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Do the Correlates of High-Rate Delinquency Differ from Participation in Delinquency?: An Evaluation of Different Frequency of Delinquency Measures

Chester L. Britt, III
Department of Sociology
University of Illinois at Urbana
702 S. Wright St.
Urbana, IL 61801

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Abstract

The criminal career view suggests that the correlates of participation in and frequency of illegal activity may be different. Recent tests of this proposition have measured frequency as one or more delinquent acts. Unfortunately, this operationalization of frequency includes both high- and low-rate offenders in the active offender sample. This paper extends prior research by examining whether changing the measure of frequency of delinquency to (1) five or more and (2) ten or more delinquent acts produces a different set of significant correlates. Data come from the Seattle Youth Study and the first four years of the National Youth Survey. Probit and tobit analyses show the set of significant correlates of participation to be essentially the same as the set of correlates of five or more and ten or more delinquent acts.

INTRODUCTION

Criminologists have long been concerned with the theoretical importance of the distinction between participation in crime and the frequency with which criminal acts are committed (see Reiss, 1975). At issue has been concern that the causes of initial participation in crime may differ from the causes of continued involvement in criminal activity. Reiss (1975), among others, accurately notes that tests of criminological theory tend to operationalize crime or delinquency as participation (a yes-no dichotomy). While these measures can provide information, the argument goes, they cannot provide the full picture, because individuals committing only one crime *may* differ from individuals committing ten or twenty crimes. For example, Wolfgang et al. (1972) show that the frequency of offending varies substantially by race and SES of the individual. Other studies operationalizing crime as a frequency show patterns of results different from those of studies using a simple dichotomy (Ball, Ross, and Simpson, 1964; Douglas, Ross, Hammond, and Mulligan, 1966; Gordon, 1976; Little, 1965; Monahan, 1960).

Thus, relying on the inconsistency shown by the studies using frequency of crime rather than participation in crime, Blumstein and Grady (1982:255) claim

> ...that one set of factors distinguishes between those persons who become involved in crime the first time and those who do not, and that a different set of factors distinguishes those who persist in crime once involved, from those who discontinue criminality at an early stage.

The logic to Blumstein and Grady's claim is consistent with traditional positivistic analyses of crime and delinquency (see Gottfredson and Hirschi, 1990). Specifically, the first concern is to explain why a person commits crime, or, why a person becomes a criminal. This would then represent participation in crime. The second concern is then to try and explain why the person persists in committing crime. However, the world is assumed to be too complicated to fit a single behavioral explanation, and multiple theories must then be used to explain the wide variety of criminal activity. In other words, Blumstein and Grady (1982) assume that the factors

causing an individual to commit one crime will be different from the factors causing another individual to commit two crimes, and yet a third individual who commits 5 crimes, and so on (Blumstein et al., 1986, 1988a, 1988b reiterate this claim).

The position of different causes for different frequencies of offending lies in stark contrast to Gottfredson and Hirschi's (1990) claim that the causes of crime are the same, regardless of the frequency at which crime is committed. Gottfredson and Hirschi (1990) see the primary cause of criminal behavior as low self-control. Individuals with low self-control are expected to have higher probabilities of committing crime. The additional factor influencing crime commission is the social situation of the individual, which provides varying degrees of opportunity. In other words, individuals with high levels of self-control would not normally be expected to commit criminal acts, but the social situation may provide opportunities attractive even to them. Conversely, individuals with low self-control may be prevented from committing crimes if they are located in situations where it is very difficult for them to act on their impulses.

Gottfredson and Hirschi's discussion is important for the participation-frequency distinction because they assert that the individual-level causes of crime for the first and subsequent acts are the same (i.e., low self-control). What accounts for the frequency of activity is level of self-control and opportunity, or social situation. In short, the key elements to crime commission are not expected to change as individuals commit more crime. They are always self-control and opportunity. Thus, whether crime is operationalized as a dichotomy to represent participation or as a count to represent frequency, Gottfredson and Hirschi (1990) would claim that the correlates of these measures will be the same.

