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ABSTRACT

Reports by students and teachers of their experiences of personal victimization are used to examine the meaning and distribution of rates of victimization in a national sample of 642 public junior and senior high schools. This research integrates data from questionnaire responses by the schools' principals, teachers, and students; student interviews; and information about the community in which the school is located derived from the 1970 census. Data characterizing schools are used to examine correlates of various kinds of victimization in schools. Results imply that victimization is best regarded as multidimensional, and that different dimensions have different sources. Victimization reports by black and white teachers and students, and male and female students, appear to measure different phenomena which are linked to different school and community characteristics. Affluence and the schools' academic orientation are positively related to teachers' reports of victimization, but negatively related to students' reports. The soundness of a school's administration is negatively related to teacher and black student victimization rates. This research accords with earlier research, implying that school administrative practices contribute to the levels of disruption schools experience, despite individual and community influences on school disruption. (Author/GK)

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ED206702

Report No. 306
March 1981

MEASURING VICTIMIZATION AND THE EXPLANATION OF SCHOOL DISRUPTION

Gary D. Gottfredson, Richard D. Joffe, and Denise C. Gottfredson

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Grant No. NIE-G-80-0113

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Center for Social Organization of Schools
The Johns Hopkins University
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ABSTRACT

Reports by students and teachers of their experiences of personal victimization are used to examine the meaning and distribution of rates of victimization in a national sample of 642 public junior and senior high schools. This research integrates data from several sources: questionnaire responses by the schools' principals, teachers, and students; student interviews; and information about the community in which the school is located derived from the 1970 census. Aggregate data characterizing schools are used to examine correlates of various kinds of victimization in schools. The results imply that victimization is best regarded as multidimensional, and that different dimensions have different sources. Victimization reports by black and white teachers and students, and male and female students, appear to measure different phenomena, and these phenomena are linked to different school and community characteristics. Measures of affluence and the schools' academic orientation are positively related to teachers' reports of victimization, but negatively related to students' reports of victimization (in the form of theft, for example).

Some findings of earlier research using unidimensional victimization measures were upheld in this more thoroughgoing analysis. The soundness of a school's administration--indexed by reports of teacher-administration cooperation, fairness and clarity of the school's rules, and student attachment to the school--is negatively related to teacher

(regardless of race) and black student victimization rates. This research accords with earlier research, practical experience, and reviews implying that school administrative practices contribute to the levels of disruption schools experience, despite a host of individual level and community influences on school disruption. Some puzzles for future research are discussed.

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MEASURING VICTIMIZATION AND THE EXPLANATION OF SCHOOL DISRUPTION

Since 1974 the Gallup organization has asked the public about its attitudes toward the schools. The percentage of respondents in the annual surveys giving the schools an "A" rating declined from 18 to 8% between 1974 and 1979 (Gallup, 1979, p. 35). In the most recent survey of America's teenagers, only 9% give the schools an "A" rating (Bahner, 1980, p. 106). In ten out of the eleven surveys of adults, lack of discipline tops the list of the most serious problems seen as facing the schools, and over half of the teenagers say that students creating disturbances in class and theft of personal property are "very big" or "fairly big" problems in their schools (Bahner, 1980, p. 107).

We are grateful to Carol Heinreich whose hard work and talent made computing at CSOS possible. We are also grateful for the cooperation of hundreds of principals and thousands of teachers and students who made this research possible, and for the diligent efforts of National Institute of Education (NIE) staff who conducted the Safe School Study. The data used in this research were made available by the Inter-University Consortium for Political and Social Research. The data were originally collected by the Research Triangle Institute on behalf of NIE. Neither the original source nor the Consortium bear any responsibility for the analysis or interpretation presented here. This research was supported in part by Grant No. NIE-G-80-0213. Opinions expressed do not necessarily reflect the position or policy of NIE, and no official endorsement by the Institute should be inferred.

These public perceptions are fostered by and reflected in national media attention ("City Schools in Crisis," 1977; "High Schools under Fire," 1977; "Help! Teacher Can't Teach!" 1980; "What Kids Do to Schools and What Schools Do to Kids," 1978). They are also reflected in Congressional Hearings where testimony creates the image of major problems within the schools (U.S. Senate, Committee on the Judiciary, 1975, 1976; U.S. House of Representatives, Subcommittee on Elementary, Secondary, and Vocational Education, 1980). The typical concerns are about how well education can take place in a disruptive environment, about the safety of teachers and students, about interpersonal relations in desegregated schools, and about the costs of school vandalism.

Victimization in Schools

Teachers experience a variety of indignities in schools ranging from rare but serious offenses, such as rape or serious assault, to frequent and pervasive experiences of verbal abuse. The percentages of teachers experiencing several kinds of personal victimization in schools in major metropolitan and rural areas in a typical month are displayed in Figure 1 (based on unpublished tabulations from the National Institute of Education's Safe School Study). For most types of teacher victimization, lowest rates are found in rural schools, followed by suburban and then small city schools; highest rates are found in schools in major cities. Although experiences of serious victimizations are relatively rare in a proportionate sense, so many teachers work in the nation's public schools that in a typical month an estimated

6,000 junior or senior high school teachers experience at least one robbery; 128,000 have something worth more than $1.00 stolen; and 5,200 are physically attacked. Other types of indignities are experienced more frequently: 48% of junior or senior high school teachers report that students swore or made obscene gestures at them in a typical month, 12% report that a student threatened to hurt them, and an equal percent report hesitating to confront misbehaving students for fear of their own safety.

An additional way to put the victimization of teachers into perspective is to examine the proportions of victimization for various serious crimes in school. The vast majority of crimes against teachers involve theft (larceny without contact, 79%). Other crimes are experienced less frequently: simple assault (11%), aggravated assault (7%), robbery (2%), larceny with contact (1%), and rape (nearly 0%) (McDermott, 1977).<1>

Students experience a similar range of indignities. Rapes and serious assaults occur so rarely that obtaining reasonably precise estimates of their frequency or distribution is nearly impossible. Figure 2 shows information about student victimizations which corresponds to the Figure 1 information for teachers. Student victimizations appear less concentrated in big city schools than do teacher victimizations--about the same proportion experience attacks in the suburban schools as in the big city schools, for exam-

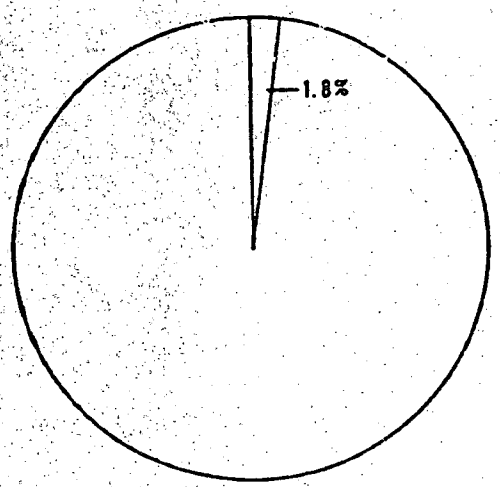
---

1. The percentages reported in this paragraph are based on Census Bureau-LEAA surveys conducted in 28 cities. "Teachers" includes administrators as well as classroom teachers in this paragraph.

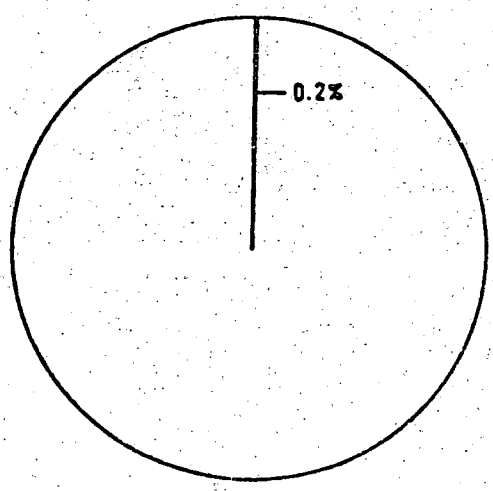
Figure 1

Percentage of Teachers Reporting Various Events
(typical month, source: NIE, 1977)

