difficult to accept that "community ties" were not related to pretrial failure. For example, citing experience with particular individuals, it was argued that persons with no permanent address often failed in the pretrial period. It was possible to examine the data concerning this point, since the record of an individual's address was part of the interview process. In looking at all interviewed individuals, we found approximately 9% of the cases had no permanent address. Roughly half of these individuals were never released; they were detained from first appearance through case disposition. The argument was then made that since detained individuals were not part of the prediction sample (i.e. by definition they could not fail), their exclusion could account for the lack of significance. As a consequence of these discussions, Current Minnesota Residence and Living Situation were added to the new instrument with low weights.

Three variables related to the current offense were added due to the expansion of the population to be interviewed and the granting of release authority for certain offenses from the Court. These variables were "Present Offense/Main Charge Not Requiring Judicial Review", "Present Offense/Main Charge Requiring Judicial Review", and "Weapon Used". Whereas in the past only individuals charged with a felony or gross misdemeanor were formally interviewed by the Pretrial staff, now individuals charged with a misdemeanor would be subject to the same process. The variable, "Present Offense/Main Charge Not Requiring Judicial Review", served to capture what was reflected in the legal statutes; felony and gross misdemeanors were by definition more serious than misdemeanors. The mission of the Pretrial Unit involved balancing public safety concerns against the limited capacity of the jail.

Included in the design of the new program was 24 hour per day staff coverage in the jail for interviews. Given its mission and the "round the clock" coverage, release authority for certain categories of offenses was sought and granted from the Court. While it was not necessary to have separate points for offenses subject to judicial review (or for offenses involving weapons since they could be included on the Judicial Review List), it was decided that higher weights on these offenses would serve to highlight to the Court the gravity of the offense. The individual's total score would "stand out" as a consequence of these added points. This decision was consistent with the modified Vera scale which deducted points for person and/or weapon offenses. Assigning points for offenses on the Judicial Review List and for offenses involving a weapon replaced the weights suggested by the research on current property and drug offenses.

Concern over those detained and their absence in the prediction equations also influenced this decision. In comparison to those released, it was clear from both samples that many detained individuals had points subtracted from their total modified Vera score for offenses against a person and/or those involving a weapon. While all actors wanted to release more individuals from the jail, the pretrial behavior of those detained was unknown. We used the data to examine how many of those detained would have been released under the new instrument without weights for the current offense and weapon. We calculated the new total score for those detained under various weighting schemes and cutoff options. Next we examined the offense(s) of those who would have been released. Only a small number of detained individuals were charged with offenses not on the Judicial Review List. While there was no guarantee this same result would occur in the future, it did provide some assurance about what might occur with the use of the new instrument.

Changes in Variable Definitions and Weights

Four alterations were made in either the definition of variables, their weights, or both. Concern was expressed over the high weight indicated by the prediction equation for the existence of current or past bench warrants. Consistent data were not available on the type or recency of the bench warrant(s) represented in this score. Older bench warrants were considered to be irrelevant in looking at current behavior. Bench warrants for traffic violations were considered to be less serious; thus, the definition for bench warrants was clarified to apply only to documented failure to appear bench warrants within the last three years.

Substantial alterations were made in the definitions and weights of prior misdemeanor and felony convictions. Skepticism was expressed regarding the research finding that multiple misdemeanor convictions would have a higher weight than felony convictions. Attachment 4 illustrates that, based on the prediction, two or more misdemeanors would result in points equal to 6. In contrast, any number of prior felony convictions would result in only 4 points. A number of possible explanations for this finding were discussed. In looking at the type of new offenses committed in the pretrial period (see Figures 6 and 7), the bulk of them were misdemeanors. It could be argued that the higher weight on prior misdemeanors is a function of what is being predicted at this point in time.

Since both samples were based on individuals charged with a felony or gross misdemeanor, interesting questions about crime specialization over time are raised. In examining the distributions of past felony convictions in Figure 11, it can be seen that two-thirds of those interviewed and released had no known prior felony convictions. In contrast, Figure 12 shows a less skewed distribution on prior known misdemeanor convictions. These distributions might suggest that individuals cross-over into felony and gross misdemeanor crimes more infrequently than staying within misdemeanor offenses. Unfortunately, since our samples were not historical and excluded misdemeanors, we could not look at this issue in any depth.²²

To further understand the difference in felony and misdemeanor weights resulting from the prediction, the Advisory Committee requested we remove certain misdemeanor offenses from both the definition of pretrial failure and prior conviction history. After extensive discussion, the consensus was reached that misdemeanor traffic offenses, except for those related to alcohol, should not be defined as failures or counted as part of prior misdemeanor conviction history. Redefining the variables in this way did not substantially impact the weights although reducing the number of failures does make the prediction task more difficult. A relatively infrequent event is now made rarer. Since some individuals had multiple new offenses in the pretrial period, removing misdemeanor traffic from failure reduced the number of individuals who failed by 22 (i.e. from 121 to 99). The final weights on prior felony and misdemeanor convictions were assigned by taking into consideration all of the above factors. Further, to be consistent with the high weight on current charges involving persons, (most offenses on the Judicial Review List involve persons) a distinction was made between prior person convictions and other convictions. Attachment 5 shows that each prior felony or gross misdemeanor person conviction has a weight of 9, each prior misdemeanor person conviction has a weight of 6, each additional non-person felony conviction has a weight of 3, and each non-person misdemeanor conviction has a weight of 1.

The "Field Test" of the New Instrument and Derivation of the Cutoff Scores

With the modified Vera scale an individual was either recommended for no-bail release or not. The recommendation for no-bail release was made in almost all instances where the individual had a minimum score of 5 and a verified address. With the expansion of the Pretrial Unit, it was now possible to have three options. An individual could receive a no-bail release recommendation, a conditional release recommendation, or a recommendation to hold for judicial review. Of the 23 officers in the new Pretrial Unit, 12 were assigned to conditional release. These officers were to provide various levels of supervision and monitoring which had not been possible in the past. Just as a score of 5 or above was used to "cut" or divide the individuals into two categories, the range of total scores from the new pretrial instrument were used to determine the no-bail required, conditional release, and hold for bail and judicial review categories. The "cutting scores" were arrived at by a combination of methods. First, the characteristics of the individual who would make a good no-bail release candidate were considered. This profile determined the "cut point" for the no-bail release recommendation. Next, the "cut point" for the conditional release recommendation was arrived at by setting a target percentage of individuals to be released at first appearance.

After extensive discussions, and taking into consideration the weights on all the items below the bolded line in Attachment 5, it was decided that a good candidate for no-bail release would have the following characteristics: He or she would have lived at their current Minnesota residence a minimum of three months (worth 0 points), would be employed a minimum of 20 hours per week or receive public assistance (worth 0 points), would be 22 or older at the date of booking (worth 0 points), would have no failure to appear bench warrants within the last three years (worth 0 points), would have no prior misdemeanor person or felony person convictions (worth 0 points), could have one or more prior misdemeanor or gross misdemeanor convictions (worth 1 point), could have one or more prior non-person felony convictions (worth 3 points), and the present offense/main charge could be a misdemeanor, gross misdemeanor, or felony not requiring judicial review (worth up to 3 points). The sum of these points totaled to 7. Allowing for the fact the person might live alone (worth 1 point) resulted in the no-bail release "cutting score" of 8. Thus, all individuals scoring between 0 and 8 were eligible for no-bail release.

The "cut point" for conditional release eligibility was determined by setting the target percentage of individuals to be released at first appearance. Following current practice, the Pretrial Unit was not going to interview individuals mailed a summons. In the second sample, if we ignore the summons cases, approximately 67% of all remaining individuals were released either at first appearance or at some later point in their case (Figure 1). Of these 67%, roughly half were released at first appearance. After considering these percentages, it was decided that the "cut point" would be that score where approximately 60% of all individuals booked into the jail would be released at first appearance. The percentage was designed to be high enough to impact the jail population. Individuals ultimately released could now be released sooner. It was also designed to be low enough to allow the Pretrial Unit to have some experience with the new instrument before considering the detained population as potential release candidates. Thus, the range of scores for conditional release eligibility went from 9 to 17.

At this point in the process the second sample was roughly two years old. In order to confirm the no-bail release profile and the target percentage, a "field test" was conducted by applying the new scale to individuals with a more recent first appearance. All individuals with a felony or gross misdemeanor first appearance between April 1, 1992 and June 30, 1992 were interviewed and scored on the modified Vera Scale and the new instrument. The results confirmed that individuals "fitting" the no-bail release profile did score between 0 and 8 on the new scale. Further, the goal of releasing approximately 60% of those booked at first appearance seemed obtainable given that 17 was the highest possible score for conditional release eligibility. The actual release percentages could vary from this target depending upon the outcome of those people who would score between 9 and 17 but have a current offense/main charge on the Judicial Review List. The weights for "Present Offense/Main Charge Requiring Judicial Review" and "Weapon Used" were set at 9 once the no-bail release upper bound of 8 was fixed.

The discussions outlined in this section took place over a period of eighteen weeks. At various points in this time period, serious thought was given to four approaches distinctly

different from the final scale which was adopted. These approaches included retaining the modified Vera scale, adding prior criminal history to the modified Vera scale (in effect moving towards the original form of the Vera scale), revisiting the guidelines approach with current offense severity and pretrial failure risk score defining the horizontal and vertical axes (private bail/bond remaining in effect), or deriving a new instrument based on the professional opinions of the Pretrial Release Advisory Committee. Alternative options were considered for at least four reasons. First, the limitations of the research have been discussed in Sections Four and Five. For example, it is difficult to predict pretrial failure when few individuals fail. Second, reservations were expressed at the idea of applying a risk scale based on samples of felons and gross misdemeanants to misdemeanants. The expansion of the Pretrial Unit now made it possible for misdemeanants to be interviewed and scored. This decision to expand the interview population was made in this eighteen week period, well after the basic research had concluded. Third, inertia was a powerful factor. Since the modified Vera scale had been in use for eighteen years, all parties were familiar with it. Finally, complete consensus within the Committee was never reached on whether the expanded Pretrial Unit should be the responsibility of the Bureau of Community Corrections. Obviously, the final instrument that was adopted (Attachment 5) represents a combination of research findings and professional and political judgements of judges, attorneys, public defenders, and criminal justice professionals who have competing as well as overlapping interests and pressures.

Section Six: Summary and Conclusions

This final section will highlight the main research findings, outline the beneficial aspects of the new scale from a practitioner's viewpoint, and discuss the beneficial aspects of the study from a research and policy perspective. One major purpose of the study was to determine the predictors of pretrial failure. Two separate measures of pretrial failure were defined. Commission of a new offense in the pretrial period represented one measure; failure to make a court appearance in the pretrial period constituted the second measure. In our samples of all released individuals (see Figures 4 and 5), the pretrial new offense rate was 20% and the pretrial failure to appear rate was 21%. New offenses committed in the pretrial period were predominantly petty misdemeanors or misdemeanors (217 out of 266 offenses, or 82%), although person offenses were represented at the misdemeanor level.

The probability of committing a new offense was significantly related to seven factors: past felony convictions, past misdemeanor convictions, past or current bench warrants, if the instant offense was drug-related, if the instant offense was property-related, if the individual was 21 years of age or less, and if the individual was unemployed and not receiving government assistance. The prediction of failure to appear in our second sample was hampered by the large number of individuals who were released, failed to appear, but were not interviewed (primarily "summons" cases). Although past criminal history was collected on these individuals, information on how they would have scored on the modified Vera scale was unknown. Based on our first sample, the probability of failure to appear

was significantly related to four factors: past or current bench warrants, past misdemeanor convictions, if the individual was not given the option of voluntary surrender, and if the individual was unemployed and not receiving government assistance. Two additional factors were "somewhat" significant in predicting the probability of failure to appear. These factors were past felony convictions and if the individual was 21 years of age or less.

A new pretrial instrument has been adopted and been in use since August, 1992 (see Attachment 5). In contrast to the modified Vera scale, the new instrument greatly minimizes the importance of variables related to community ties, such as time at current and/or past address, living with family or friends, and length of residence in the metropolitan area. Past criminal history variables, in the form of felony and misdemeanor convictions, have been added to the new instrument with significant weights. Past or current involvement with the criminal justice system, via bench warrants, has been re-defined and given greater emphasis. Plans are underway to study the relationship between the items on the new instrument and pretrial failure. In other words, the new instrument will be validated once a sufficient period of time has elapsed to have both operational experience with it and for pretrial failures to have occurred.

From a practitioner's viewpoint, the new instrument has six advantages. First, the range of total scores on the new instrument is much greater than was possible with the modified Vera scale. With the latter scale, total points ranged from a low of -12 to a high of +14. A higher score was associated with less risk of pretrial failure. The new instrument has a "best" possible score of 0 but can exceed 100, particularly if an individual has multiple prior person convictions. An individual with an extensive prior conviction record will be very visible to the Court. Second, only 5 possible points on the new scale are related to self-reported items. The self-reported items include "Current Minnesota Residence", "Living Situation", and "Employment/Income". Third, an individual with a prior person conviction but currently being interviewed on a minor offense, is eligible for release only with conditions. Since prior criminal record was not scored on the modified Vera scale, an individual fitting this profile could have been released previously with no-bail required. Fourth, the Judicial Review List provides a mechanism for shared responsibility. Individuals charged with a person offense can be eligible for conditional release; however, the Court reviews this recommendation and makes the final decision. Fifth, practitioners believe the new scale is more receptive to releasing individuals due to the lessened dependence on such variables as living situation, time at current/past address, and time in area. Finally, this lessened dependence on community ties has another advantage; Pretrial screeners believe it is more impartial to minorities.

Significant resources were devoted to the collection and analysis of two distinct data samples. The involvement of a broad array of actors in the criminal justice process was also substantial. From a combined research and policy perspective, a discussion of what Hennepin County gained from the study might be useful to other jurisdictions

contemplating such a project. It seems obvious that using an instrument validated on data from one's own jurisdiction would be superior to simply transferring an instrument from another jurisdiction (see for example, Wright et al., 1984)²³. However, given scarce resources and given the overall predictive accuracy of studies here (and elsewhere), a reasonable question clearly arises: Are the benefits of pretrial research worth the required resources? We feel the study was beneficial for at least five reasons beyond the obvious.