In short, the hypothesis to be tested in this paper is the similarity of the causes of participation and frequency of illegal behavior. Proponents of the criminal career view (Blumstein and colleagues, 1982, 1986, 1988a, 1988b) argue that the causes are different for participation and frequency, whereas the control theory relied on in this study (Gottfredson and Hirschi, 1990) argues that the causes are the same.

RECENT RESEARCH

There have been several recent attempts to test for differences in the causes of participation and frequency of crime. Gottfredson and Hirschi

(1988), using data from the Richmond Youth Survey, show how several correlates of participation – race, smoking, drinking and dating behavior, grade-point average (GPA), and delinquency of friends – have comparable associations with delinquency operationalized as participation or frequency among active delinquents.[1] Unfortunately, their analysis presents only a series of bivariate correlations, and while the similarity in the patterns of findings is striking, the lack of a multivariate test calls their results into question. It is possible that in a multivariate test of delinquency with these six independent variables, a different pattern of stability (or variability) would be observed.

Paternoster and Triplett's (1988) recent study of participation and frequency of delinquency tested the hypothesis of different causes for these two measures of illegal activity using a multivariate model. They analyzed a sample of 11th grade students in southeastern high schools (n=1,544), using independent variables representing four popular perspectives in criminology – social learning, social control, strain, and deterrence – to model participation and frequency of offending. Four delinquency items – marijuana use, drinking, petty theft, and vandalism – were coded as a dichotomy (0,1) to represent participation and as a count (1,2,3,...) for those individuals who had at least one commission of the act in the previous year to represent frequency.[2] Overall, Paternoster and Triplett found that the same sets of variables tended to explain both participation and frequency in each of the four delinquent acts, and concluded

> ...there was very little difference in the effects of the exogenous variables on the two outcome measures of delinquency (1988:614).

However, Paternoster and Triplett also argued that the illegal acts they focused on were not serious offenses, and that studies focusing on more serious acts, and using different samples, might reveal a different pattern of results.

Two other recent papers by Nagin and Smith (1991) and Smith, Visher, and Jarjoura (1991) also test for differences in the causes of

[1] An "active offender" is a person who has committed at least one illegal act in some designated time period (Blumstein et al., 1986).

[2] The participation model was tested with a probit statistical model, while the frequency model was tested with a tobit statistical model.

participation and frequency of delinquency with multivariate models. Although Nagin and Smith (1991) suggest some alternate tests for the similarity and difference in the parameter values, their conclusions are not vastly different from those of Paternoster and Triplett (1988) or Smith et al. (1991). Simply put, the strongest predictors of participation in delinquency also tend to be the strongest predictors of frequency of delinquency, with only minor exceptions.

Methodological Issues

The Gottfredson and Hirschi (1988) and Paternoster and Triplett (1988) studies thus provide preliminary evidence contradicting the claim of different causes for participation and frequency of offending. However, there are three important methodological issues that have not been satisfactorily resolved. First, does the operationalization of illegal behavior as a dichotomy (to measure participation) or a count of illegal acts among active offenders (to measure frequency) artifactually result in substantially different multivariate statistical models? Limiting the frequency analysis to those individuals with one or more illegal acts introduces censoring, since individuals are excluded from the sample unless the dependent variable (criminal behavior) has a value greater than zero. Censored samples, such as those created in testing multivariate models of frequency of offending among active offenders, can be analyzed with the tobit statistical model (see Judge, Griffiths, Hill, Lutkepohl, and Lee, 1985; Maddala, 1983). The tobit model provides unbiased and consistent regression estimates (where a regression model on the censored sample would not) by introducing controls for the individuals with zero scores on the dependent variable. The tobit model accomplishes this by first computing an individual's chances of having a value on the dependent variable greater than zero (with a probit model). This probability then represents a "hazard rate" parameter which is computed for every individual with a non-zero value on the dependent variable, and included as an additional variable in a classic regression analysis on the censored sample.