Physical attacks

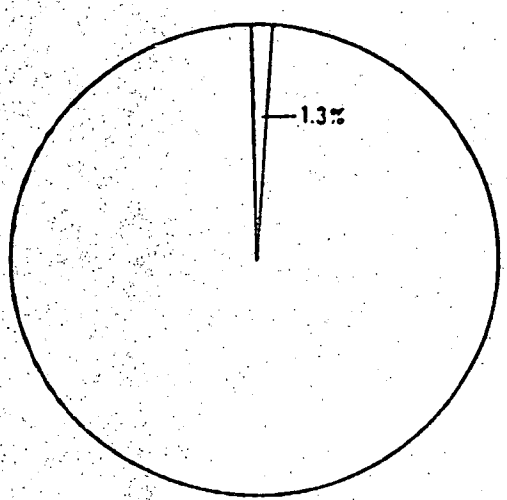


big city



rural

Robbed--any amount



big city

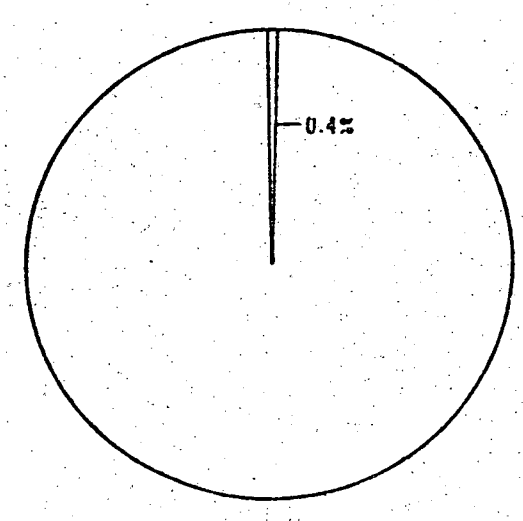


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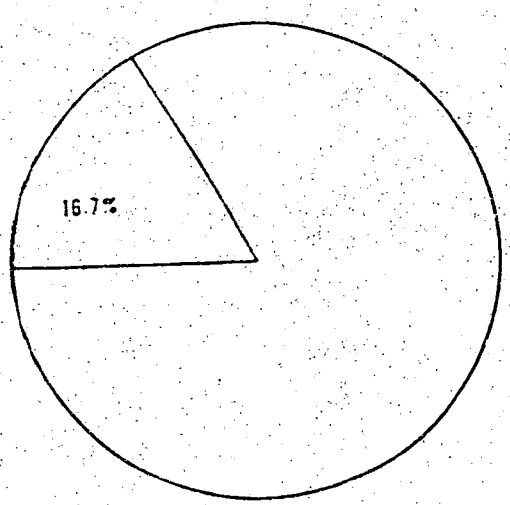
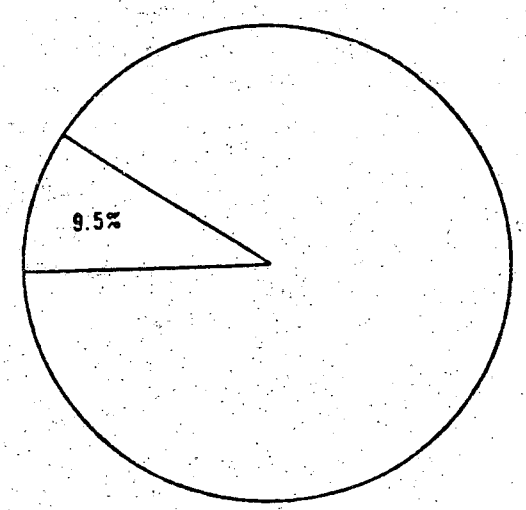
Figure 1 (continued)

Thefts of $1 or more

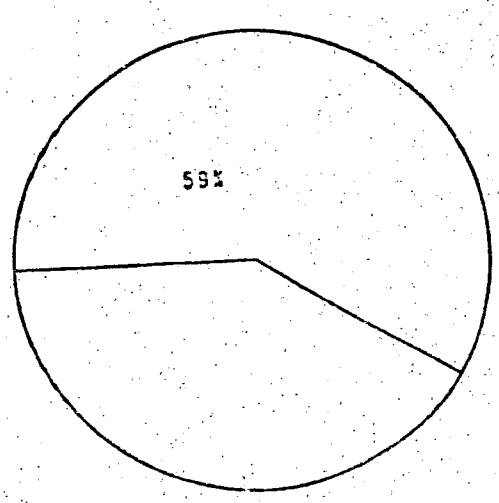


big city

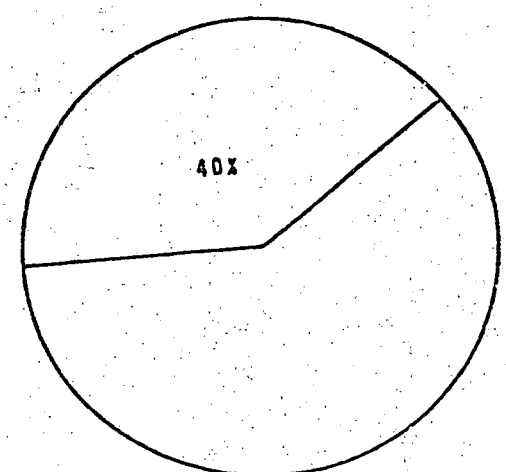


rural

Swearing or obscene gestures



big city



rural

ple. Evidence in the Safe School Study report (National Institute of Education, 1978, Ch. 3), implies that boys are victimized much more than are girls, and that boys are usually victimized by boys and girls by girls.

In short, the typical experience of personal victimization in schools is of a minor incident. Serious victimizations are rare. But the frequency of minor victimizations and indignities, and public and student opinion about school disorder, imply that these kinds of victimizations are major social problems.

Previous Research

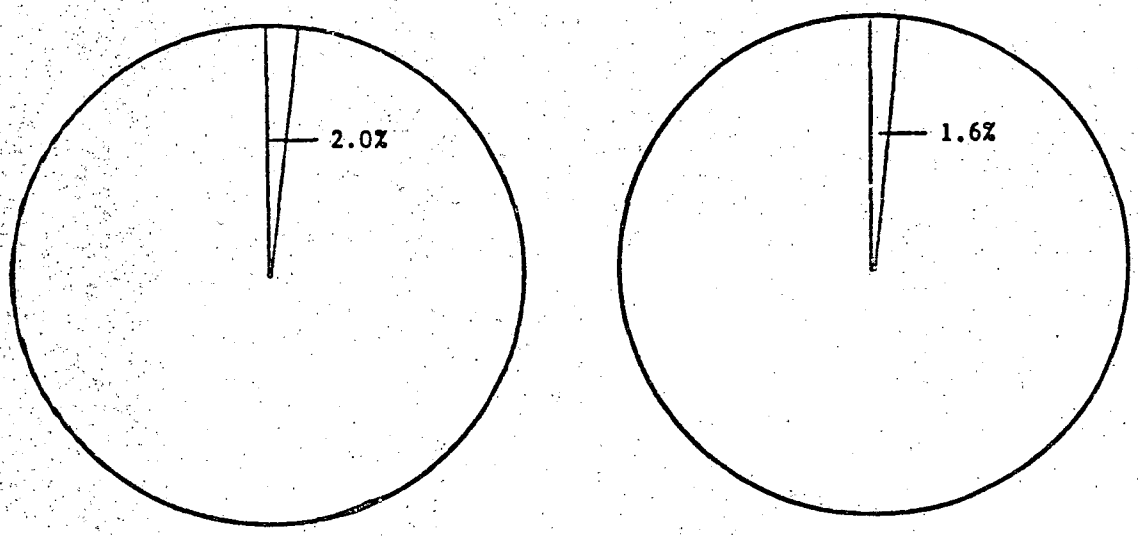
Our earlier research on the correlates and causes of school disruption (Gottfredson & Daiger, 1979), and the National Institute of Education research (NIE, 1978), has examined the correlates of rates of "violence" in schools. NIE used a composite of the percentage of students robbed and the percentage attacked in the past month as its measure of violence (NIE, 1978, Appendix A). Our research involved an examination of the correlates of two scales--one measuring teacher victimization and the other measuring student victimization (Gottfredson & Daiger, 1979, Ch. 4). Our earlier research implied that rates of victimization in schools are strongly related to the characteristics of the community within which the schools are located, and that school governance and climate also appear important in determining rates of victimization.