First, the research forces variables to be clearly defined. Pretrial failure must be defined in order to be predicted. The variables which are hypothesized to predict pretrial failure (i.e. past felony convictions versus past felony arrests) must also be defined. In the process of arriving at these definitions, concerns or priorities which may be unique to a jurisdiction surface. For example, some jurisdictions might give equal weight to both failure to appear and new offenses. Second, simple knowledge of pretrial failure to appear and new offense rates is critical for any discussions related to pretrial release. Even if jurisdictions are experiencing severe jail overcrowding, this knowledge can at least provide information on the level of risk being faced. Third, the application of research to actual decision making can improve the climate for further research. The interaction of researchers and criminal justice professionals which occurred in the course of our study stimulated new avenues of thought on both sides. Fourth, previously held assumptions or beliefs which often become "facts" simply because they are based on conducting business a certain way for many years, can be dispelled. Finally, knowledge of the relationship between pretrial release criteria, pretrial failure, and personal characteristics such as race made it possible to construct a more racially neutral scale. Variables from the modified Vera scale which were correlated with race, but not significant in the prediction of new offenses were absent from the new instrument.²⁴

Notes

- ¹ This item, entitled "Voluntary Surrender", is left to the discretion of the police or county attorney.
- ² Individuals mailed a summons who fail to appear at their first appearance are interviewed at their next court hearing. Of the 203 individuals mailed a summons, 70 failed to appear at their first appearance and 59 were subsequently interviewed. (In 11 cases the interview was not conducted because it was unclear if a summons had been sent). Even though interview data are available for these 59 individuals, they are considered a unique group and are analyzed as if the interview data were unknown.
- ³ The Minnesota Criminal Justice Information System (CJIS) allows access to 20 other states which have agreed to exchange criminal history information (NCIC-Interstate Identification Index (III)). The FBI is also part of the NCIC-Interstate Identification Index (III) and provides information on federal arrests and for arrests occurring in states which are not part of the III program.
- ⁴ Bench warrants which were stayed or quashed were not counted as failures.
- ⁵ In examining time to failure for those interviewed and released, 79% of those who failed did so within 90 days of their first appearance. The average case length was 126 days. The median was 90 days.
- ⁶ For example see Appendix G of Goldkamp, Gottfredson, and Mitchell-Herzfeld (1981).
- ⁷ Alternatively, linear regression could have been used. Although mathematically simpler and more intuitive, a number of authors (see Palmer and Carlson, 1976, Goldkamp et al., 1981, and Aldrich and Nelson, 1984) have noted that the use of multiple linear regression to predict events with only two outcomes violates several critical assumptions underlying regression. Violation of the assumptions can lead the researcher to misstate the effects of the independent variables (i.e. modified Vera scale items) on pretrial failure. Following Aldrich and Nelson (1984), the multivariate linear model can be represented by:

$$Y_i = b_1 + b_2 X_{i2} + b_3 X_{i3} + \dots + \mu_i$$

or

$$Y_i = \sum b_k X_{ik} + \mu_i$$

Where Y is the dependent variable such as a new offense in the pretrial period, the X_k 's are the independent variables, such as employment, and time at current address, etc., μ represents random error, the subscript i denotes the i^{th} observation from the sample size N , and b_k are the coefficients ("weights") to be estimated from the data.

In order for hypothesis testing to be valid, μ_i is assumed to be normally distributed. Thus for a given X_{ik} , μ_i can assume any one of a range of possible values. If, however, Y_i can only equal 0 or 1, then μ_i can only assume one of two values for a given X_{ik}

$$\mu_i = -\sum b_k X_{ik} \text{ if } Y_i = 0$$

or

$$\mu_i = 1 - \sum b_k X_{ik} \text{ if } Y_i = 1$$

To avoid violating this and other assumptions, we used logistic regression. The procedure (see Procedure Logistic Regression in Marija Norusis, (1990), SPSS Advanced Statistics User's Guide, Chicago: SPSS, Inc.) directly estimates the probability of new offenses or failure to appear in court by:

$$\text{Prob(event)} = \frac{e^z}{1+e^z}$$

or equivalently,

$$\text{Prob(event)} = \frac{1}{1+e^{-z}}$$

Where Z is the linear combination

$$Z = B_1 + B_2 X_2 + B_3 X_3 + \dots B_n X_n$$

and e is the base of natural logarithms

- ⁸ John Goldkamp, Michael Gottfredson, and Doris Weiland, (1990), "Pretrial Drug Testing and Defendant Risk," Journal of Criminal Law and Criminology, 81, p. 632.
- ⁹ IBID
- ¹⁰ Their correction for detention involved a two stage modeling approach. First "hazard rates" were constructed representing the odds of being omitted due to detention. Second, logistic regressions for rearrests and failure to appear were estimated conditional on the hazard rates.
- ¹¹ Blacks were significantly less likely than whites to be employed or be receiving government assistance. Although Attachment 1 shows that questions regarding an individual's financial resources appear on the interview sheet, this information is usually never recorded.
- ¹² These differing possible interpretations of race (and other predictors correlated with race) are discussed in more detail in Joan Petersilia and Susan Turner, (1987), "Guideline-based Justice: Prediction and Racial Minorities," in Prediction and Classification: Criminal Justice Decision Making, ed. Don Gottfredson and Michael Tonry. Chicago: University of Chicago Press, pp. 151-181.
- ¹³ Following the procedure outlined by Goldkamp (1987), we compared the "wrong" and "right" methods to correct for the effects of status variables such as race. In the former method, race was eliminated from the equations, and points or weights were assigned to each variable based on their coefficients. Individuals were scored based on these points and divided into three groups according to their probability of committing a new offense. The "right" method involved estimating the equation with race included and calculating the weights based on the coefficients except that all individuals were assigned the same weight for race. Again individuals were scored and classified into three groups according to their probability of committing a new offense. In our sample there was no clear advantage to the latter method. Race was not highly correlated with the other independent variables; hence its effect was not absorbed by them.
- ¹⁴ The bivariate correlations between Bench Warrant and Prior Misdemeanor and Felony Convictions were .432 and .301, respectively. Both correlations were statistically significant suggesting some of the effect of previous or current bench warrant(s) is related to past convictions.
- ¹⁵ The bivariate correlations between race and Time in Area were .122 and statistically significant. Time in Area was not correlated with failure to appear suggesting when race is excluded, its effect is reflected in Time in Area.
- ¹⁶ As Aldrich and Nelson (1984) point out, there is no statistic comparable to R² in logistic regression. We use their "pseudo R²" which is calculated as the goodness of fit chi-square / goodness of fit chi-square + N.
- ¹⁷ This format for discussing predictive accuracy was outlined in Stevens Clarke, Yuan-Huei Lin, and W. Wallace (1988), "Probationer Recidivism in North Carolina: Measurement and Classification of Risk," Institute of Government, University of North Carolina, Chapel Hill, North Carolina.

- 18 Schmidt and Witte (1990) argue that explanatory power can be improved by using different definitions of failure. (i.e. length of time from release to failure) Further, they provide an excellent outline of ethical and legal issues related to prediction.
- 19 "In virtually every decision-making situation for which the issue has been studied, it has been found that statistically developed prediction devices outperform human judgements...."see , Stephen Gottfredson, (1987), "Prediction: An Overview of Selected Methodological Issues," in Prediction and Classification: Criminal Justice Decision Making, ed. Don Gottfredson and Michael Tonry. Chicago: University of Chicago Press, p. 36.
- 20 The issue of predictive accuracy was revisited when the research-based instrument was reduced to categories by various "cutting scores." Alternative methods of evaluating predictive accuracy were examined; these methods included the "index of predictive efficiency" (see Goldkamp, Gottfredson, and Mitchell-Herzfeld, 1981), the "mean cost rating" (see Inciardi, Babst, and Koval, 1973), and the "relative improvement over chance" (see Loeber and Dishion, 1983).
- 21 See for example Gottfredson, 1974; Toborg, 1981; the review in Gottfredson and Gottfredson, 1986; Osterbaan, 1986; and Bennett and Ford, 1988.
- 22 Since the new scale has been applied to individuals charged with a misdemeanor, it may be possible in the future to analyze patterns of offense behavior over time. With our current data samples we do plan to examine the relationship between the type (i.e. person, property, etc.) and recency of past convictions and failure.
- 23 Although this study addressed the transferability of probation risk assessment instruments, the points made are also applicable to pretrial instruments.
- 24 Blacks received fewer positive points for Time in Area and Voluntary Surrender; Whites received more negative points for Chemical Abuse. None of these variables were significant in predicting the probability of new offenses.

REFERENCES

- Aldrich, John and Forrest Nelson, (1984), Linear Probability, Logit and Probit Models, Beverly Hills: Sage Publications.
- Bennett, David and Robin Ford, (1988), "Criminal Justice System Data," prepared for the Hennepin County Sheriff, Minneapolis, Minnesota through coordination of the National Institute of Corrections.
- Clarke, Stevens, Yuan-Huei Lin, and W. Wallace, (1988), "Probationer Recidivism in North Carolina: Measurement and Classification of Risk," Institute of Government, University of North Carolina, Chapel Hill, North Carolina.
- Goldkamp, John, (1987), "Prediction in Criminal Justice Policy Development," in Prediction and Classification: Criminal Justice Decision Making, ed. Don Gottfredson and Michael Tonry. Chicago: University of Chicago Press.
- Goldkamp, John, Michael Gottfredson, and Susan Mitchell-Herzfeld, (1981), Bail Decision Making: A Study of Policy Guidelines, Washington, D.C.: National Institute of Corrections.
- Goldkamp, John and Michael Gottfredson, (1985), Policy Guidelines for Bail: An Experiment in Court Reform, Philadelphia: Temple University Press.
- Goldkamp, John and Michael Gottfredson, (1988), Bail and Pretrial Release Guidelines in Three Urban Courts: Volume I -The Development of Bail/Pretrial Release Guidelines in Maricopa County Superior Court, Dade County Circuit Court and Boston Municipal Court.
- Goldkamp, John, Michael Gottfredson, and Doris Weiland, (1990), "Pretrial Drug Testing and Defendant Risk," Journal of Criminal Law and Criminology, 81, 585-652.
- Gottfredson, Michael, (1974), "An Empirical Analysis of Pretrial Release Decisions," Journal of Criminal Justice, 2, 287-304.
- Gottfredson, Stephen, (1987), "Prediction: An Overview of Selected Methodological Issues," in Prediction and Classification: Criminal Justice Decision Making, ed. Don Gottfredson and Michael Tonry. Chicago: University of Chicago Press.
- Gottfredson, Stephen and Don Gottfredson, (1986), "Accuracy of Prediction Models," in Criminal Careers and "Career Criminals", Volume II, ed. Alfred Blumstein, Jacqueline Cohen, Jeffrey Roth, and Christy Visser, Washington, D.C.: National Academy Press
- Inciardi, James, Dean Babst, and Mary Koval, (1973), "Computing Mean Cost Ratings (MCR)," Journal of Research in Crime and Delinquency, 10, 22-28.

Loeber, Rolf, and Thomas Dishion, (1983), "Early Predictors of Male Delinquency: A Review," Psychological Bulletin, 94, 68-99.

Norusis, Marija, (1990), SPSS Advanced Statistics User's Guide, Chicago: SPSS, Inc.

Osterbaan, Constance, (1986), "Pretrial Release Study" prepared for Hennepin County Bureau of Community Corrections, Planning and Evaluation, Minneapolis, Minnesota.

Palmer, Jan and Paul Carlson, (1976), "Problems With the Use of Regression Analysis in Prediction Studies," Journal of Research in Crime and Delinquency, 13, 64-81.

Petersilia, Joan and Susan Turner, (1987), "Guideline-based Justice: Prediction and Racial Minorities," in Prediction and Classification: Criminal Justice Decision Making, ed. Don Gottfredson and Michael Tonry. Chicago: University of Chicago Press.

Rhodes, William, (1985), "The Adequacy of Statistically Derived Prediction Instruments in the Face of Sample Selectivity: Criminal Justice as an Example," Evaluation Review, 9, 369-382.

Rhodes, William and Shelley Matsuba, (1984), "Pretrial Release in Federal Courts: A Structural Model with Selectivity and Qualitative Dependent Variables," Evaluation Review, 8, 692-704.

Schmidt, Peter and Ann Witte, (1990), "Some Thoughts on How and Why to Predict in Criminal Justice Settings," in New Directions in the Study of Law, Justice, and Social Control, ed. Melvin Lerner, New York: Plenum Press.

Smith, Douglas, Eric Wish, and G. Roger Jarjoura, (1989), "Drug Use and Pretrial Misconduct in New York City," Journal of Quantitative Criminology, 5, 101-126.

Toborg, Mary, (1981), Pretrial Release: A National Evaluation of Practices and Outcomes, Washington, D.C.: National Institute of Justice.

Toborg, Mary, John Bellassai, Anthony Yezer, and Robert Trost, (1989), Assessment of Pretrial Urine Testing in the District of Columbia: Issues and Practices Series. Washington D.C.: National Institute of Justice.

Visher, Christy, (1990), "Using Drug Testing to Identify High-Risk Defendants on Release: A Study in the District of Columbia," Journal of Criminal Justice, 18, 321-332.

Visher, Christy and Richard Linster, (1990), "A Survival Model of Pretrial Failure," Journal of Quantitative Criminology, 6, 153-184.

Wright, Kevin, Todd Clear, and Paul Dickson, (1984), "Universal Applicability of Probation Risk-Assessment Instruments," Criminology, 22, 113-134.