The parameter estimates produced from a tobit analysis require some care in their interpretation, since they represent both (1) the change in the dependent variable, weighted by the probability of having a non-zero value on the dependent variable and (2) the change in probability of having a non-zero value on the dependent variable, weighted by the expected value of the dependent variable, given that it is non-zero (Judge et al., 1985). For

our purposes below, we will be concerned primarily with the sign and statistical significance of each parameter, rather than with a formal interpretation of each parameter's magnitude.

Second, some concern has also been raised in the literature over the "cut-point" to represent participation and frequency of offending (see, especially, Gottfredson and Hirschi, 1986, 1987, and 1988). If the distinction between participation and frequency is made at 0 and 1 to represent active offenders, then researchers using self-report data will likely have some individuals coded as non-offenders (a zero value on the dependent variable) when they have, in fact, committed some other act that was just not recorded or used in the present analysis. In short, the number of illegal acts used to distinguish active offenders from non-offenders is arbitrary. Gottfredson and Hirschi's (1988) and Paternoster and Triplett's (1988) use of one or more offenses is consistent with concerns of the criminal career view that researchers focus on anyone with one or more criminal acts in some time period. However, it would also be reasonable to make a cut at five, ten, or even twenty offenses to try and distinguish the so-called "serious, high-rate" offender from both low-rate and non-offenders (see, for example, Chaiken and Chaiken, 1983; Greenwood, 1983). Fortunately, the tobit model discussed above can be modified to represent a different cut point. Thus, in so far as the data will permit analysis, different cut points will be compared in the analyses below.

Third, although there is a pattern to the results obtained in the recent papers by Nagin and Smith (1991), Paternoster and Triplett (1988), and Smith et al. (1991), all three papers potentially suffer from serious misspecification problems. All three papers include a large number of exogenous variables claimed to represent the three or four most prominent theories of delinquency. The problem with including all these variables, is that, by definition, some of the variables must be extraneous. Their inclusion in the model then biases the remaining statistical parameters. In other words, the inclusion of varaibles purported to represent labelling, strain, social learning, and social control theories of delinquency produces a model with too many variables that have no theoretical or empirical relevance in the same model. Thus, in an attempt to avoid this problem, the analyses below use a small number of correlates that are not inconsistent with any of these theories, and obvious misspecification problems are avoided.

THE CURRENT STUDY

To test the hypothesis of different causes for participation and frequency of illegal activity, data from the Seattle Youth Study (SYS) and the National Youth Survey (NYS) are used. Readers are referred to Hindelang, Hirschi, and Weis (1991) and Elliott, Huizinga, and Ageton (1985) for details on the collection of the SYS and NYS data sets, respectively.

The models to be examined with each data set are essentially multivariate replications of Gottfredson and Hirschi's (1988) effort. A limited number of variables are taken from each data set to represent variables found to be significant predictors of participation in offending in the crime and delinquency literature.[3] The focus of each analysis below is a test of whether predictors of participation also act as predictors of frequency of offending. To further advance our understanding of the frequency distinction, two cut-points (one or more and five or more delinquent acts) will also be examined to assess whether different definitions of the active delinquent substantially alter the pattern of statistically significant predictors in a multivariate model.

Measures

Dependent Variables. Participation and frequency measures of delinquency were constructed using two theft and two violence measures, which represent a range of seriousness, and are nearly identical across the two data sets. From the SYS, the four items are:

1. Theft of an item worth $2 or less.
2. Theft of an item worth $10 to $50.
3. Hit a teacher.
4. Fought with other students.

The NYS delinquency items are similar:

[3]While it would have been nice to test directly Gottfredson and Hirschi's (1990) substantive model of self-control and criminal behavior, none of the data sets was collected with the idea of measuring a concept such as self-control. Thus, rather than produce inaccurate findings about the validity of Gottfredson and Hirschi's (1990) substantive model of crime, simpler models, representing only a few indicators, are used to test for differences in participation and frequency of offending.

1. Theft of an item worth less than $5.
2. Theft of an item worth $5 to $50.
3. Hit a teacher.
4. Fought with other students.