The precise meanings of the earlier research, however, are dependent upon our understanding of the nature of the

Figure 2

Percentage of Students Reporting Various Events
(typical month, source: NIE, 1977, student interviews)

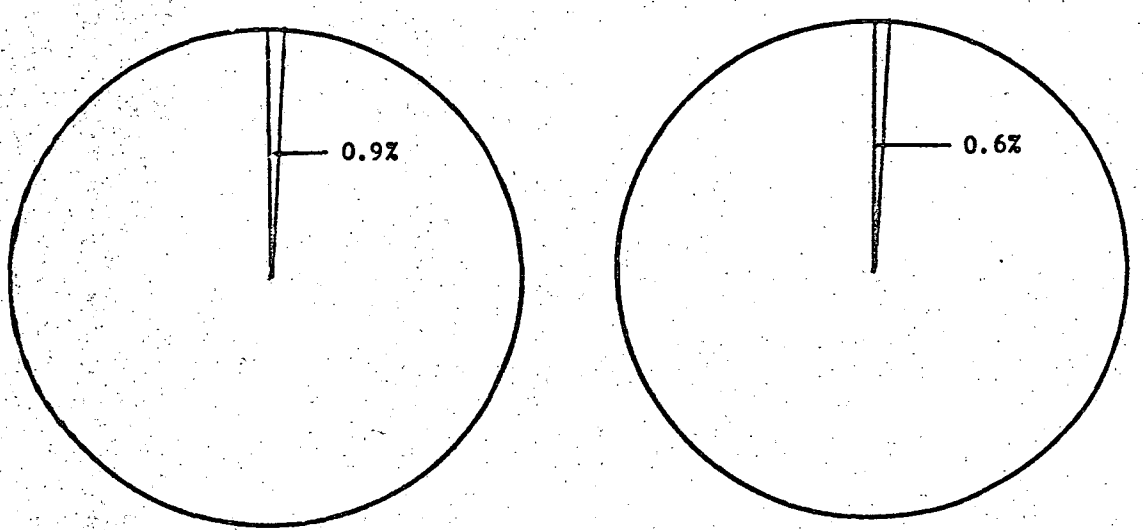
Physical attacks



big city rural

(Note: Rates are lowest in small cities--0.9%--and highest in suburbs--2.4%. About 0.1% experience an injury serious enough to result in a doctor visit.)

Robbed--any amount

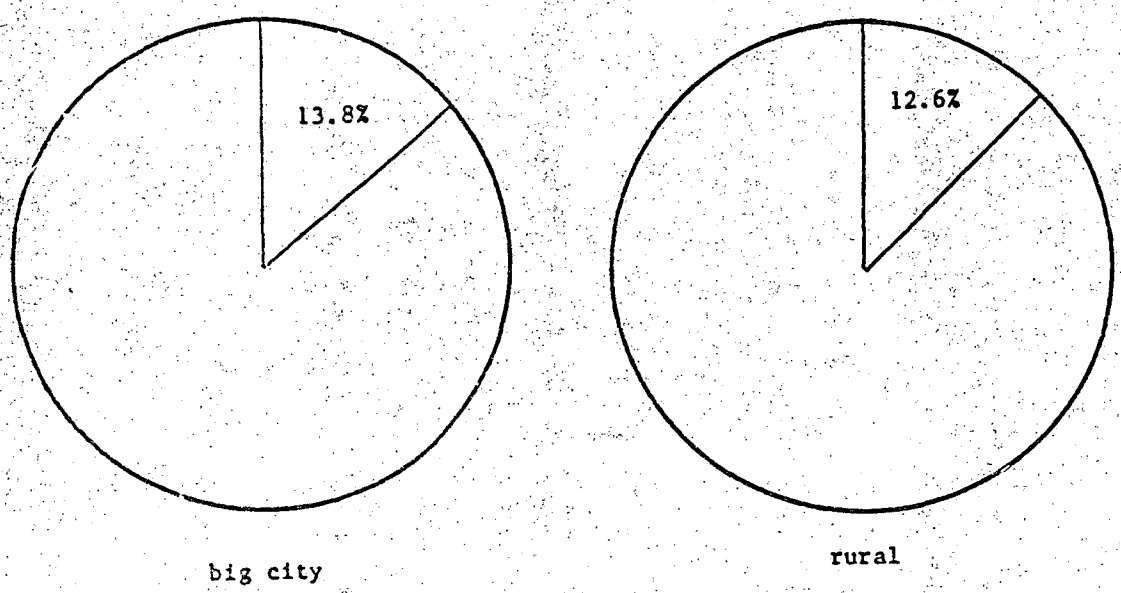


big city
(Note: only 0.1% robbed of $1 or more)

rural
(Note: only 0.1% robbed of $1 or more)

Figure 2 (continued)

Thefts of $1 or more



victimization measures. Several considerations imply that this issue requires more careful scrutiny.

First, the victimization data collected in different ways in the Safe School Study resulted in discrepant measures of the absolute levels of victimization in schools (NIE, Volume 2, Appendix C). The student questionnaire method generally produced much higher estimates than the student interview. For teachers the discrepancies were smaller or not reliable for the more serious incidents, but were reliable and sizeable for the minor incidents (i.e., thefts of under $10). The NIE report (1977, p. 27) states that, although the levels of victimization derived from questionnaire and interview sources differ, variations among students and schools correspond more closely. This statement suggests that the two kinds of measures correlate highly with each other, although the evidence to support this conclusion is not presented. Careful examination of the correlations among measures of victimization based on alternative sources of information is required.

Second, measures of school victimization levels derived from students show low (positive) correlations with other measures of school disruption levels. Specifically, levels derived from aggregated teacher victimization reports or principal ratings of the seriousness of school theft, vandalism, and attacks show only low correlations with student victimization reports (Gottfredson & Daiger, 1979). These correlations, which are much smaller than the reliabilities of the teacher and student victimization measures, imply

that different things are being measured, and that the meaning of different measures of school disruption may be markedly different.

Third, boys and girls experience disparate rates of victimization. The percentage of boys attacked is 2.6 times greater than girls according to the student questionnaire reports, and 2.3 times greater according to the interview data, and results for robberies are also disparate (NIE, 1978, p. 100). Rates for boys and girls may vary in similar ways across schools, or they may not. This issue requires scrutiny.<2>

Fourth, despite some examination of cross-race victimization experiences in the NIE (1978) report, no thoroughgoing attempt to examine black and white school victimization rates has yet been made. Because of the central importance of race in American society, and because of concern about the quality of social interaction in desegregated schools, it is important to know if a single ecological measure adequately represents the experience of both blacks and whites in schools.

Finally, several community and school characteristics (percentage non-white, proportion of families on welfare, and teacher and principal estimates of student ability) that are closely linked to school racial composition are among the highest correlates of student victimization rates. It is not clear why this pattern emerges, and it is a trouble-

---

2. The possibility that pooling boys' and girls' reports in creating aggregate-level measures of victimization may create unclear criterion measures was suggested by Jackson Toby in personal communication.

some and difficult result to understand. Do students in predominantly black schools really victimize teachers more than do students in schools which are predominantly white? If so, why do the students not also inform us of more victimization? It is possible that poor measurement of the student victim experiences account for the pattern of results. Alternatively, white teachers may in certain circumstances perceive certain behavior as more offensive when performed by a black than the same behavior performed by a white. Duncan (1976) has presented evidence that this kind of differential perception is possible, and he provides a theoretical account of how the use of categories or personal constructs (Kelly, 1955) may be involved in the generation of stereotyped perceptions. These alternative explanations require examination.

Research Questions

One purpose of the present research is to examine the reliability and construct validity of several potential measures of school disruption available in the Safe School Study's data. The psychometric properties and degree of convergence of victim reports, aggregated separately by race and sex, are examined. And, measures based on interview and questionnaire data are examined to determine whether they show the same patterns of correlations across schools. A second purpose of this research is to explore some consequences of alternative victimization measures for the substantive interpretation of research results in the explanation of school disruption.

Methods--General Overview

Data

Information used was collected in 1976 from a national sample of 642 public secondary schools as part of NIE's (1978) Safe School Study. Specifically, use was made of questionnaire and interview data provided by principals, teachers, and students in phase II of that study (see NIE, 1978, Vol. 2), of student interview data, and of 1980 census data about the communities within which the schools were located.<3> Principal questionnaires were available for 623 schools, teacher questionnaires for 623 schools, student questionnaires for 621 schools, student interviews for 618 schools, and census data for 642 schools. Response rates for the questionnaire and interview data used are shown in Table 1. For teachers and students, participants as a percentage of eligible persons are shown; for principals, participants as a percentage of schools in the sample are shown.

The Safe School Study employed a complex sampling design that would enable nationally representative estimates with appropriate weighting had participation rates been 100%. Due to extensive nonresponse, however, such weighting would not result in a truly representative sample--biases of an unknown nature would be present. Our research uses

---

3. No use was made of the incident reports because those data were collected in such a way that it is impossible to determine whether a school experienced no incidents or simply failed to send in the report, and too few teacher telephone interviews were conducted to enable useful school-level analyses.