Appendix: Attachments, Tables, and Figures

Attachment 1
HENNEPIN COUNTY COURT SERVICES
Pretrial Services Information

Name	Birthdate	Age	Race	Sex	Education (highest grade)
------	-----------	-----	------	-----	---------------------------

Address (present residence)	Phone
-----------------------------	-------

Time At Present Address	Living With	Marital Status
		S M D Sep. W

Prior Address	How Long	Time in Metro area
---------------	----------	--------------------

Spouse's Name	Address	Phone
---------------	---------	-------

If Less Than 5 Years in Metro area, Previous Address

Children (ages)

Present Employer	Occupation	How Long	Salary
------------------	------------	----------	--------

Previous Employment	How Long
---------------------	----------

Spouse's Employment	Occupation	How Long	Salary
---------------------	------------	----------	--------

Other Income	Amount
<input type="checkbox"/> Social Security <input type="checkbox"/> Welfare <input type="checkbox"/> Unemployment <input type="checkbox"/> Pension <input type="checkbox"/> Other	

Financial Resources	Loans (amount)	Cash or Savings
<input type="checkbox"/> Own Home <input type="checkbox"/> Own Car Type _____		

Parents' Name	Address	Phone
---------------	---------	-------

Emergency Contact	Relationship	Phone
-------------------	--------------	-------

Military Service	Branch	Type of Discharge
------------------	--------	-------------------

Physical Disabilities	Medication Needed
-----------------------	-------------------

Recent Hospitalizations

Psychiatric Treatment	When	Where	Diagnosis
-----------------------	------	-------	-----------

Chemical Dependency	Treatment (when and where)
<input type="checkbox"/> Drugs <input type="checkbox"/> Alcohol	

Prior Record	Hennepin County	Out of Hennepin county (what, where)
<input type="checkbox"/> Juvenile <input type="checkbox"/> Felony <input type="checkbox"/> Misdemeanor		

On Probation	Parole	Agent	Phone #
--------------	--------	-------	---------

Voluntary Surrender	Offense
<input type="checkbox"/> yes <input type="checkbox"/> no	

Comments:

Age	Date	PO
-----	------	----

NBR yes no Public Defender yes no

Attachment 2
BAIL EVALUATION CRITERIA

NAME: _____ DATE: _____
 ADDRESS: _____ PHONE: _____
 CHARGE: _____ RECOMMENDATION: _____

POINTS	RESIDENCE
3	Present residence for one year or more...or own dwelling
2	Present residence 6+ months to one year...or present residence 1+ less than 6 months but at prior residence one year plus
1	Present residence 3 months and up to 6 months ...or present residence but at prior residence at least 6 months.
<u>FAMILY TIES</u>	
3	Live with immediate family (spouse, children, parents).
2	Live with close relatives (siblings)
1	Live with non-family person (girlfriend, roommate, split-residence).
0	Lives alone
<u>TIME IN AREA</u>	
1	Five years or more in 7 county area (exclusive of military, reservation, schooling or incarceration)
<u>EMPLOYMENT</u>	
3	Present job...1 year or more
2	Present job...6 months to one year
1	Present job...less than 6 months
1	Full time student
1	Part time work equals 20 hours or more per week
1	Welfare, unemployment compenstion, social security, V.A. Benefits
0	Day labor
<u>OTHER CONCERNS</u>	
2	Voluntary surrender
-2	Chemical abuse
-2	Bench Warrant of record (regardless of number or whether for traffic, misdemeanors or felonies)
-2	Escape (regardless of number)
<u>CURRENT OFFENSE</u>	
-3	Crimes against a person (do not aggregate points for multiple victims or incidents against the same person. This includes arson, terroristic threats, and burglary I)
-3	Weapons used in the commission of the crime...also included are felon in possession of a weapon, violation of the weapons ordinance.

30
 hours
 per week

SENTENCING WORKSHEET

SJIS COMPLAINT #	
Dist. Ct. Case #	County Name

Modified Worksheet

Offender Name (Last, First, Middle)	Date of Birth / /	Gender <input type="checkbox"/> Male <input type="checkbox"/> Female	PSI Investigator (Last, First, Middle)
Race/Ethnicity 1 <input type="checkbox"/> White 2 <input type="checkbox"/> Black 3 <input type="checkbox"/> Am. Indian 4 <input type="checkbox"/> Hispanic 5 <input type="checkbox"/> Asian 6 <input type="checkbox"/> Other		Date of Worksheet / /	Date of Conv./Plea / /

This offense to be sentenced: 1 <input type="checkbox"/> Alone	2 <input type="checkbox"/> with other felony offenses, same SJIS #	3 <input type="checkbox"/> with other felony offenses, different SJIS #	Sentencing Order Number
Offense Title (property value/drug type/drug amount)	Minnesota Statute	Date of Offense / /	SEVERITY LEVEL
Conviction Offense Modifiers 1 <input type="checkbox"/> Attempt 609.17 cited 2 <input type="checkbox"/> Conspiracy 609.175 cited	1 <input type="checkbox"/> Determined that firearm used 2 <input type="checkbox"/> Firearm possessed 3 <input type="checkbox"/> Other dangerous weapon used	1 <input type="checkbox"/> Second or Subsequent Weapon Offense	

Criminal history supplement attached to report additional prior offenses.

Was offender under custody supervision at time of current offense? 0 <input type="checkbox"/> No 1 <input type="checkbox"/> Yes	If yes, type of supervision. 1 <input type="checkbox"/> Probation 2 <input type="checkbox"/> Parole or Supervised Release	3 <input type="checkbox"/> Confined 4 <input type="checkbox"/> Released 5 <input type="checkbox"/> Pending Sentence	6 <input type="checkbox"/> Escape 7 <input type="checkbox"/> Other	Cust. Stat. Point
JUVENILE OFFENSES		OFFENSE TITLE		Disp. Date
<input type="checkbox"/> Offender 21 or older when current offense committed	01			/
	02			/
	03			/
	04			/
PRIOR MISDEMEANOR AND GROSS MISDEMEANOR SENTENCES		UNITS		
Where there are multiple current convictions, only list offenses not previously reported for this set of convictions				/
				/
				/
				/
PRIOR FELONY SENTENCES AND STAYS		WEIGHT		
When there are multiple current convictions, only list offenses not previously reported for this set of convictions			.	/
			.	/ .
			.	/
			.	/
			.	/
			.	/
Total Criminal History Points				

Minnesota Sentencing Guidelines Commission
Meridian National Bank Building
205 Aurora Ave., Suite 205
St. Paul, Minnesota 55103
(612) 296-0144

Sum of weights from previous worksheets: ("0" if first/only worksheet)

Presumptive Guidelines Sentence

1 Stay 2 Commit to Commissioner

Length of Presumptive Sentence

--	--	--

Months

Total Sum of Felony Weights (including supplements)

--

Attachment 4
Variables and Weights Derived from Logit Models
of Probability of Committing a New Offense

<u>Variables</u>	<u>Weights</u>
Employment/Income	-3
Bench Warrant 1 or more	6
Prior Felony Convictions 1 or more	4
Prior Misdemeanor Convictions 1	3
2 or more	6
Current Offense: Property	4
Current Offense: Drug	5
Age 21 or Less at Interview	3

Attachment 5
Hennepin County Pretrial Services Point Scale

Name: _____ Date of Birth: ____/____/____
Last First Middle Name

Address: _____

Charge: _____
(If more than one use most serious as defined by Sentencing Guidelines Commission)

Public Defender: _____ Eligible _____ Ineligible

I. Present Offense/Main Charge Requiring Judicial Review

- _____ A. See reverse side for list of offenses +9
 - _____ B. Weapon used +9
- (Pursuant to Minnesota Statute 609.11, Subd. 4 and 5)

II. Present Offense/Main Charge Not Requiring Judicial Review

- _____ Other felony offense not on judicial review list +3
- _____ Gross/misdemeanor/traffic offense 0

III. Current Minnesota Residence

- _____ Three months or less +1
- _____ Over three months 0

IV. Living Situation

- _____ Living alone +1
- _____ Living with relatives or any other unrelated person 0

V. Employment/Income

- _____ Employed less than 20 hours per week
- _____ Unemployed or not a student
- _____ Not receiving public assistance/other entitlements +3
- _____ Employed 20 hours or more per week
- _____ Full time student
- _____ Receiving public assistance/other entitlements 0

VI. Age (as of date of booking)

- _____ Age 21 or under +3
- _____ Age 22 or over 0

VII. Failure to Appear (including present offense)

- _____ Failure to appear within last three years +6
(documented by bench warrant(s))
- _____ No prior failure to appear 0

VIII. Prior Criminal Record

- _____ A. Felony/gross misd. person convictions
(violent, assaultive, C.S.C.) 9 points each
- _____ B. Misdemeanor person convictions 6 points each
- _____ C. 1 or more other felony convictions +3
- _____ D. 1 or more other gross/misd. convictions
(excluding other non-alcohol related traffic) +1
- _____ E. No prior convictions 0

Recommendation:

- NBR (0-8) _____
- CR (9-17) _____
- Review Required-Score (18 or above) _____
- Review Required-List _____
- Holds _____
- Detainer _____

Verified: _____ Yes _____ No Total Score: _____

Comments/Rationale: _____

Probation Officer Override: _____ Yes _____ No

Probation Officer's Signature: _____ Date: _____

LIST OF OFFENSES REQUIRING JUDICIAL REVIEW FOR PRE-TRIAL RELEASE

SENTENCES

609.11 Minimum Terms of Imprisonment

HOMICIDE

609.185 Murder in the 1st Degree
609.19 Murder in the 2nd Degree
609.195 Murder in the 3rd Degree
609.20 Manslaughter in the 1st Degree
609.205 Manslaughter in the 2nd Degree
609.21 Criminal Vehicular Operation

CRIMES AGAINST THE PERSON

609.221 Assault in the 1st Degree
609.222 Assault in the 2nd Degree
609.223 Assault in the 3rd Degree
609.223 1 Assault in the 4th Degree
609.224 Assault in the 5th Degree (Domestic Assault)
609.245 Aggravated Robbery
609.24 Simple Robbery
609.25 Kidnapping
609.251 Double Jeopardy, Kidnapping
609.255 False Imprisonment
518B.01 Subd 14 Violation of Orders for Protection

CRIMES AGAINST UNBORN CHILDREN

609.2661 Murder of Unborn Child in the 1st Degree
609.2662 Murder of Unborn Child in the 2nd Degree
609.2663 Murder of Unborn Child in the 3rd Degree
609.2664 Manslaughter of an Unborn Child in the 1st Degree
609.2665 Manslaughter of an Unborn Child in the 2nd Degree
609.267 Assault of an Unborn Child in the 1st Degree
609.2671 Assault of an Unborn Child in the 2nd Degree
609.2672 Assault of an Unborn Child in the 3rd Degree

SEX CRIMES

609.322 Solicitation, Inducement & Promotion of Prostitution
609.323 Receiving Profit Derived from Prostitution
609.342 Criminal Sexual Conduct in the 1st Degree
609.343 Criminal Sexual Conduct in the 2nd Degree
609.344 Criminal Sexual Conduct in the 3rd Degree
609.345 Criminal Sexual Conduct in the 4th Degree
609.352 Solicitation of Children to Engage in Sexual Conduct

CRIMES AGAINST THE ADMINISTRATION OF JUSTICE

609.485 Escape From Justice
Fugitive From Justice

DAMAGE TO PROPERTY

609.561 Arson in the 1st Degree
609.562 Arson in the 2nd Degree
609.582 Subd 1 & 2 Burglary in the 1st & 2nd Degree

CRIMES AGAINST PUBLIC SAFETY & HEALTH

609.66 Dangerous Weapons
609.67 Machine Guns and Short Barreled Shotguns
609.713 Terroristic Threats
152.021 Controlled Substance Crime in the 1st Degree
152.022 Controlled Substance Crime in the 2nd Degree
152.023 Controlled Substance Crime in the 3rd Degree

Table 1
**Definitions of Independent and Dependent Variables
 Analyzed in the Prediction of Pretrial Failure**

Independent Variables: Modified Vera Scale Items

Residence	= 1 If present residence \geq 3 months or past residence \geq 6 months = 0 Otherwise
Family Ties	= 1 If lives with family or others = 0 If lives alone
Time in Area	= 1 If resident of seven county metropolitan area for \geq 5 years = 0 Otherwise
Employment/Income	= 1 If employed at least 20 hours per week, student, or receives government benefits = 0 Otherwise
Voluntary Surrender	= 1 If individual "allowed to turn himself/herself in" the morning of the first appearance (discretion of police and county attorney) = 0 Otherwise
Chemical Abuse	= 1 If individual reported having a dependency, at anytime, on drugs and/or alcohol = 0 Otherwise
Bench Warrant(s)	= 1 If any current or past bench warrants (felony, misdemeanor, or traffic) = 0 Otherwise
Current Offense: Person	= 1 If offense is murder, manslaughter, assault, robbery, kidnapping, criminal sexual conduct, terroristic threats, burglary occupied dwelling, malicious punishment of a child = 0 Otherwise
Current Offense: Weapon	= 1 If used in commission of crime; felon in possession of weapon = 0 Otherwise

Independent Variables: Prior Criminal History

Past Felony Convictions	= 1 If individual has 1 or more prior felony convictions = 0 Otherwise
Past Misdemeanor Convictions	= 1 If individual has 1 prior misdemeanor/gross misdemeanor conviction = 2 If individual has 2 or more prior misdemeanor/gross misdemeanor convictions = 0 Otherwise
Past Petty Misdemeanor Convictions	= 1 If individual has 1 or more prior petty misdemeanor convictions (parking/traffic violations) = 0 Otherwise

Table 1
Definitions of Independent and Dependent Variables
Analyzed in the Prediction of Pretrial Failure
(Continued)

Phone	= 1 If has telephone = 0 Otherwise
Ever Chemically Dependent/Treatment	= 1 If individual ever chemically dependent (drugs and/or alcohol) or denied dependency but attended a treatment program = 0 Otherwise
Government Assistance	= 1 If individual receives AFDC, Food Stamps, Social Security, Unemployment Benefits, General Assistance, or a Pension = 0 Otherwise

Dependent Variables:

Pretrial Arrest	= 1 If date new offense (misdemeanor, gross misdemeanor, felony) committed is between first appearance date and disposition date on current case = 0 Otherwise
Pretrial Failure to Appear	= 1 If failed to appear at first appearance or any court hearing thereafter = 0 Otherwise