The only substantive difference between the two data sets is the value of the stolen items. However, both items represent theft of $50 or less. Participation in delinquency is measured by whether an individual has committed any one of the four delinquent acts and is coded as (0,1). Frequency of delinquency among active delinquents is represented by the total number of times the individual claims to have committed all four acts.

Independent Variables. Demographic characteristics – age, race, and gender – are included below to model the different mean levels of delinquency among the different groups. Gender is represented by the variable Female and race is represented by the variable White. Again, based on prior research on the demographic correlates of delinquent behavior, females, whites, and older individuals are expected to have both lower chances of participating in delinquency and fewer delinquent acts, if they have committed any delinquent acts.

Three other variables are included in the following analyses because prior research has shown them to be strongly related to delinquency. First, delinquent friends has a positive relationship with delinquency, where those individuals claiming to have friends involved in delinquent activities are themselves more likely to be involved in delinquency (see, for example, Akers et al., 1979). In the SYS, this item was measured by whether the respondent had any friends (to his or her knowledge) who had been arrested. Those individuals responding "yes" were coded as a "0," while individuals responding "no" were coded as a "1" to represent the variable "No Delinquent Friends." In the NYS, "No Delinquent Friends" is represented by those individuals responding that none of their friends had committed any one of ten delinquent acts.[4] Again, individuals with no delinquent friends received a "1", while individuals with friends involved in

[4]These delinquent acts are cheating on tests, destroying property, using marijuana, stealing something worth less than $5, hitting someone, using alcohol, breaking into a vehicle, selling hard drugs, stealing something worth more than $50, and suggesting one break the law.

any of the ten delinquent acts received a "0." Individuals with no delinquent friends are then expected to be unlikely to participate in delinquency and to have low frequencies as well.

Second, Grade Point Average (GPA) has also been shown to have a negative relationship with delinquent behavior (see, for example, Hirschi, 1969). In both the SYS and NYS, scores of "4" represent an A average, "3" a B average, and "2" a C average. Then, due to differences in the original questions, in the SYS, a "1" represents a D average or lower, while in the NYS, a "1" represents a D average, and a "0" an F average. Based on prior work, it is expected that as GPA increases, the chances and frequency of delinquency will decrease.

Third, dating behavior has a positive relationship with delinquency, where those individuals who regularly date have increased chances of delinquent behavior (see, again, Hirschi, 1969). In both the SYS and NYS, this item is coded as a "1" if the respondent said that s/he regularly dates (at least once a week), and "0" otherwise.

In sum, females, whites, older individuals, those individuals with no delinquent friends, and those persons with higher GPA's are expected to have lower chances of participation in delinquency and lower frequencies of delinquency. In contrast those individuals who regularly date are expected to have higher chances of participation and higher frequencies of delinquent behavior.

FINDINGS

Tables 1 and 2 display the means, standard deviations, and ranges for the variables included in the SYS and NYS participation and frequency analyses below.

Table 3 presents the probit and tobit estimates for the SYS analysis. The probit results show that increased age, having no delinquent friends, and higher GPA all have statistically significant effects that reduce the chances a person has participated in any delinquent behavior, as expected. Dating has a significant positive relationship with participation, also as expected.

The tobit estimates for frequency operationalized as one or more delinquent acts shows the same variables have statistically significant effects as in the participation model. In other words, increased age, having no

delinquent friends, and higher GPA reduce the chances of delinquency and reduce the frequency of delinquency if it has occurred. Similarly, dating increases the chances of delinquency and its frequency, too.

To investigate the effects of a different cut-point for frequency of delinquent behavior, frequency was also operationalized as five or more delinquent acts. The number of statistically significant variables is reduced, with age and dating no longer having significant effects on the frequency of delinquent behavior, while having no delinquent friends and higher GPA still reduce the frequency of delinquent behavior. While these results, at first glance, appear to support the criminal career claim of different causes of frequency of illegal behavior, the variation in all the independent variables is reduced considerably when the cut-point is changed from one to five or more delinquent acts. The lack of variation in the independent variables make the statistical estimation more uncertain and difficult, implying that the parameter estimates and their standard errors may be unstable.