Table 1

Response Rates for Questionnaires and Interviews in the Study

Instrument	Response rate	Avg. no. per school
Principal questionnaire	73[a]	1
Teacher questionnaire	76	37
Student questionnaire	81	49
Student interview	83	10

[a] 623 of 851 schools in the sample. Of participating schools (642) the response is 97%.

unweighted data. For details of the sample design see Volume 2 of the NIE (1978) report.

Most of the measures used in the present research were developed earlier by Gottfredson and Daiger (1979). These measures are scales that were developed after consulting factor analyses of various domains of community, school, and studentry characteristics. All are school-level measures based on aggregate data. They were designed to represent the following domains of school characteristics: (a) community environment, (b) school compositional characteristics which are largely beyond the control of the school, (c) school size, staffing, and resources, and (d) school social organizational characteristics including governance, educational climate, and social climate. Readers are encouraged to consult our earlier report for a description of the development and psychometric properties of these measures, and for documentation of the item content of each scale.

Level of Analysis

All analyses are conducted at the school level. Individual-level data are always, as a first step, aggregated to the school level before any further analyses are performed. We focus on school-to-school variation in rates of disruption and attempt to specify characteristics of schools that are related to these rates. This focus accords with the human ecology tradition (Hawley, 1950) in treating schools--not individuals--as the objects of interest. Our concern here is with schools as human aggregates rather than as settings where individual-level processes are played out.

Naturally, many of our results raise interesting questions for researchers with a reductionistic bent who may wish to pursue research and theory at a lower level, but implications of the research reported here for individual processes are ambiguous (Robinson, 1950; Cove & Hughes, 1980) and we do not directly address them.

School effects researchers are frequently concerned with the extent to which variation observed at the school level can be "explained" by aggregated individual-level processes. They might try to decompose the effects of school-level predictors on rates of disruption into "compositional" effects and "contextual effects." Compositional effects are due to group-level consequences of individual-level processes and are observed simply because students are not placed in schools according to a random process. For instance: If, at the individual level, consorting with prosocial others and receiving good grades reduce one's chance of being victimized, then we would expect schools with high proportions of prosocial others and students who receive high grades to have lower rates of victimization. This type of school effect would be regarded by some as an aggregated individual-level process rather than as a true school-level process.

It is desirable to decompose regression coefficients into their compositional and contextual components if the objective is to obtain estimates of the impact of the social structure on <u>individuals</u> that are not confounded by the aggregate attributes of individuals--attributes which are

largely beyond the control of the school (Firebaugh, 1979). Because we are examining only between-school variation, such an adjustment is unnecessary.

One might also be inclined to decompose the school-level regression coefficients if one were interested only in those characteristics of the school whose between schools variation could not be explained by aggregated individual-level processes. We do not define school effects in this way. Many aggregate individual characteristics can indeed be influenced by changes in school policies and should not be adjusted out of the analyses. For example, schools whose students believe in conventional social rules and feel in control of their destinies experience less disruption (Gottfredson & Daiger, 1979). Although this observation may illustrate a compositional rather than a contextual effect, the distinction is irrelevent if schools can somehow alter their students' levels of belief in conventional rules and feelings of control. An observed relation between these aggregated individual characteristics and school disruption would provide evidence that attempts to reduce disruption levels should focus on altering these characteristics. The purpose of our program of research is to uncover such possible links between disruption and school characteristics, regardless of whether the link is due to "true" school-level processes or aggregate individual-level processes.

Analyses

Analyses are of several types. The victimization measures developed in our earlier research (Gottfredson & Daiger, 1979, Ch. 4) are supplemented by developing several new indexes. The reports of personal victimization from the student interviews are aggregated to the school level. In addition, the teacher and student questionnaire reports of personal victimization are aggregated separately for males and females, and for blacks and whites. The correlations among various scales intended to measure school victimization are examined, and their reliabilities estimated.<4> As one way of determining whether the various measures appear to be measuring only the same construct, disattenuated correlations are computed for certain scales.<5> The patterns of correlation of some alternative measures of victimization with variables found to correlate with teacher or student victimization in earlier research are also examined.

---

4. Scales were constructed by summing standard scores for the aggregated items of which they are composed. Because item variances equal one, the reliability coefficients are estimated by

$$\rho^2_{TX} = \frac{I}{I-1}\left(1 - \frac{I}{\sigma^2_X}\right)$$

where I is the number of items in the scale.

5. Spearman's correction for unreliablity was used to estimate the correlation between hypothetical true scores.

$$\rho_{T_{X_1}T_{X_2}} = \frac{\rho_{X_1X_2}}{\rho_{T_{X_1}X_1}\,\rho_{T_{X_2}X_2}}$$

Finally, the importance of alternative measurement models for attempts to understand and explain school disruption are explored using confirmatory factor analysis in the context of linear structural equation models of victimization (Jöreskog & Sörbom, 1978).<6> In the final part of the research, earlier exploratory factor analyses guided the specification of a measurement model for school characteristics. First one and then another measurement model for school victimization is specified and the alternative models compared with respect to their fit to the data. This examination of models with different assumptions about the underlying structure of victimization is intended to (a) determine whether the data accord with the assumption that school victimization is a unitary construct that may be explained by a single explanatory model, and (b) provide insight into the ways major dimensions of school environments are related to school victimization.

Results

Student Interview Measures

As noted earlier, few student interviews were conducted per school. In junior high schools, the number ranged from 7 to 17 (mean = 10.7), and in senior high schools the number ranged from 2 to 17 (mean = 9.6). These small N's imply that school-level aggregates are likely to have low reliability. Furthermore, the number of students interviewed per school is not independent of several school characteris-

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6. Specific details of the method appear at the appropriate place later in this report.

tics. Some correlates of the number of students interviewed with several school characteristics are shown in Table 2 (see Gottfredson & Daiger, 1979, for a description of the other variables in the table). Taken together, the correlations shown here suggest that more interviews were conducted in schools that may be regarded as more pleasant places to conduct interviews. This would introduce some bias into these data.

The correlations (not shown) among the aggregated items from the student interviews are generally quite low. Nevertheless we attempted to create a scale by adding together the standard scores for the following aggregated student interview victimization items: (a) In (the last two months) did anyone force you to hand over money or things worth less than a dollar while you were at school, going to or from school, or at a school event held off school grounds? (b) In (the last two months) did anyone take money or things worth a dollar or more directly from you by force, weapons, or threats while you were at school, going to or from school, or at a school event held off school grounds? (c) In the same 2 months, did anyone TRY to take anything directly from you by force, weapons, or threats without succeeding while you were at school, going to or from school, or at a school event held off school grounds? (d) Other than the incidents we have already talked about, did anyone attack you physically and hurt you in (the last two months) while you were at school, going to or from school, or at school events held off school grounds? (e) Other than the

Table 2

Correlations of Number of Students Interviewed with Other School Characteristics for Junior and Senior High Schools

School Characteristic	Junior	Senior
Impoverished and disorganized community	-04	-19**
Affluent, educated community	13*	09
Percentage students white	10	23**
Parental SES and self-reported ability	13*	03
Social and educational disadvantage	-04	-20**
Percentage of teachers white	13*	18**
Number of different students taught	14*	06
School attachment	16**	00
Good race relations	18**	00
Mean grade point average	18**	02
Teacher victimization	01	-16**
Student victimization (questionnaire)	-06	-15**

Note. Decimals omitted. N's for junior highs range from 256-307 schools. For senior highs, N's range from 254-311 schools.

*p<.05
**p<.01

incidents we have already talked about, did anyone TRY to attack you physically without succeeding in [the last two months] while you were at school, going to or from school, or at a school event held off school grounds? (f) In [the last two months] did anyone steal anything of yours from your desk, locker, or other place at school?

Student and Teacher Questionnaire Measures

Scales were also created by aggregating the student questionnaire and teacher questionnaire victimization items separately for males and females, and blacks and whites. These aggregates were used to create student and teacher victimization scales that paralleled the scales built earlier (Gottfredson & Daiger, 1979).<7> That is, the same items were used, but each scale only applies to the aggregated reports of white teachers, black teachers, and so on. In addition, because most victimization experienced by teachers is trivial in nature (see Figure 1), and because of our concern that the teacher victimization scales would therefore be measuring mostly nuisance events or minor indignities, scales measuring only serious teacher victimization experiences were also constructed. Only robbery, theft, or physical attack were included.<8> It is possible, of course, that many of these incidents were also relatively minor, but this does exclude the high frequency remarks or gestures, threats, and incidents where teachers feared for their safety.

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7. See page 50 of that report.

8. Rape was so rare it was not used as an item.

Correlations among the alternative measures of victimization are shown in Table 3 for junior (above the diagonal) and senior (below) high schools. Note that many of the entries in this table are part-whole correlation--boys are a subset of all students, for example.