Table 2
Characteristics of the Pretrial Sample
By Interview and Release Status

Variables		Interviewed and Released		Not Interviewed ¹ and Released	Detained throughout Case	
		N	%		N	%
Residence:	0	130	24.9	---	88	34.2
	1	<u>393</u>	<u>75.1</u>		<u>169</u>	<u>65.8</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Living Situation:	0	113	21.6	---	78	30.4
	1	<u>410</u>	<u>78.4</u>		<u>179</u>	<u>69.6</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Time in Area:	0	143	27.3	---	100	38.9
	1	<u>380</u>	<u>72.7</u>		<u>157</u>	<u>61.1</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Employment/Income:	0	218	41.7	---	145	56.4
	1	<u>305</u>	<u>58.3</u>		<u>112</u>	<u>43.6</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Voluntary Surrender:	0	457	87.4	---	255	99.2
	1	<u>66</u>	<u>12.6</u>		<u>2</u>	<u>.8</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Chemical Abuse:	0	431	82.4	---	192	74.7
	1	<u>92</u>	<u>17.6</u>		<u>65</u>	<u>25.3</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Bench Warrant(s):	0	329	62.9	---	122	47.5
	1	<u>194</u>	<u>37.1</u>		<u>135</u>	<u>52.5</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	
Escape:	0	515	98.5	---	251	97.7
	1	<u>8</u>	<u>1.5</u>		<u>6</u>	<u>2.3</u>
		523	100.0		257	100.0
		<i>Missing = 6</i>			<i>Missing = 23</i>	

Table 2
Characteristics of the Pretrial Sample
By Interview and Release Status
(Continued)

Variables		Interviewed and Released		Not Interviewed and Released ¹		Detained throughout Case	
		N	%	N	%	N	%
Current Offense: Person	0	403	77.1	---	---	120	46.7
	1	<u>120</u>	<u>22.9</u>			<u>137</u>	<u>53.3</u>
		523	100.0			257	100.0
		<i>Missing = 6</i>				<i>Missing = 23</i>	
Current Offense: Weapon	0	465	88.9	---	---	200	77.8
	1	<u>58</u>	<u>11.1</u>			<u>57</u>	<u>22.2</u>
		523	100.0			257	100.0
		<i>Missing = 6</i>				<i>Missing = 23</i>	
Past Felony Convictions:	0	345	65.2	201	80.7	103	36.8
	1 or more	<u>184</u>	<u>34.8</u>	<u>48</u>	<u>19.3</u>	<u>177</u>	<u>63.2</u>
		529	100.0	249	100.0	280	100.0
Past Misdemeanor Convictions:	0	266	50.3	147	59.0	121	43.2
	1	100	18.9	46	18.5	62	22.1
	2 or more	<u>163</u>	<u>30.8</u>	<u>56</u>	<u>22.5</u>	<u>97</u>	<u>34.6</u>
		529	100.0	249	100.0	280	100.0
Past Petty Misdemeanor Convictions:	0	394	74.5	217	87.1	220	78.6
	1 or more	<u>135</u>	<u>25.5</u>	<u>32</u>	<u>12.9</u>	<u>60</u>	<u>21.4</u>
		529	100.0	249	100.0	280	100.0
Currently Probation/Parole:	No	454	85.8	---	---	176	62.9
	Yes	<u>75</u>	<u>14.2</u>			<u>104</u>	<u>37.1</u>
		529	100.0			280	100.0
Current Offense: Person	No	428	80.9	234	94.0	149	53.2
	Yes	<u>101</u>	<u>19.1</u>	<u>15</u>	<u>6.0</u>	<u>131</u>	<u>46.8</u>
		529	100.0	249	100.0	280	100.0
Current Offense: Property	No	343	64.8	121	48.6	203	72.5
	Yes	<u>186</u>	<u>35.2</u>	<u>128</u>	<u>51.4</u>	<u>77</u>	<u>27.5</u>
		529	100.0	249	100.0	280	100.0
Current Offense: Drug	No	385	72.8	213	85.5	249	88.9
	Yes	<u>144</u>	<u>27.2</u>	<u>36</u>	<u>14.5</u>	<u>31</u>	<u>11.1</u>
		529	100.0	249	100.0	280	100.0

Table 2
Characteristics of the Pretrial Sample
By Interview and Release Status
(Continued)

Variables		Interviewed and Released		Not Interviewed ¹ and Released		Detained throughout Case	
		N	%	N	%	N	%
Current Offense: Other	No	431	81.5	179	71.9	236	84.3
	Yes	<u>98²</u>	<u>18.5</u>	<u>70³</u>	<u>28.1</u>	<u>44⁴</u>	<u>15.7</u>
		529	100.0	249	100.0	280	100.0
Race:	Asian	4	.7	1	.4	---	---
	Black	240	45.4	69	27.8	164	58.6
	Hispanic	13	2.5	7	2.8	12	4.3
	Native American	28	5.3	4	1.6	16	5.7
	White	<u>244</u>	<u>46.1</u>	<u>167</u>	<u>67.4</u>	<u>88</u>	<u>31.4</u>
	529	100.0	248	100.0	280	100.0	
				<i>Missing = 1</i>			
Gender:	Male	442	83.6	178	71.5	264	94.3
	Female	<u>87</u>	<u>16.4</u>	<u>71</u>	<u>28.5</u>	<u>16</u>	<u>5.7</u>
		529	100.0	249	100.0	280	100.0
Marital Status:	Ever Married	174	33.8	---	---	71	26.9
	Single	<u>341</u>	<u>66.2</u>			<u>193</u>	<u>73.1</u>
		515	100.0			264	100.0
		<i>Missing = 14</i>				<i>Missing = 16</i>	
Children:	0	255	48.2	---	---	158	56.4
	1 or more	<u>274</u>	<u>51.8</u>			<u>122</u>	<u>43.6</u>
		529	100.0			280	100.0
Education: ⁵	Less than Grade 12	177	38.2	---	---	104	44.8
	Grade 12 or Higher	<u>286</u>	<u>61.8</u>			<u>128</u>	<u>55.2</u>
		463	100.0			232	100.0
		<i>Missing = 66</i>				<i>Missing = 48</i>	
Age at Evaluation:	22 or Older	395	74.7	181	72.7	217	77.8
	21 or Less	<u>134</u>	<u>25.3</u>	<u>68</u>	<u>27.3</u>	<u>62</u>	<u>22.2</u>
		529	100.0	249	100.0	279	100.0
					<i>Missing = 1</i>		
Phone:	No	155	29.3	---	---	122	43.6
	Yes	<u>374</u>	<u>70.7</u>			<u>158</u>	<u>56.4</u>
		529	100.0			280	100.0

Table 2
Characteristics of the Pretrial Sample
By Interview and Release Status
(Continued)

Variables	Interviewed and Released		Not Interviewed ¹ and Released		Detained throughout Case	
	N	%	N	%	N	%
Ever No	329	63.1	---		123	46.1
CD/Treatment: Yes	<u>192</u>	<u>36.9</u>			<u>144</u>	<u>53.9</u>
	521	100.0			267	100.0
	<i>Missing = 8</i>				<i>Missing = 13</i>	
Government No	399	75.4	---		213	76.1
Assistance: Yes	<u>130</u>	<u>24.6</u>			<u>67</u>	<u>23.9</u>
	529	100.0			280	100.0
Pretrial Arrest: 0	408	77.1	211	84.7	---	---
1 or more	<u>121</u>	<u>22.9</u>	<u>38</u>	<u>15.3</u>		
	529	100.0	249	100.0		
Pretrial Failure 0	441	83.4	174	69.9	---	---
to Appear: 1 or more	<u>88</u>	<u>16.6</u>	<u>75</u>	<u>30.1</u>		
	529	100.0	249	100.0		

¹ Since these individuals were not interviewed, available data is limited to past conviction history, race, sex, age, current charge, and pretrial failure.

² 44 of "Other" are Gross Misdemeanor: DWI

³ 13 of "Other" are Gross Misdemeanor: DWI

⁴ 16 of "Other" are Gross Misdemeanor: DWI

⁵ See exact definition in Table 1

Table 3
New Offenses and Failure to Appear (FTA)
By Type of Release and Mean Modified Vera Scale Score
Individuals Interviewed And Released

	<u>No New Offenses</u>		<u>One or More New Offenses</u>		<u>Mean Modified Vera Scale Score</u>
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	
<u>First Appearance Releases*</u>					
NBR	98	85.2	17	14.8	5.7
CR (no bail)	56	67.5	27	32.5	3.4
CR (with bail)/Bail	125	78.1	35	21.9	3.0
<u>Releases After First Appearance</u>					
NBR	31	81.6	7	18.4	1.7
CR (no bail)	50	68.5	23	31.5	1.1
CR (with bail)/Bail	40	80.0	10	20.0	2.4
	<u>Appeared at All Hearings</u>		<u>One or More FTA's</u>		<u>Mean Modified Vera Scale Score</u>
	<u>N</u>	<u>%</u>	<u>N</u>	<u>%</u>	
<u>First Appearance Releases*</u>					
NBR	100	87.0	15	13.0	5.7
CR (no bail)	66	79.5	17	20.5	3.4
CR (with bail)/Bail	148	92.5	12	7.5	3.0
<u>Releases After First Appearance</u>					
NBR	29	76.3	9	23.7	1.7
CR (no bail)	51	69.9	22	30.1	1.1
CR (with bail)/Bail	40	80.0	10	20.0	2.4

*Missing cases = 7; 3 offenders failed to appear at first appearance and were then detained.

Table 4
Logit Models of Probability of Committing a New Offense
Individuals Interviewed and Released

Independent Variables	Model 1 Vera Scale Items	Model 2 "Best Model" excluding Race	Model 3 "Best Model" including Race
Residence	.028		
Living Situation	.284		
Time in Area	-.019		
Employment/Income	-.581 **	-.484 **	-.382 *
Voluntary Surrender	-.488		
Chemical Abuse	.089		
Bench Warrant	.489 **		
Escape ¹	-	-	-
Current Offense: Person	-.073		
Current Offense: Weapon	-.177		
Prior Felony Convictions (1 or more)		.567 **	.504 **
Prior Misdemeanor Convictions (1, 2 or more)		.521 **	.519 **
Current Offense: Person ²		.188	.205
Current Offense: Property ²		.690 **	.665 *
Current Offense: Drug ²		.779 **	.624
Age 21 or less at Interview ³		.505 **	.504 *
Race (1 = White, 0 = Black)		-	-1.13 **
Constant	-1.31	-2.35	-1.82
Model Characteristics			
Sample Size (N)	516	516	472
Base Rate (% rearrests in sample)	22.1	22.1	22.2
Percentage of total variation (log-likelihood) explained	.04%	5.41%	8.35%
False Positive Rate	0	33%	40%
Sensitivity	0	5.3%	17.1%
Percentage Correctly Classified	77.9	78.5%	79.0%

* Significant at the .10 level

** Significant at the .05 level

¹ Only 8 individuals (1.6% of the sample) received points for escape; this variable was dropped from the analysis

² Compared to "Other" offenses (i.e. Gross DWI, Gross Prostitution, Possession Weapon without Permit, Fraud in Obtaining Credit, etc.)

³ Compared to 22 or older

Table 5
Logit Models of Probability of Committing a New Offense
Individuals Who Posted Bail, Received a Summons,
or Were Interviewed and Released¹

Independent Variables	Model 1 "Best Model" excluding Race	Model 2 "Best Model" including Race
Residence	NA	NA
Living Situation	NA	NA
Time in Area	NA	NA
Employment/Income	NA	NA
Voluntary Surrender	NA	NA
Chemical Abuse	NA	NA
Bench Warrant	NA	NA
Escape	NA	NA
Current Offense: Person	NA	NA
Current Offense: Weapon	NA	NA
Prior Felony Convictions (1 or more)	.658 **	.660 **
Prior Misdemeanor Convictions (1, 2 or more)	.542 **	.500 **
Current Offense: Person ²	.262	.332
Current Offense: Property ²	.711 **	.712 **
Current Offense: Drug ²	.883 **	.794 **
Age 21 or less at Interview ³	.577 **	.611 **
Race (1 = White, 0 = Black)	-	-.881 **
Constant	-2.83	-2.33
Model Characteristics		
Sample Size (N)	771	713
Base Rate (% rearrests in sample)	19.7	19.8
Percentage of total variation (log-likelihood) explained	6.0%	8.0%
False Positive Rate	33%	49%
Sensitivity	2.6%	14.2%
Percentage Correctly Classified	80.5%	80.4%

* Significant at the .10 level

** Significant at the .05 level

¹ These models include 249 individuals who posted bail prior to first appearance (n=46) or who are mailed a summons (n=203). In these two instances, the individual is generally not evaluated; hence their Vera scale scores and other interview data is unknown. Individuals who fail to appear at first appearance on a summons are evaluated; however, since summons cases are a unique group they are analyzed as if they were never interviewed.

² Compared to "Other" offenses (i.e. Gross DWI, Gross Prostitution, Possession Weapon without Permit, Fraud in Obtaining Credit, etc.)