Table 4 presents the probit estimates for all four waves of data from the NYS. In all four years, females, older individuals, those with no delinquent friends, and those with higher GPA's were less likely to participate in any delinquent activity. In all but the second year, dating significantly increased the chances of participating in delinquency, as expected. The one statistically significant finding that provides an anomaly is that whites were significantly more likely to participate in delinquent activity in the third year. However, given the lack of this variable's statistical significance in all other analyses, this finding may be a chance result.

Table 5 shows the tobit estimates for frequency of delinquent behavior operationalized as one or more delinquent acts. The statistically significant parameters in Table 5 are identical to those in Table 4, with two exceptions. First, white individuals do not have statistically lower frequencies of delinquency in Wave 3, compared to the lower level of participation found in Table 4. Second, dating significantly increased the chances of delinquency in Wave 4, but did not increase the frequency of delinquency in the same year.

Table 6 provides the tobit estimates for frequency operationalized as five or more delinquent acts. Overall, there is considerable similarity between the pattern of statistically significant parameters in Tables 5 and 6,

since the two tables reveal only four major differences. In Wave 1, age and no delinquent friends had significant negative effects on both participation and frequency defined as one or more delinquent acts, but these items had no effect on frequency when defined as five or more delinquent acts. In Wave 2, age again fails to reduce significantly the frequency of delinquency for the subsample of individuals with five or more delinquent acts. Lastly, in Wave 3, no delinquent friends fails to significantly reduce the frequency of delinquency among the individuals with five or more delinquent acts.

To summarize, there is a great deal of similarity in both the SYS and NYS analyses comparing participation with frequency of delinquency, when the cut-point is operationalized as one or more delinquent acts. When the cut-point for frequency is changed to five or more delinquent acts, the pattern of results is still quite similar to the participation and one or more frequency analyses, although there is some variation in the total number of statistically significant parameters. Overall, however, the results in Tables 3 through 6 imply support for the idea that the causes of participation and frequency of illegal activity are indeed the same, regardless of the operationalization of frequency of illegal activity.

SUMMARY AND CONCLUSIONS

The analyses in this paper attempt to test the claim that the causes of participation in some form of illegal activity are somehow different from the causes of the frequency of that illegal behavior once it occurs. Using data from the Seattle Youth Study and the National Youth Survey multivariate models of participation and frequency of offending were tested with probit and tobit statistical models, respectively, to assess whether the same set of variables that predicted participation also predicted frequency of illegal behavior. Further, in the SYS and NYS analyses, two operationalizations of frequency of delinquency were compared. Specifically, "one or more" and "five or more" delinquent acts were used as two different cut-points to see whether the different operationalizations of delinquency could substantially alter the findings.

In both the Seattle Youth Study and National Youth Survey, the same six items representing demographic (age, race, and gender) and social (delinquent friends, GPA, and dating behavior) characteristics were available to evaluate the proposed hypothesis. In the SYS, there was no

difference in the form of the statistically significant model for participation and frequency, when the cut-point for frequency was one or more delinquent acts. When the cut-point was shifted to five or more delinquent acts, there was variation in the set of statistically significant parameters. However, this variation was not sufficient to undermine support for the claim that the causes of participation and frequency of delinquency are the same – because when all results are close to the borderline of statistical significance, apparent differences in outcome are simply much more likely.

In the National Youth Survey, two trivial differences in the pattern of statistically significant effects in the participation and frequency models were observed, when frequency was operationalized as one or more delinquent acts. When the cut-point for the frequency analysis was changed to five or more delinquent acts, there was slight variation in the pattern of statistically significant effects. Again, the overall pattern was one of stability of the causes of participation and frequency of delinquency, regardless of the operationalization of frequency of illegal activity.