The student interview estimates (not aggregated for subgroups because of the small number of interviews per school) have low or negligible correlations with the other measures. Even though the students interviewed are a subset of those responding to the questionnaire, the correlations between the interview-based and questionnaire-based measures are only .42 and .30 for junior and senior high schools, respectively.

Other correlations in Table 3 are of special interest. However measured, student and teacher victimization measures have low or negligible correlations. Black student victimization has positive but tiny correlations with white student victimization, and boys' victimization correlates only .40 and .15 with girls' victimization in junior and senior high schools, respectively. The correlations of black and white teacher victimization are only moderate.

Reliabilities

The Table 3 results are, of course, correlations among fallible measures. The measures are not perfectly reliable, and correlations less than 1.0 are to be expected. Even alternative measures of an identical construct do not correlate perfectly if they incorporate measurement error. Because all of these estimates are based on small numbers of

Table 3

Correlations Among Alternative Measures of Student and Teacher Victimization for Junior and Senior High Schools

Group and method	Students: Questionnaire: All	Students: Questionnaire: Boys	Students: Questionnaire: Girls	Students: Questionnaire: Whites	Students: Questionnaire: Blacks	Students: Interview	Teachers: All types: All	Teachers: All types: Men	Teachers: All types: Women	Teachers: All types: Whites	Teachers: All types: Blacks	Teachers: Serious: Men	Teachers: Serious: Women	Teachers: Serious: Whites	Teachers: Serious: Blacks
Student questionnaire															
All students	--	85**	79**	48**	35**	42**	19**	19**	18**	23**	05	19**	23**	28**	-02
Boys	84**	--	40**	40**	33**	36**	13*	13*	12*	15**	02	11*	15**	18**	-02
Girls	57**	15**	--	40**	24**	33**	19**	18**	16**	21**	05	18**	21**	26**	-03
Whites	66**	58**	38**	--	06	23**	26**	29**	22**	28**	16*	14*	09	15**	03
Blacks	26**	17*	18**	03	--	06	01	00	-03	01	-05	04	00	07	-02
Student interview															
All students	30**	29**	04	29**	-03	--	15**	17**	16**	18**	-04	18**	24**	23**	-06
Teacher questionnaire															
Including indignities															
All	21**	18**	03	19**	-02	22**	--	87**	92**	95**	66**	65**	69**	76**	42**
Men	19**	19**	01	22**	-02	24**	86**	--	66**	82**	60**	83**	46**	68**	44**
Women	20**	14*	01	15*	-03	28**	88**	61**	--	88**	58**	44**	80**	70**	30**
Whites	22**	17**	03	21**	-01	29**	95**	86**	84**	--	44**	62**	66**	84**	23**
Blacks	14*	14*	05	24**	01	06	57**	48**	46**	38**	--	44**	36**	27**	76**
Serious events only															
Men	14*	15*	01	21**	01	16**	66**	82**	42**	66**	39**	--	41**	70**	46**
Women	15*	08	01	04	02	19**	65**	34**	82**	61**	29**	30**	--	77**	25**
Whites	20**	16**	02	18**	04	22**	81**	74**	71**	85**	31**	80**	69**	--	15**
Blacks	16*	19**	00	20**	-01	00	39**	32**	25**	20**	76**	44**	24**	27**	--

Note. Decimals omitted. Correlations above the diagonal are for junior high schools (N=203-311); correlations below the diagonal are for senior high schools (N=188-312).

* $p < .05$

** $p < .01$

teachers or students, especially for the subgroup measures, measurement error may be great.

Reliability estimates are shown in Table 4. None are high, and some are low. The reliabilities of the senior high school student measures are usually lower than for junior high schools (probably largely because victimization is less frequent in senior high schools, NIE, 1978). The reliability estimates for the interview-based measures are low, reliabilities for black teacher victimization are modest, and the reliabilities of the serious teacher victimization measures are also low.

Construct Validity

One way of assessing whether two alternative measures are measuring the same latent variable, or whether they are in part measuring more than one factor, is to estimate the correlations between hypothetical underlying true scores. Classical true score theory postulates that a score is equal to the sum of two parts--true score and error. The error is random and uncorrelated with the true score. True scores are systematic. The true score model is usually written

$$X_i = T_i + e_i,$$

but it is possible to think of the true score as being composed of more than one underlying construct or factor. The principal component model can be written

$$X_i = \Sigma a_j T_{ij} + e_i.$$

This model assumes that a variable may be composed of more than one true score (shared with other observed variables)

Table 4

Reliability Estimates for Victimization Measures

Group and method	Junior high alpha	Junior high Average persons per school	Senior high alpha	Senior high Average persons per school	Number of items
Student questionnaire					
All students	.78	53	.69	48	5
Boys	.70	26	.65	24	5
Girls	.77	26	.56	24	5
Whites	.73	35	.40	34	5
Blacks	.59	10	.68	11	5
Student interview					
All students	.46	11	.26	10	6
Teacher questionnaire					
Including indignities					
All	.77	30	.75	46	7
Men	.69	14	.71	25	7
Women	.72	16	.73	21	7
Whites	.77	26	.78	39	7
Blacks	.63	6	.64	8	7
Serious events only					
Men	.45	14	.51	25	3
Women	.40	16	.37	21	3
Whites	.54	26	.51	39	3
Blacks	.39	6	.42	8	3

and error. When the correlations between two variables--say male and female victimization reports--are corrected for error variance, and are found to be substantially less than one, we may assume that each measures something other than what they measure in common. In other words, we may speculate that more than one underlying factor is responsible for the systematic variance in one or both of the measures.

Correlations that have been corrected for measurement error (when reliability is low, error is high) are shown in Table 5 for selected pairs of measures. With few exceptions, considering these pairs to be alternative measures of the same underlying variables would be unwise. It appears that, although they are highly unreliable, the student interview measures do measure mostly the same thing(s) as the student questionnaire measures, but it is highly likely that the interview and questionnaire measures each also systematically measures something that they do not measure in common. (The present results do not provide any particular clues about what those "somethings" may be.) In short, on the basis of the Table 5 results, the victimization measures appear factorially complex, and it appears that black and white student victimization measures, male and female victimization measures, and black and white teacher victimization measures in part measure different underlying dimensions.

The assessment of the meanings of the alternative victimization measures is difficult using the Safe School Study data because essentially all of the measures of school dis-

Table 5

Disattenuated Correlations between Selected Measures of Student and Teacher Victimization

Victimization measure	Junior high	Senior high
Student questionnaire		
Boys' with girls'	.54	.25
Whites' with blacks'	.09	.06
Student questionnaire and student interview		
All students'	.70	.71
Student and teacher questionnaires		
All teachers' with all students'	.24	.29
Student interview and teacher questionnaire		
All teachers' with all students'	.25	.50
Teacher questionnaire		
Including indignities		
Men's with women's	.94	.85
Blacks' with whites'	.63	.54
Serious events only		
Men's with women's	.97	.69
Blacks' with whites'	.33	.58

Note. Correlations have been "corrected" for measurement error to estimate the correlations between hypothetical "true" scores, using homogeneity coefficients and Spearman's correction for attenuation.

ruption are self-reports of personal victimization. No good self-reported delinquency data were collected in the study, nor were direct observations of incidents in the school made.<9> As one means of determining the convergence of the various victimization measures being examined here with other measures of school disruption, however, the correlations of these measures with two other variables are of special interest. Table 6 shows correlations with an aggregated variable that comes close to being a self-report delinquency measure--students' reports that they bring something to school to protect themselves. And, Table 7 shows correlations with the principal's report about the seriousness of school vandalism, attacks, and thefts. These two variables tend to correlate most highly with the teacher measures, and there are some interesting patterns in the results for subgroups in Table 6. The most important of these is that black student victimization correlates .35 and .44 with black students' reports of carrying something to protect themselves, but that this latter measure has near zero correlations with white student victimization and all measures of teacher victimization. The highest correlations with all types of teacher victimization are girls' reports of carrying a weapon for self-defense. Attempts at interpretation of these results would necessarily be highly speculative, and we shall resist the temptation.

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9. Principals' reports of incidents were collected. We have not used them here because the data were collected in such a way that distinguishing non-responses from cases of no incidents to report is not possible, and we have not yet figured out how to cope with that obstacle.