³ Compared to 22 or older

Table 6
Logit Models of Probability of Failing to Appear in Court
Individuals Interviewed and Released

Independent Variables	Model 1 Vera Scale Items	Model 2 "Best Model" excluding Race	Model 3 "Best Model" including Race
Residence	-.251		
Living Situation	.015		
Time in Area	-.389	-.533 **	-.399
Employment/Income	-.239		
Voluntary Surrender	-.770		
Chemical Abuse	-.298		
Bench Warrant	.721 **	.775 **	.708 **
Escape ¹	-	-	-
Current Offense: Person	-.335		
Current Offense: Weapon	.216		
Prior Felony Convictions (1 or more)			
Prior Misdemeanor Convictions (1, 2 or more)			
Current Offense: Drug ²		-.582 **	-.592 **
Age 21 or less at Interview ³			
Race (1 = White, 0 = Black)			-.951 **
Constant	-1.20	-1.46	-1.12
Model Characteristics			
Sample Size (N)	516	516	472
Base Rate (% failures in sample)	16.3	16.3	15.9
Percentage of total variation (log-likelihood) explained	.21%	2.2%	4.4%
False Positive Rate	0	0	0
Sensitivity	0	0	0
Percentage Correctly Classified	83.7	83.7	84.1

* Significant at the .10 level

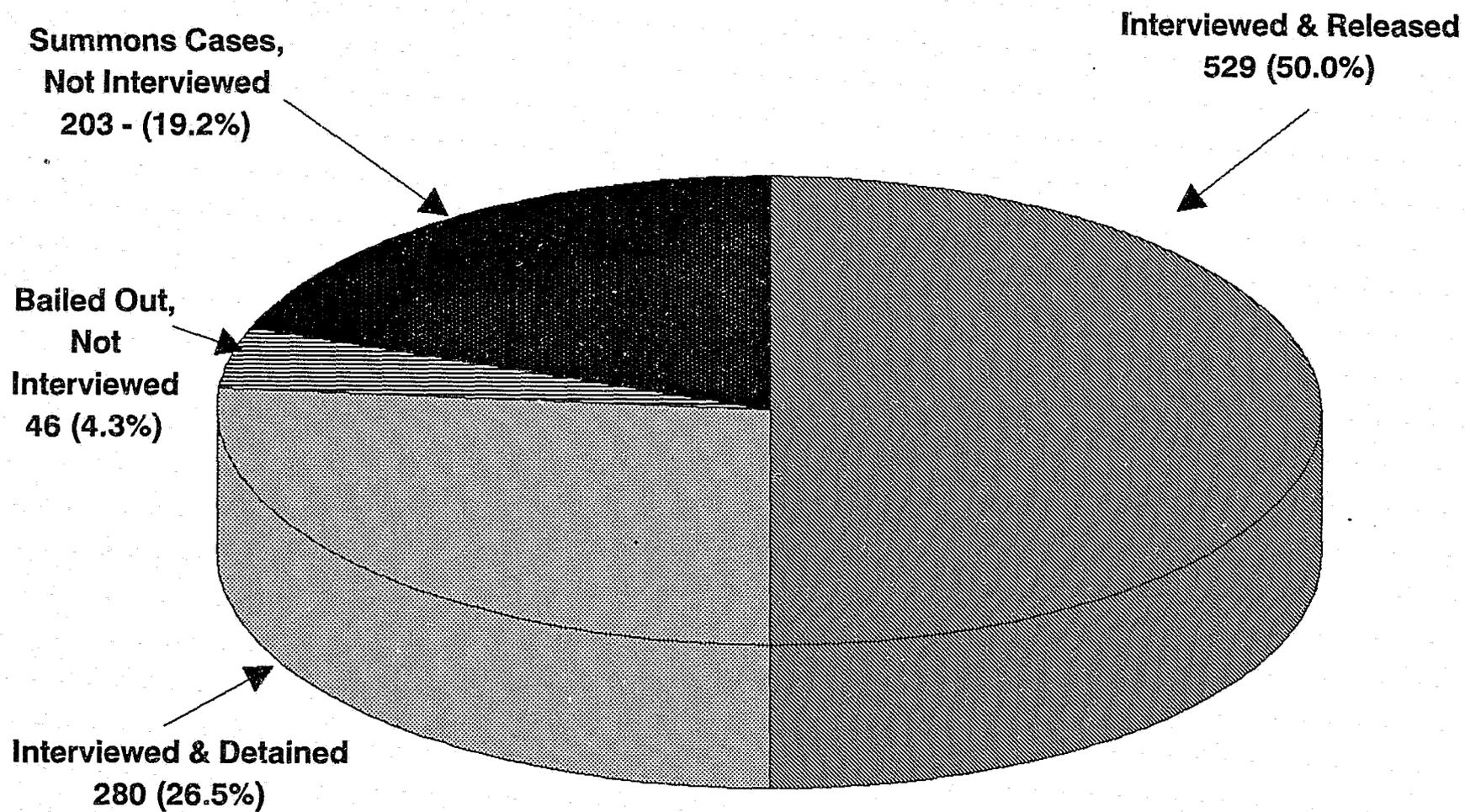
** Significant at the .05 level

¹ Only 8 individuals (1.6% of the sample) received points for escape; the variable was dropped from the analysis

² Compared to all other offenses

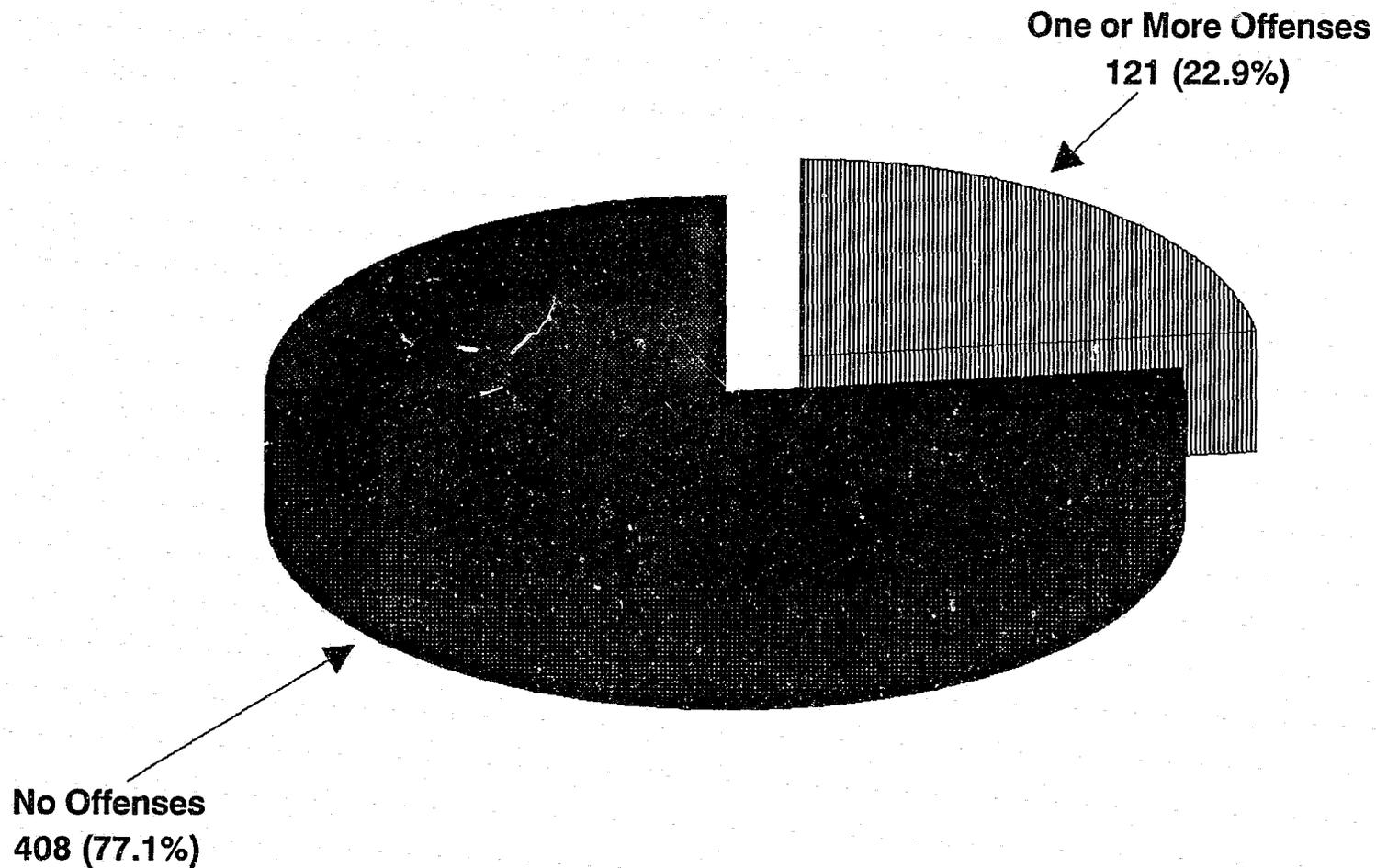
³ Compared to 22 or older

Figure 1.
Total Sample by Interview and Release Status
(N = 1058)



43

Figure 2.
Pretrial Offense Rates for Individuals Interviewed and Released
(N = 529)



44

Figure 3.
Failure to Appear Rates for Individuals Interviewed and Released
(N = 529)

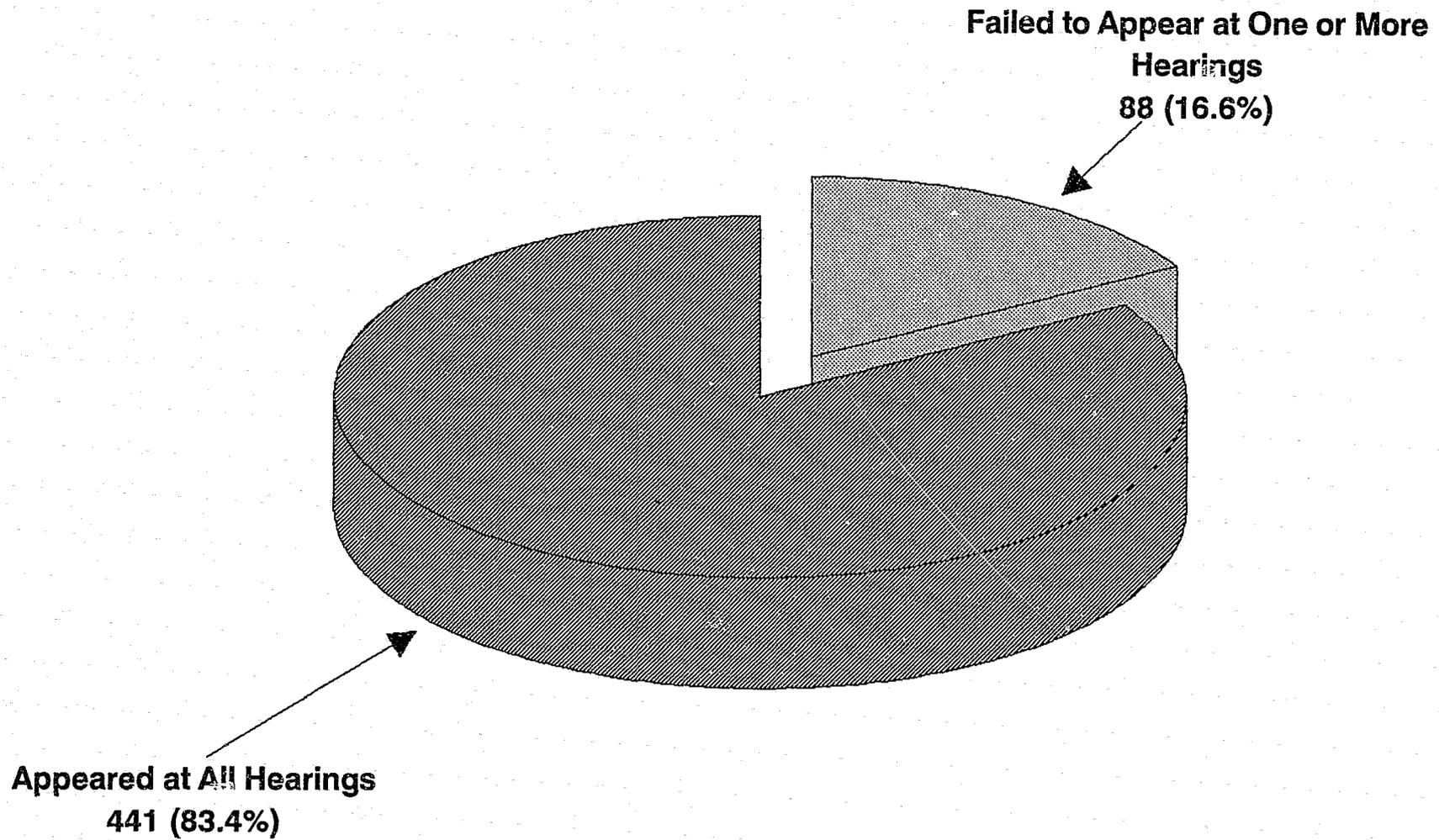
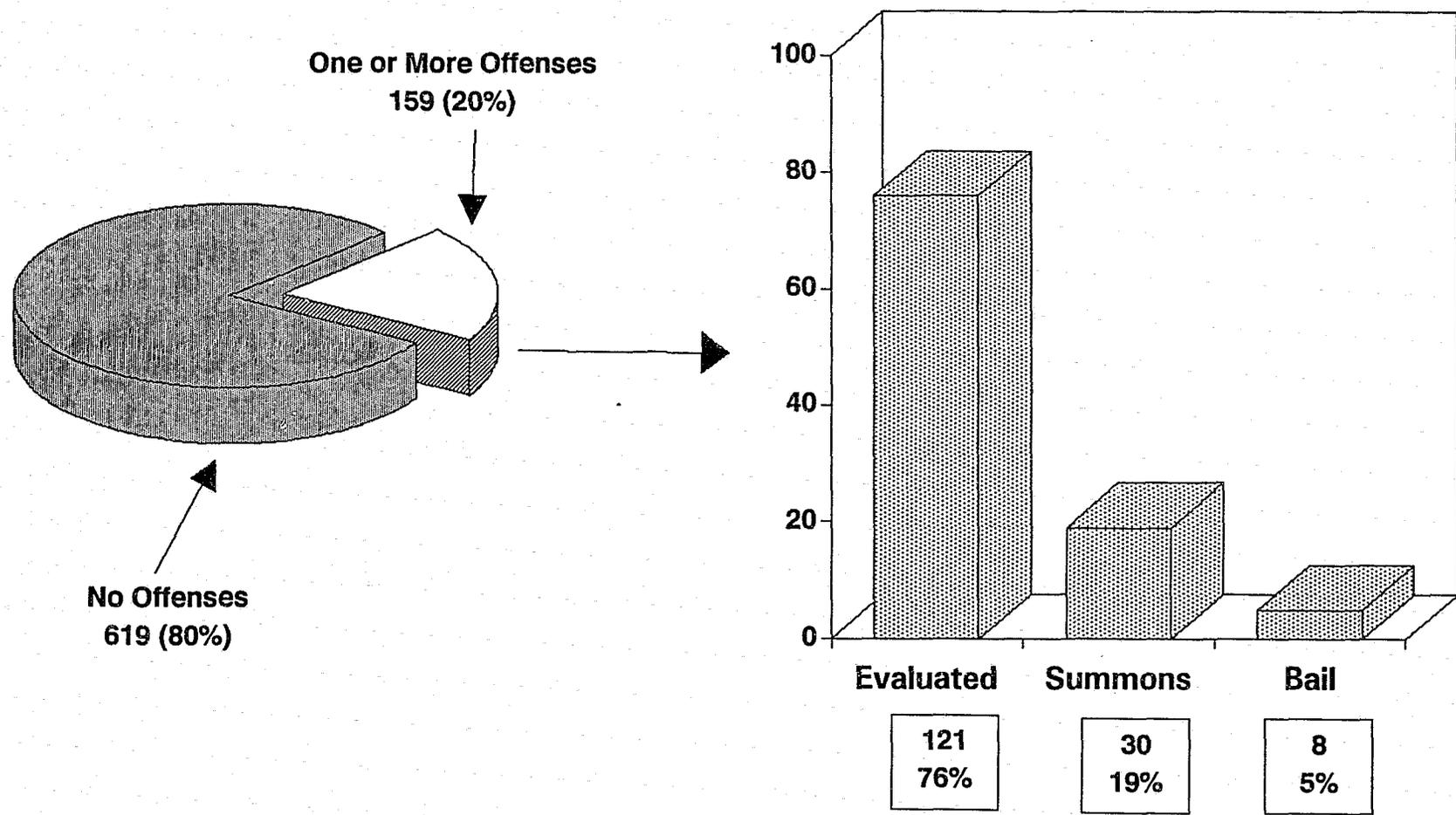