To summarize, there is strong support for the idea that the causes of committing one illegal act are the same as the causes of committing many illegal acts. The findings from the SYS and NYS, using relatively minor theft and violence acts, both confirm and extend the general pattern of results presented by Nagin and Smith (1991), Paternoster and Triplett (1988), Smith et al. (1991); namely, that delinquent behavior is predicted equally well, whether operationalized as participation or frequency of illegal activity, or whether frequency was operationalized as one or more or five or more delinquent acts.

The claim of Blumstein et al. (1986, 1988a) that the causes of participation and frequency of illegal activity may be different appears to be in error. While the data here have limitations – the SYS and NYS use relatively minor delinquent acts, and only two operationalizations of frequency of offending were analyzed – the two data sets, together, raise serious questions about the claim of different causes. The results in fact suggest that proponents of the claim that participation and frequency require substantively different explanations need to reevaluate this assertion, and propose an alternative that is consistent with the facts.

Table 1: Seattle Youth Study Means, Standard Deviations, and Ranges for the Participation and Frequency Analyses (n=1,471).

Variable	Mean	Standard Deviation	Minimum	Maximum
Female	0.250	0.433	0	1
Age	16.502	0.928	14	18
White	0.703	0.457	0	1
No Delinquent Friends	0.542	0.498	0	1
GPA	2.681	0.744	1	4
Date	1.107	0.310	0	1
Number of Delinquent Acts	1.862	9.031	0	215
Any Delinquency	0.311	0.463	0	1

Table 2: National Youth Survey Means, Standard Deviations, and Ranges for the Participation and Frequency Analyses.

Variable	Mean	Standard Deviation	Minimum	Maximum
Wave 1: (n=1,442)				
Female	0.482	0.500	0	1
Age	13.870	1.925	11	17
White	0.806	0.395	0	1
No Delinquent Friends	0.085	0.279	0	1
GPA	2.752	0.818	0	4
Date	0.769	0.422	0	1
Number of Delinquent Acts	7.992	52.940	0	1413
Any Delinquency	0.539	0.499	0	1

Table 2 (Continued)

Wave 2: (n=1,440)				
Female	0.478	0.500	0	1
Age	14.850	1.924	12	18
White	0.809	0.393	0	1
No Delinquent Friends	0.076	0.265	0	1
GPA	2.744	0.803	0	4
Date	0.819	0.385	0	1
Number of Delinquent Acts	4.402	18.350	0	400
Any Delinquency	0.478	0.500	0	1

Table 2 (Continued)

Wave 3: (n=1,474)				
Female	0.472	0.499	0	1
Age	15.680	1.890	13	19
White	0.807	0.394	0	1
No Delinquent Friends	0.068	0.252	0	1
GPA	2.714	0.822	0	1
Date	0.851	0.356	0	1
Number of Delinquent Acts	3.865	21.650	0	400
Any Delinquency	0.398	0.490	0	1

Table 2 (Continued)

Wave 4: (n=1,301)				
Female	0.482	0.500	0	1
Age	16.500	1.833	14	20
White	0.795	0.404	0	1
No Delinquent Friends	0.051	0.221	0	1
GPA	2.699	0.821	0	4
Date	0.893	0.309	0	1
Number of Delinquent Acts	3.402	20.775	0	502
Any Delinquency	0.344	0.475	0	1

Table 3: Probit and Tobit Estimates with Standard Errors for the Seattle Youth Study Participation and Frequency Analyses.

Variable	Probit Estimate (s.e.)	Tobit (1+) Estimate (s.e.)	Tobit (5+) Estimate (s.e.)
Intercept	3.265 (0.642)	31.147 (10.993)	10.659 (42.890)
Female	-0.061 (0.086)	-2.198 (1.502)	-4.503 (5.841)
Age	-0.194 (0.039)	-2.023 (0.666)	-1.940 (2.477)
White	-0.100 (0.078)	-0.425 (1.348)	-2.893 (5.144)
No Delinquent Friends	-0.424 (0.073)	-6.225 (1.281)	-16.966 (4.995)
GPA	-0.246 (0.050)	-3.702 (0.878)	-11.628 (3.418)
Date	0.418 (0.127)	-4.192 (2.234)	-4.474 (8.556)
Sigma		18.290 (0.646)	44.207 (3.591)
Likelihood Function	-849.54	-2390.6	-741.02
Restricted Likelihood	-911.49		

Table 4: Probit Estimates with Standard Errors for the National Youth Survey Participation Analyses, Waves 1 through 4.