Table 6

Correlations Between Victimization Measures and a Self-Report Misconduct Item

Victimization Measure	How often do you bring something to school to protect yourself: Junior Boys	Junior Girls	Junior Whites	Junior Blacks	Senior Boys	Senior Girls	Senior Whites	Senior Blacks
Student questionnaire								
All students	36**	10	17**	14*	20**	17**	17**	04
Boys	29**	03	10	15*	19**	13*	19**	04
Girls	31**	15**	20**	08	00	04	-02	-05
Whites	17**	09	16**	04	18**	15**	26**	01
Blacks	16*	-10	00	35**	05	-07	-02	44**
Student interview								
All students	19**	16**	06	13*	16**	16*	19**	06
Teacher questionnaire								
Including indignities								
All	26**	39**	20**	07	20**	43**	26**	06
Men	26**	33**	21**	10	19**	40**	30**	11
Women	24**	36**	20**	04	22**	44**	23**	05
Whites	23**	39**	18**	07	25**	41**	33**	06
Blacks	15**	20**	12	02	-01	21**	-01	06
Serious events only								
Men	21**	15**	14*	06	12*	20**	22**	06
Women	16**	13*	13*	00	12*	31**	10	04
Whites	16**	18**	13*	03	21**	28**	26**	04
Blacks	12	02	09	-04	-03	09	-01	05
N's (range)	211-310	211-310	202-301	188-246	216-307	217-308	200-291	191-223

Note. Decimals omitted.

* $p < .05$

** $p < .01$

Table 7

Correlations Between Victimization Measures and Principal's Report of Seriousness of the Problem of Vandalism, Personal Attack, and Theft in the Past Year

Victimization measure	Junior	Senior
Student questionnaire		
All students	.13*	.09
Boys	.10	.02
Girls	.14*	.06
Whites	.09	.03
Blacks	-.05	-.06
Student interview		
All students	.14*	.02
Teacher questionnaire		
Including indignities		
All	.33**	.35**
Men	.28**	.30**
Women	.32**	.38**
Whites	.31**	.31**
Blacks	.24**	.15*
Serious events only		
Men	.19**	.12*
Women	.21**	.3?**
Whites	.24**	.20**
Blacks	.08	.05
N's (range)	202-296	207-296

*p<.05

**p<.01

The Table 6 and 7 results do provide some evidence that the teacher victimization measures (especially) are related to some independent measures of school disruption. The evidence about the student victimization measures is more ambiguous.

One concern in assessing the meaning of the victimization measures is that they may be measuring not only victimization, but also differential social perception of victimization. For example, if white teachers perceive the same behavior as more serious or threatening when performed by black youth than when performed by white youth, then we may wish to regard the "victimization" measure as also partly a measure of stereotyped social perceptions. The positive correlation between percent black of the studentry and teacher victimization (Gottfredson and Daiger, 1979) could be interpreted as reflecting social perception. Table 8, which documents levels of black and white reports of robbery and attack in schools of differing racial composition, implies that such an interpretation may be too facile. On the whole, both black and white teachers report more robbery and attack in predominantly black schools. (The anomolous bimodal distribution for black teachers' reports of attacks is an interesting puzzle.)

As we have already noted, no direct measures of actual behavior were made in the Safe School Study. In addition, no clear measures of stereotyped social perception are available. Yet the assessment of the possibility that stereotyped perception influences the victimization reports, espe-

Table 8

Mean Percentage of White and Black Teachers Attacked and Robbed by Racial Composition of the Studentry

	Robbery				Attack			
Percentage students white	White	N	Black	N	White	N	Black	N
0-20	1.69	69	2.09	68	2.67	69	2.01	68
20-40	.66	34	1.57	33	2.14	34	.61	33
40-60	.43	80	.60	75	1.02	80	.68	75
60-80	.50	99	.61	95	.52	99	1.51	94
80-100	.43	331	.04	177	.27	331	.28	177

Note. Columns headed N indicate the number of schools on which the mean is based.

cially for teachers, is important because the racial composition of the studentry is a strong correlate of teacher victimization reports. As one (somewhat unsatisfactory) way of examining this issue, the correlations in Table 9 are presented. This table shows the correlations of white and black teacher victimization with teacher reports of school race relations, student ability and achievement, and racial composition. If white, but not black, teachers' reports of students of low ability correlated with victimization reports, then we would have evidence consistent with the social perception hypothesis. Or, if reports of school race or social relations were correlated with victimization reports only for white teachers, the social perception hypothesis would receive some support. Unfortunately, results are not clear-cut. The correlation of studentry racial composition with black teacher victimization is lower than for white teachers, but recall that the measures for black teachers are somewhat less reliable. And, although reports of school race relations are more strongly correlated with white than with black teacher victimization, differential reliability remains a potential explanation. These psychometric difficulties and the unavailability of appropriate data in the Safe School Study leave the important issue of the extent to which stereotyped perceptions influence teacher victimization reports unresolved.

In summary, regarding victimization in schools as a unitary construct is not the most productive way to proceed. The victimization measures for boys, girls, black students,

Table 9

Correlations between Black and White Teacher Reports about their Schools and Teacher Victimization Measures for Junior High Schools

Predictor and group	Junior			Senior		
	White	Black	All	White	Black	All
White teachers						
How well do students of different races get along	-.52**	-.35**	-.51**	-.35**	-.14*	-.36**
How well do students of different socioeconomic groups get along	-.41**	-.26**	-.39**	-.33**	-.20**	-.36**
How well do teachers and students get along	-.62**	-.40**	-.63**	-.63**	-.27**	-.60**
What percentage of the students you teach are black	.62**	.31**	.60**	.63**	.26**	.53**
What percentage of the students you teach are low ability	.48**	.34**	.50**	.67**	.33**	.63**
What percentage of the students you teach are underachievers	.44**	.30**	.45**	.62**	.31**	.58**
N's (range)	302-309	207-209	292-299	307-312	234-239	300-304
Black teachers						
How well do students of different races get along	-.30**	-.27**	-.31**	-.19**	-.14*	-.23**
How well do students of different socioeconomic groups get along	-.15*	-.21**	-.18**	-.05	-.09	-.11
How well do teachers and students get along	-.30**	-.23**	-.34**	-.24**	-.12	-.26**
What percentage of the students you teach are black	.51**	.26**	.49**	.58**	.23**	.49**
What percentage of the students you teach are low ability	.30**	.21**	.33**	.28**	.32**	.28**
What percentage of the students you teach are underachievers	.30**	.26**	.31**	.20**	.22**	.17**
N's (range)	198-210	198-209	192-204	216-239	216-238	211-233

*p<.05

**p<.01

white students, and male and female teachers appear to be reliably measuring distinct dimensions--at least in part.

Alternative Measures and Causal Models

The foregoing implies that attempts to understand the causes of school victimization should take account of the factoral complexity of victimization. It implies that we do not yet fully understand what these victimization scales actually measure. And it implies that different causal processes may determine reports of victimization by different social groups in schools.

In our earlier research (Gottfredson & Daiger, 1979) we used multiple regression to determine whether there was evidence that school practices contribute to the explanation of victimization rates. We decided that the evidence was reasonably persuasive that they do. One might use methods similar to those used in our earlier research to build models of victimization reports by different subgroups. This approach, although useful for providing conservative tests of the independent contribution of blocks of variables, is less useful for learning about the underlying structure of the predictor variables and their effects on disruption. That approach can produce confusing results because extreme multicollinearity makes regression coefficients unstable and therefore makes it difficult to compare

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10. Note that when considering models of the alternative measures of victimization we are <u>not</u> comparing groups. The group is always the <u>same</u> group of schools. Instead, we are studying different <u>criterion</u> variables. Therefore the examination of standardized coefficients is appropriate.

the predictors of alternative criteria.<10>

Here we take a different approach. Guided by exploratory factor analyses of school and community characteristics, we have specified models of victimization which postulate that a small number of underlying factors or "latent variables" cause a larger number of observed measures. Then we postulate that th ; same latent variables determine school victimization rates. We attempt to estimate the contribution of each of these hypothesized underlying causal variables to school victimization, and we do this making different assumptions about the appropriate measurement model for victimization. We use maximum likelihood estimates for parameters in these models and test the "goodness of fit" for alternative models.<11> If a model which postulates more than one latent victimization variable fits the data better than does a model which postulates only a single latent variable, then any model which treats "victimization" as a single construct may be misspecified and therefore misleading.