Figure 4.
Pretrial Offenses by Release and Interview Status
 (N = 778)

46

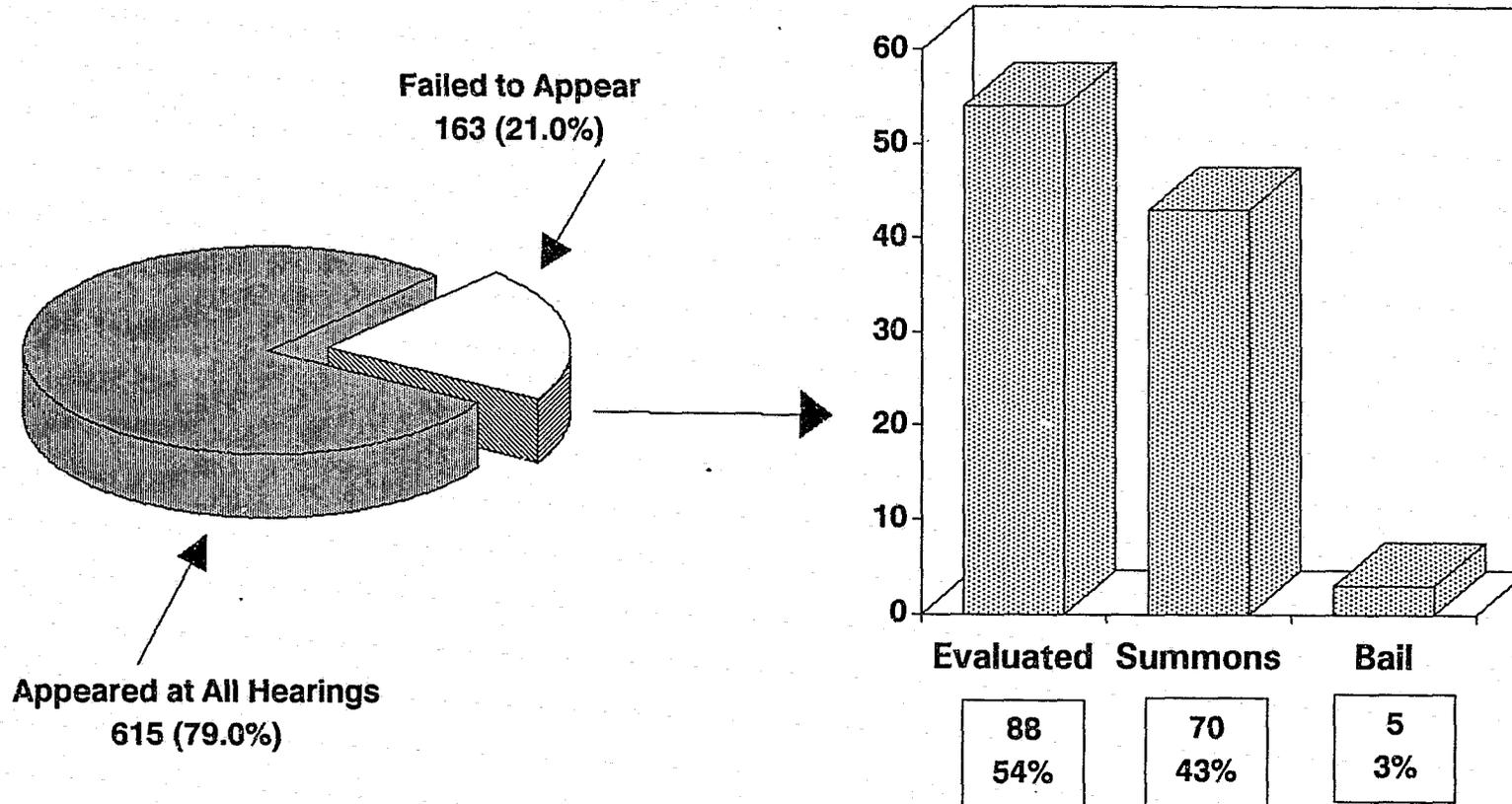


Source: Hennepin County, Minnesota Pretrial Release Study
 CHAR2-14.XLS

Figure 5.

Failure to Appear by Release and Interview Status

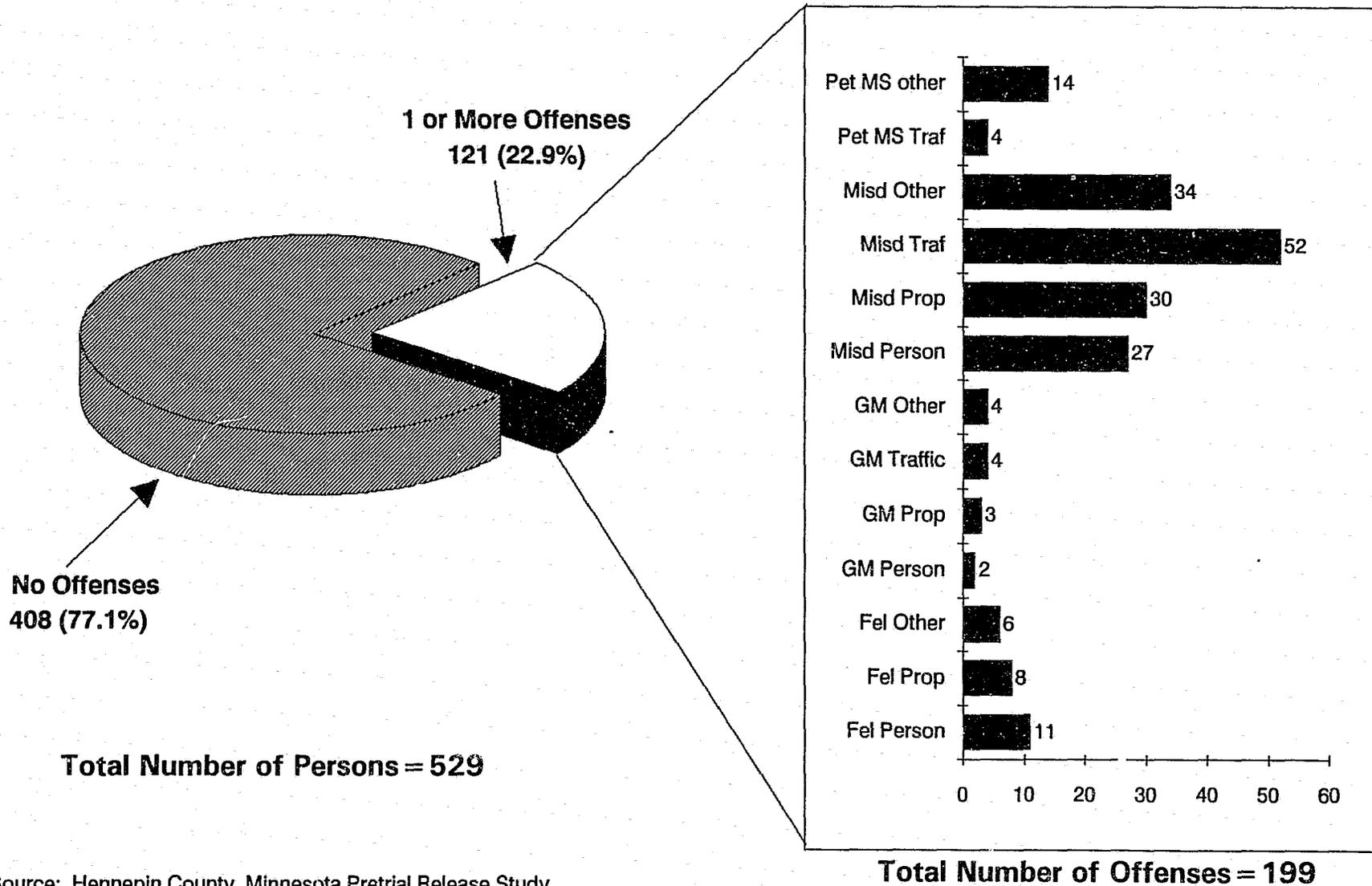
(N = 778)



47

Figure 6.
Pretrial Offenses by Degree and Type of Main Charge
Individuals Interviewed and Released
(N = 529)

48

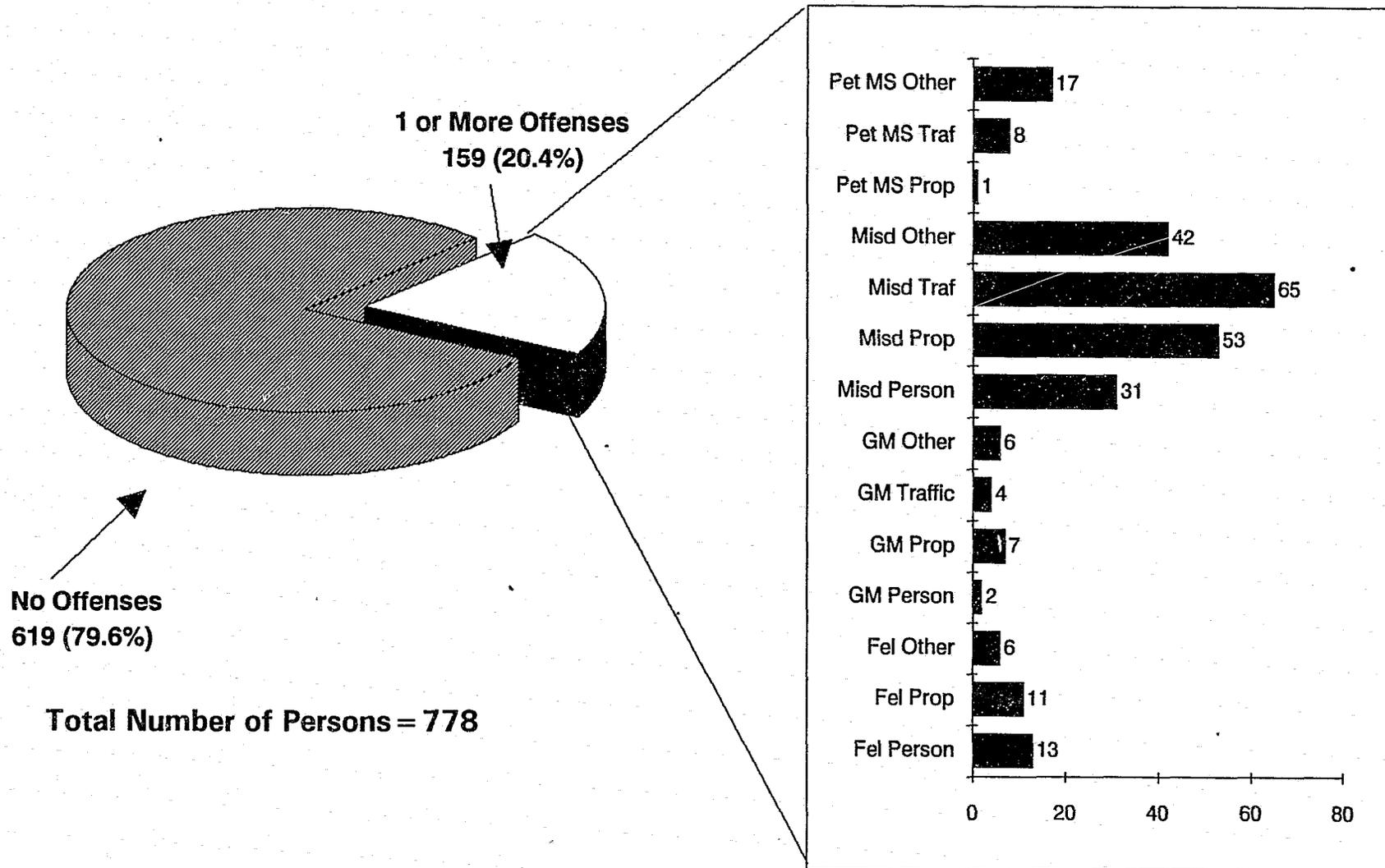


Source: Hennepin County, Minnesota Pretrial Release Study
 CHAR2-12.XLS

Figure 7.