Variable	Wave 1	Wave 2	Wave 3	Wave 4
Intercept	1.762 (0.300)	1.741 (0.310)	2.733 (0.331)	2.821 (0.382)
Female	-0.754 (0.071)	-0.805 (0.071)	-0.740 (0.072)	-0.801 (0.078)
Age	-0.061 (0.019)	-0.054 (0.019)	-0.140 (0.020)	-0.136 (0.022)
White	-0.035 (0.089)	-0.017 (0.088)	0.186 (0.090)	-0.051 (0.093)
No Delinquent Friends	-1.027 (0.146)	-1.014 (0.160)	-1.331 (0.200)	-1.073 (0.225)
GPA	-0.213 (0.043)	-0.242 (0.045)	-0.294 (0.044)	0.325 (0.047)
Date	0.316 (0.087)	0.149 (0.097)	0.276 (0.106)	0.347 (0.131)
Likelihood Function	-872.63	-875.26	-852.78	-717.24
Restricted Likelihood	-995.16	-996.80	-990.54	-837.04

Table 5: Tobit Estimates with Standard Errors for the National Youth Survey Frequency Analyses for One or More Delinquent Acts, Waves 1 through 4.

Variable	Wave 1	Wave 2	Wave 3	Wave 4
Intercept	69.105 (20.135)	27.021 (7.560)	45.624 (10.934)	67.289 (13.354)
Female	-39.380 (4.860)	-17.214 (1.804)	-19.014 (2.494)	-19.371 (2.856)
Age	-3.924 (1.290)	-0.875 (0.481)	-3.003 (0.671)	-3.643 (0.787)
White	-1.602 (5.939)	-3.466 (2.132)	4.246 (3.038)	0.241 (3.270)
No Delinquent Friends	-59.889 (11.135)	-23.385 (4.386)	-39.237 (7.463)	-33.319 (8.653)
GPA	-11.982 (2.937)	-5.171 (1.079)	-6.914 (1.436)	-10.890 (1.633)
Date	17.711 (5.964)	2.276 (2.374)	7.789 (3.543)	6.966 (4.627)
Sigma	77.490 (1.992)	27.717 (0.771)	36.642 (1.110)	37.874 (1.318)
Likelihood Function	-4802.8	-3626.4	3313.6	-2584.4

Table 6: Tobit Estimates with Standard Errors for the National Youth Survey Frequency Analyses for Five or More Delinquent Acts, Waves 1 through 4.

Variable	Wave 1	Wave 2	Wave 3	Wave 4
Intercept	-13.379 (54.299)	4.302 (22.460)	-15.791 (33.518)	45.461 (38.903)
Female	-94.731 (14.006)	-40.337 (5.933)	-53.695 (8.853)	-45.565 (9.271)
Age	-3.998 (3.510)	-1.453 (1.443)	-3.669 (2.063)	-5.607 (2.341)
White	-3.841 (15.850)	-3.684 (6.246)	7.279 (9.448)	10.648 (9.973)
No Delinquent Friends	-541.942 (1748.360)	-71.550 (23.087)	-268.825 (1049.460)	-69.314 (31.729)
GPA	-31.712 (7.929)	-12.271 (3.158)	-11.508 (4.299)	-20.292 (4.644)
Date	51.047 (17.188)	8.739 (7.176)	25.132 (11.809)	8.457 (13.301)
Sigma	151.719 (7.323)	58.788 (3.280)	79.353 (4.886)	79.279 (5.453)
Likelihood Function	-1859.8	-1386.9	-1206.3	-981.77

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