To provide some structure for the reader, and as a preview of the subsequent subsections, the measurement and structural models considered here are shown in Figures 3 through 10. Figures 3, 5, 7, and 9 refer to senior high schools, and Figures 4, 6, 8, and 10 refer to junior high schools. Tables 10 and 11 supplement these figures by describing the observed variables postulated to measure the

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11. We have used LISREL IV (Jöreskog & Sörbom, 1978) to accomplish this work.

several latent variables in these models. With one exception these measures have been described earlier in this report, or they are described by Gottfredson and Daiger (1979), and so are only briefly described in Tables 10 and 11.<12> In the figures the ksi(n) refer to postulated latent variables which, according to the model, cause both the observed variables taken as measures of them, which are represented as X(p), and the latent variables which underlie the observed measures of victimization. The latent victimization variables are represented as eta(m) and the measures of them as Y(q).

The indicators X(p) and Y(q) for the ksi(·) and eta(m) are selected after performing a series of exploratory factor analyses of victimization measures<13> and school and community characteristics. Plots of eigenvalues and judgments about the substantive interpretability of alternative varimax rotated principal factor solutions guided the specification of these measurement models.

These exploratory factor analyses were followed by confirmatory factor analyses in order to enable the specification of measurement models for victimization and school and

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12. The exception is "Principal Rating." This is a composite of five Likert-type items from the teacher questionnaire in which teachers were asked to describe how friendly, fair, permissive, and informal the principal is, and whether he or she shares decisionmaking (these are components of question 29 in the phase II teacher questionnaire). See NIE (1978, Vol. II) or the appendix to Gottfredson & Daiger (1979).

13. All but one of the items considered by Gottfredson and Daiger (1979) are considered here. Teacher reports of threats were not used to avoid loading up the analysis with a large number of trivial incidents.