Pretrial Offenses by Degree and Type of Main Charge
Individuals who Posted Bail, Received a Summons, or were Interviewed and Released
(N = 778)

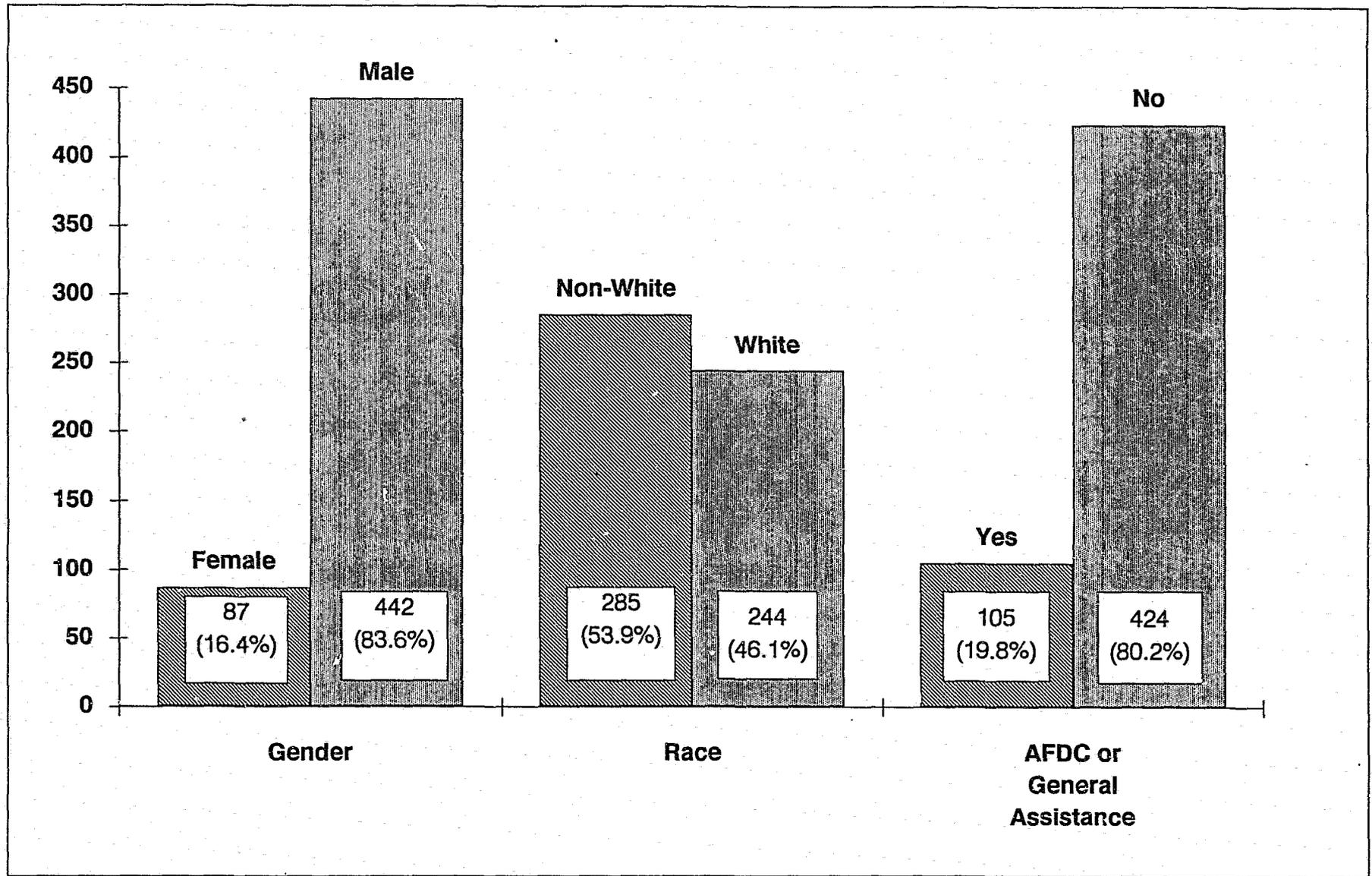
49



Source: Hennepin County, Minnesota Pretrial Release Study
CHAR2-13.XLS

Total Number of Offenses = 266

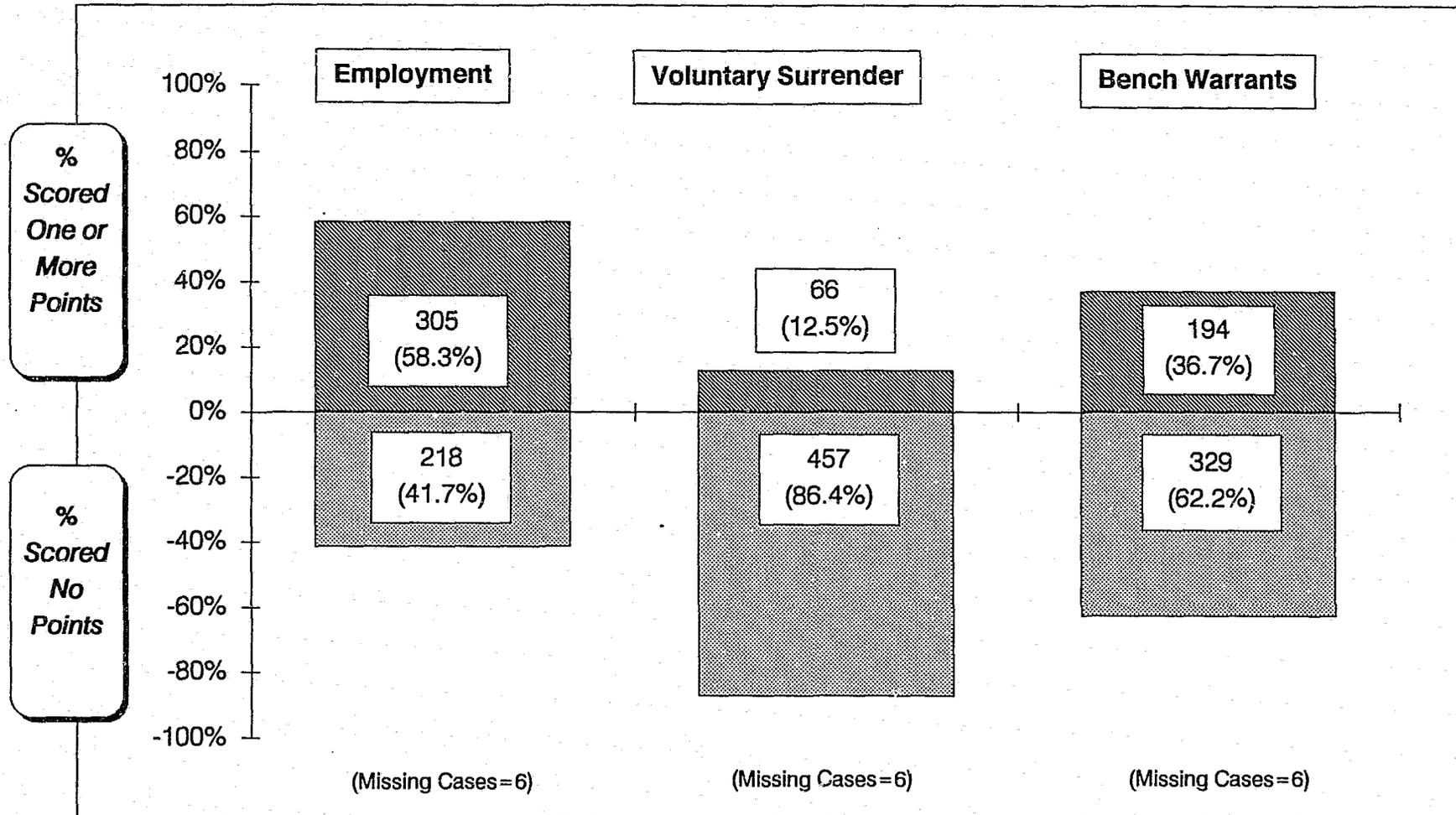
Figure 8.
Selected Demographics for Individuals Interviewed and Released
(N = 529)



Source: Hennepin County, Minnesota Pretrial Release Study
 CHAR2-2.XLS

Figure 9.

Selected Vera Items Scores for Individuals Interviewed and Released
(N = 529)



51

Figure 10.
Main Charged Offense for Individuals Interviewed and Released
(N = 529)

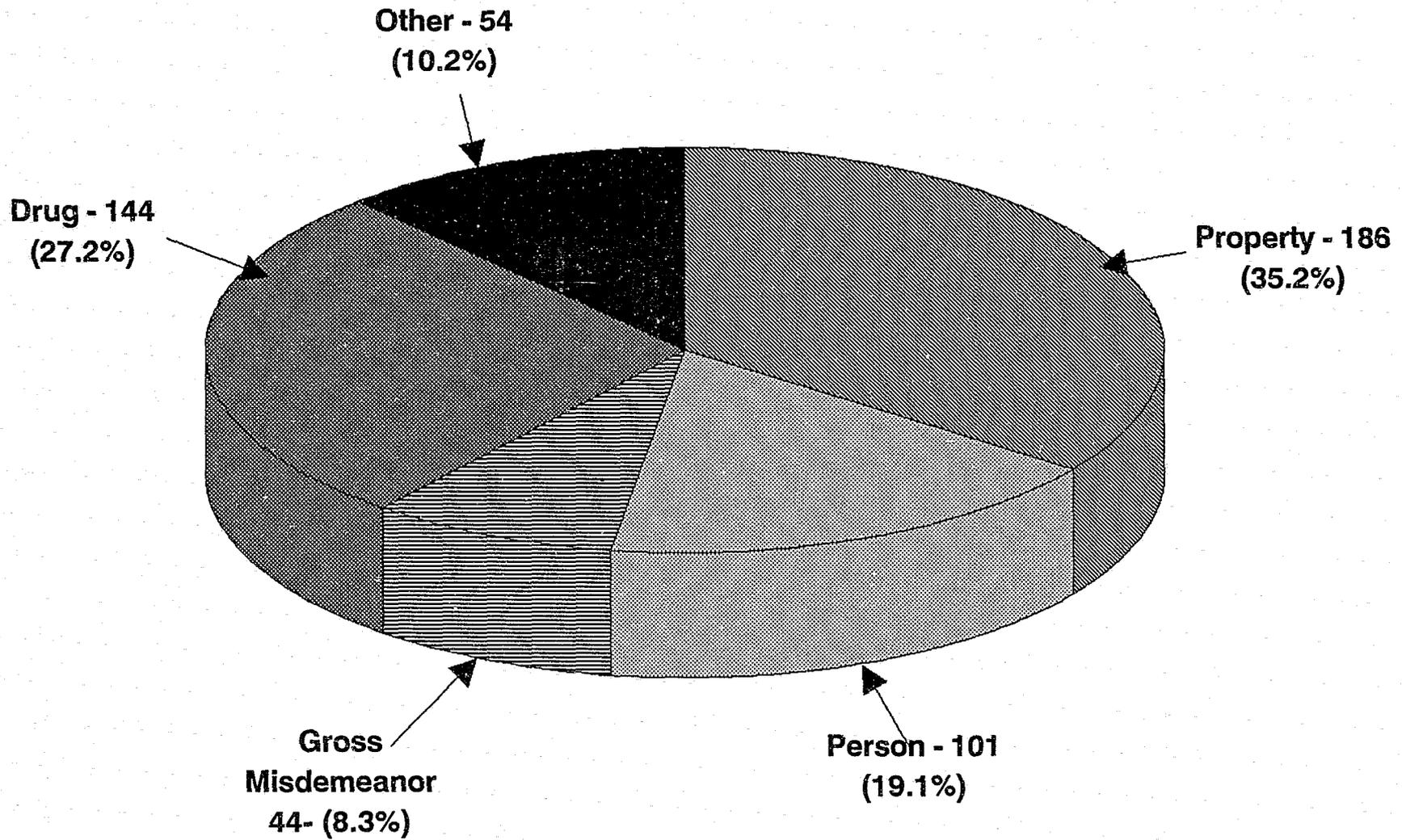
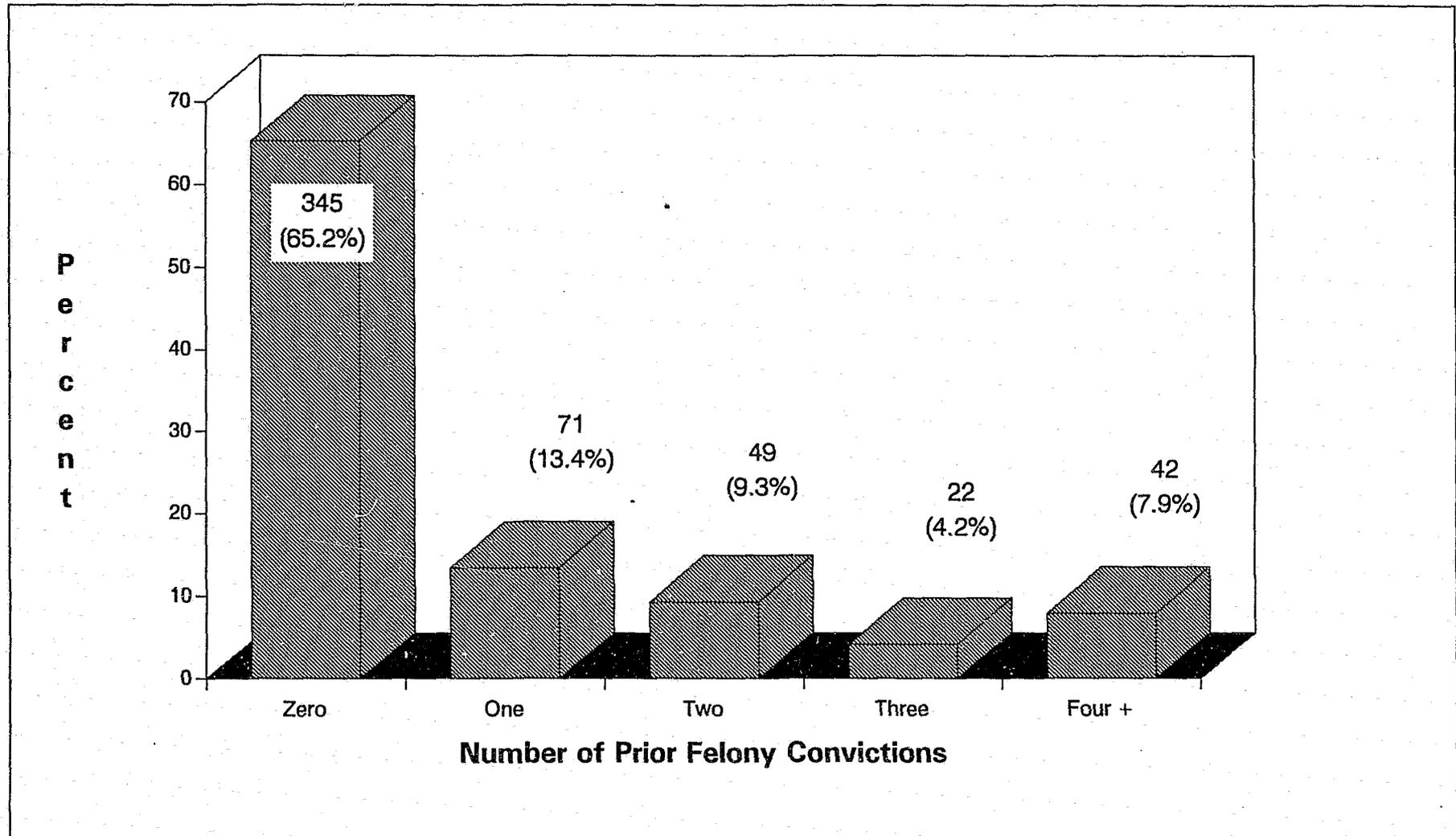


Figure 11.

Prior Felony Convictions for Individuals Interviewed and Released

(N = 529)



53

Figure 12.

Prior Misdemeanor Convictions for Individuals Interviewed and Released

(N = 529)

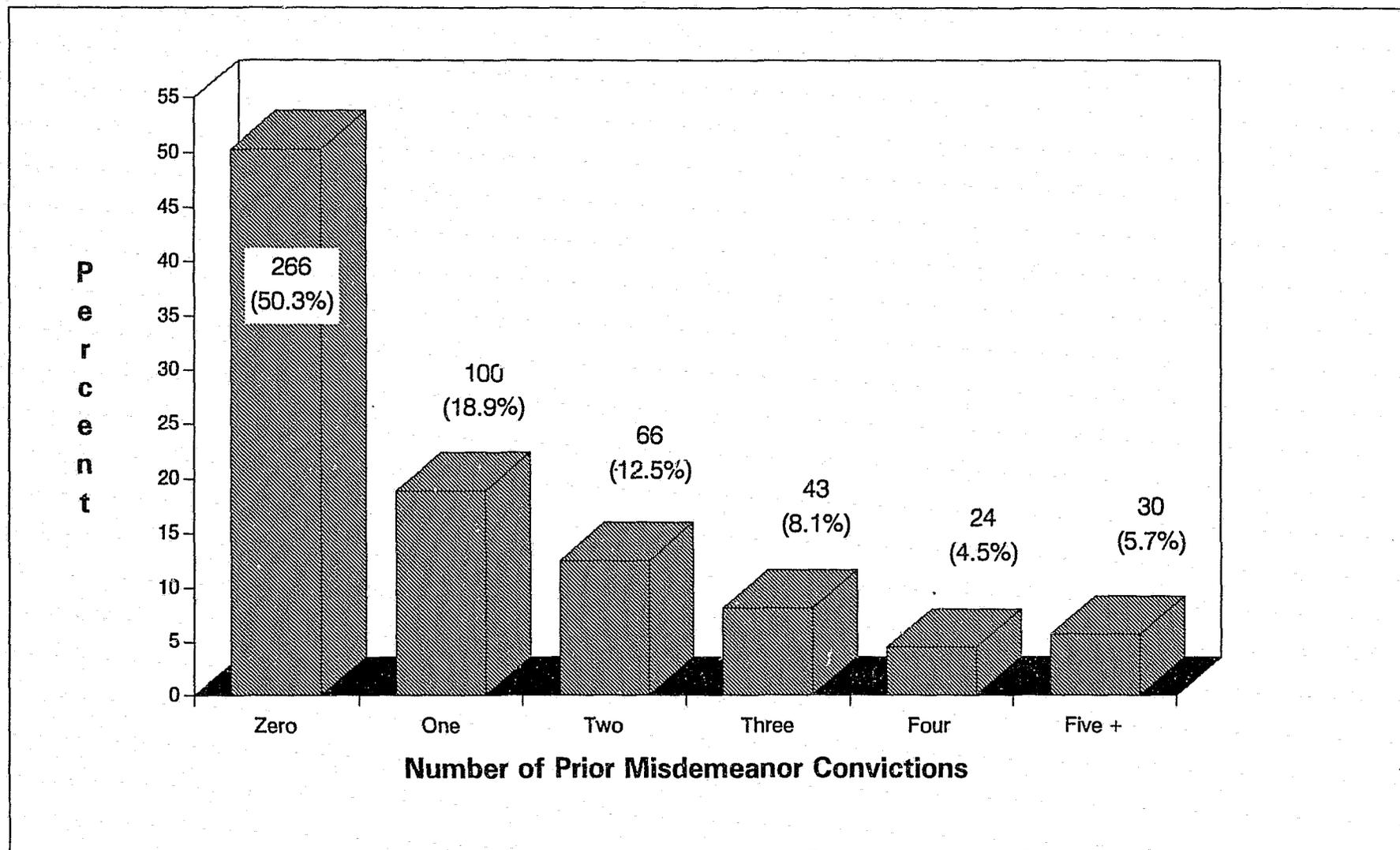
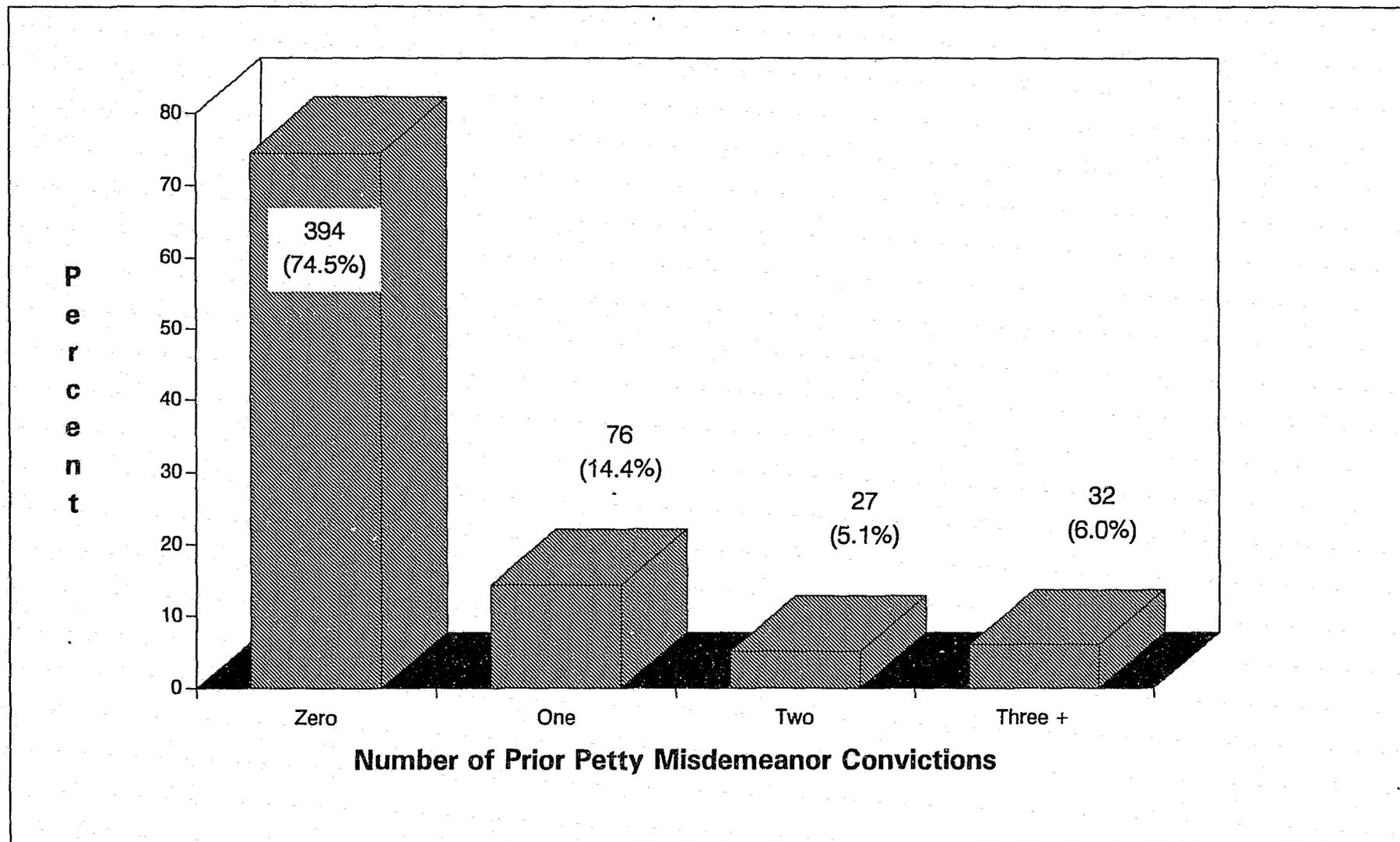


Figure 13.

Prior Petty Misdemeanor Convictions for Individuals Interviewed and Released

(N = 529)

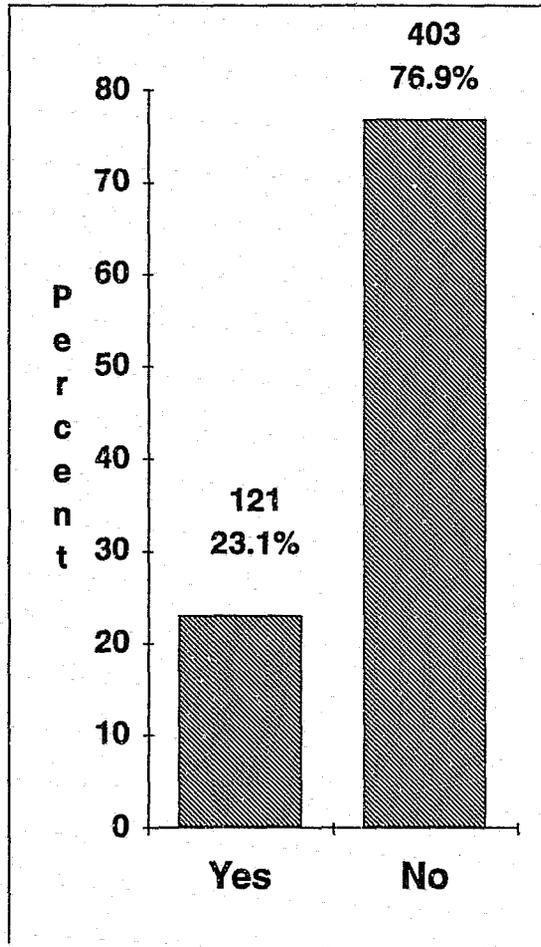


55

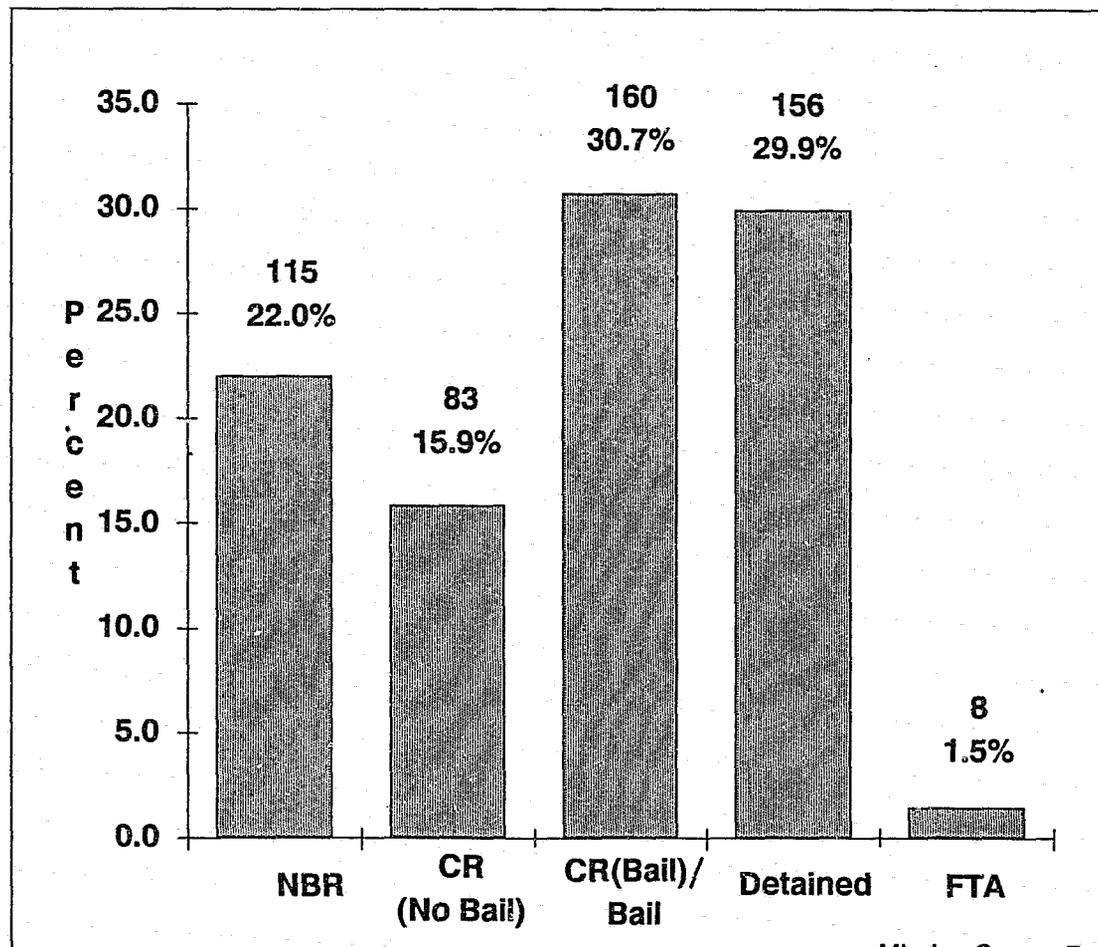
Figure 14.

***NBR Recommendation and 1st Appearance Outcome Figures
Individuals Interviewed and Released
(N = 529)***

NBR Recommendation



First Appearance Outcome



Missing Cases=5

Missing Cases=7