Figure 3

Model 1 for Senior High Schools

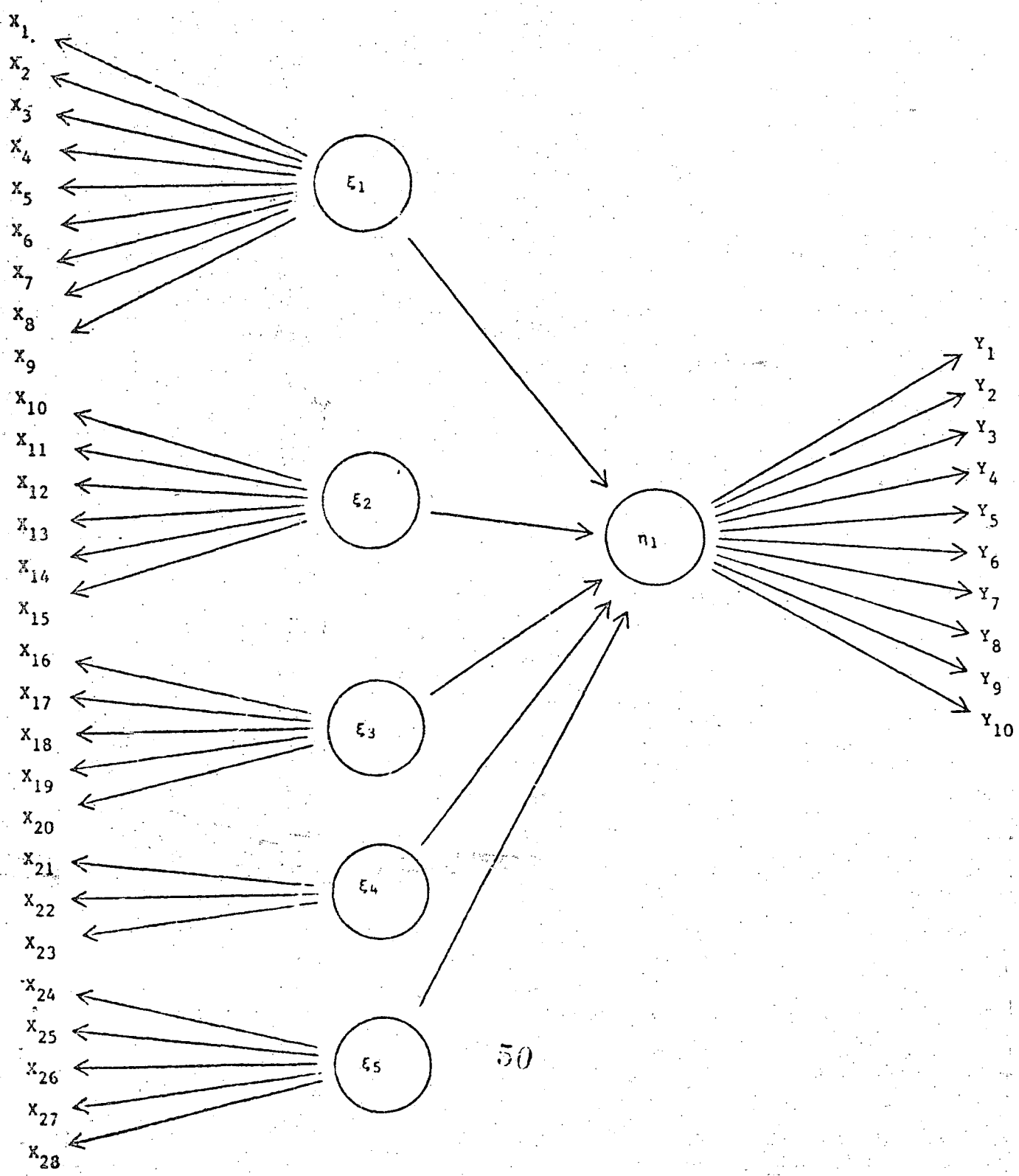

Figure 4

Model 2 for Junior High Schools

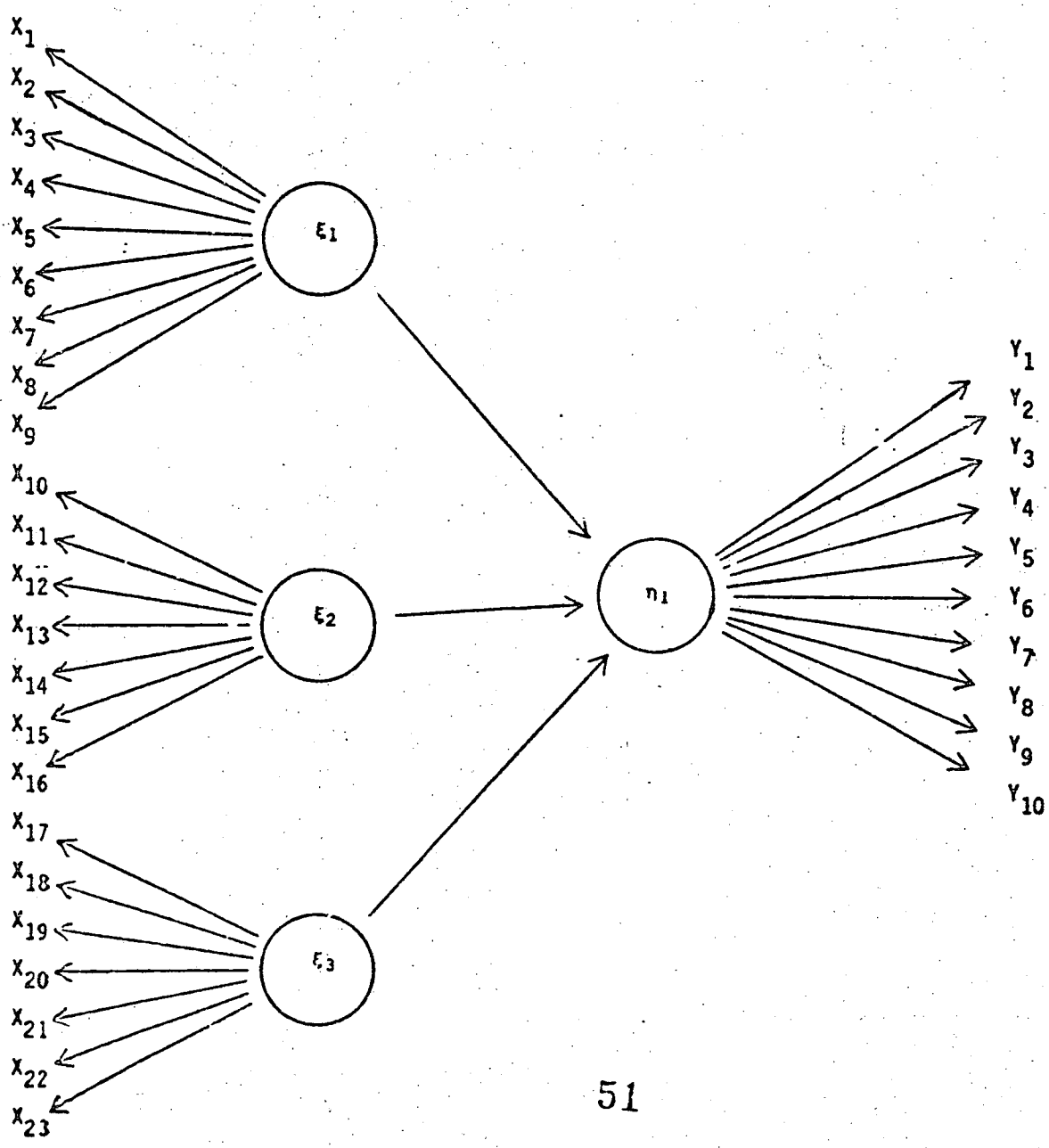

Figure 5

Model 3 for Senior High Teacher Victimizations

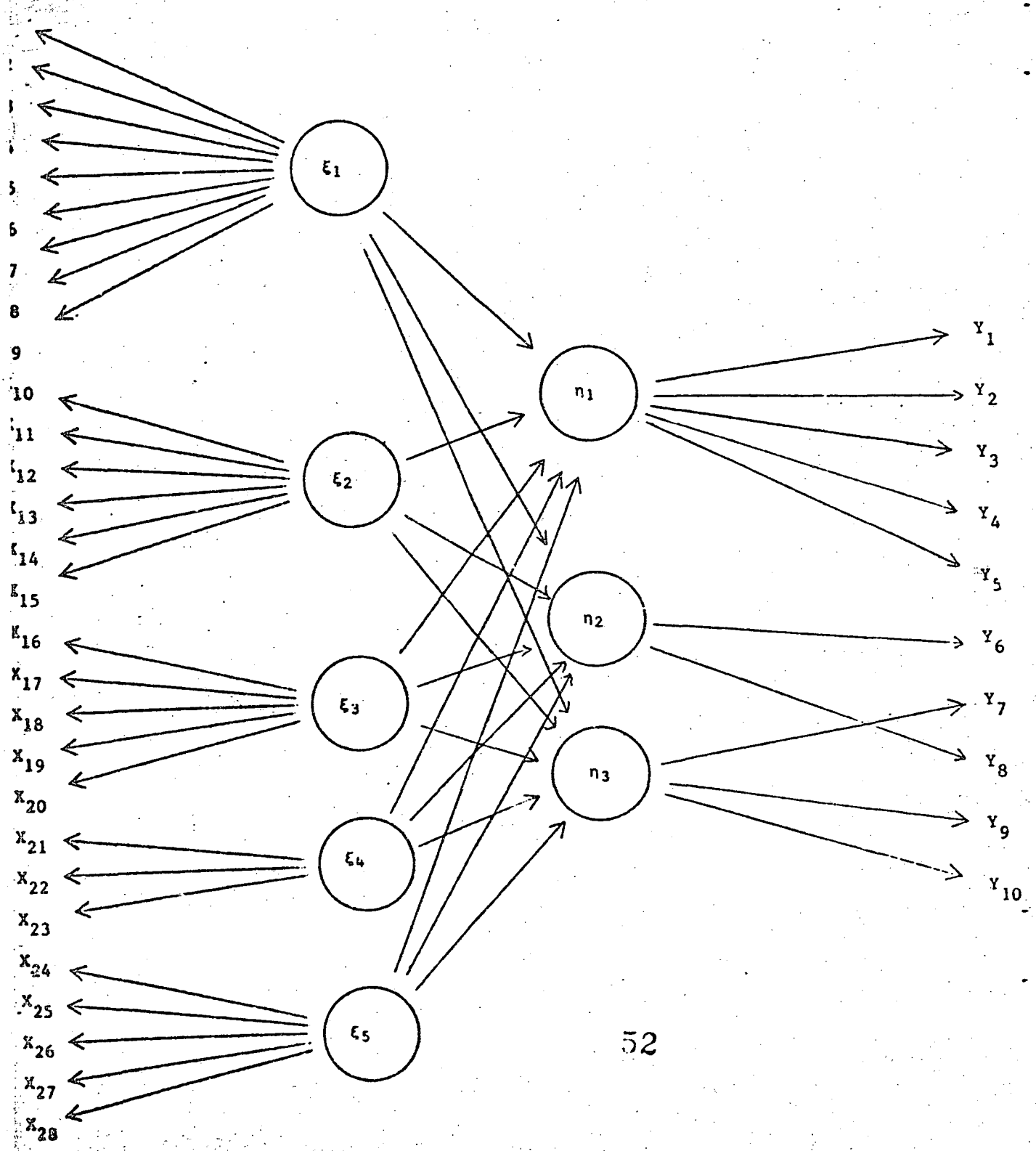

Figure 6

Model 4 for Junior High Teacher Victimizations

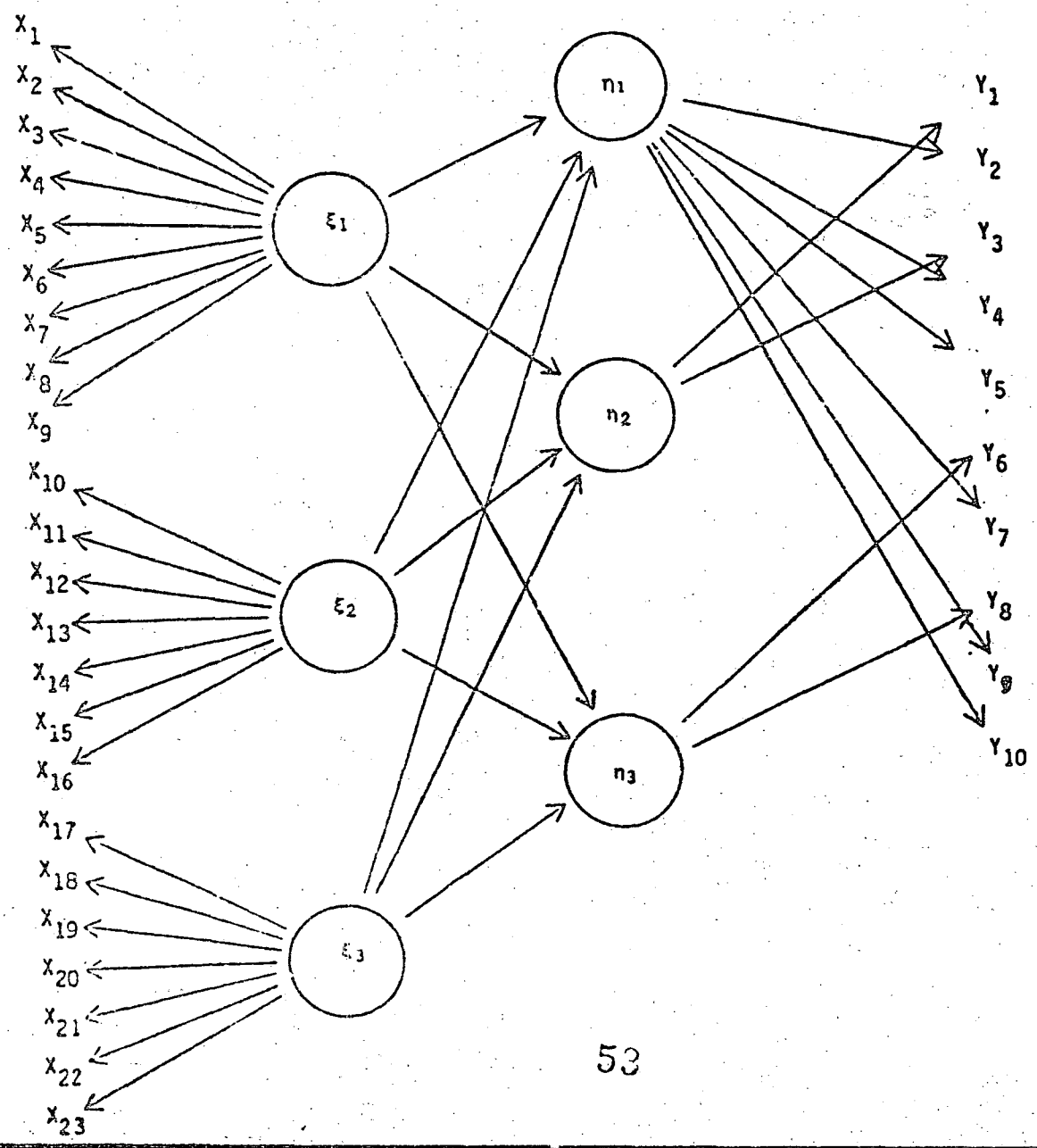

Figure 7

Model 5 for Senior High Male and Female Student Victimization

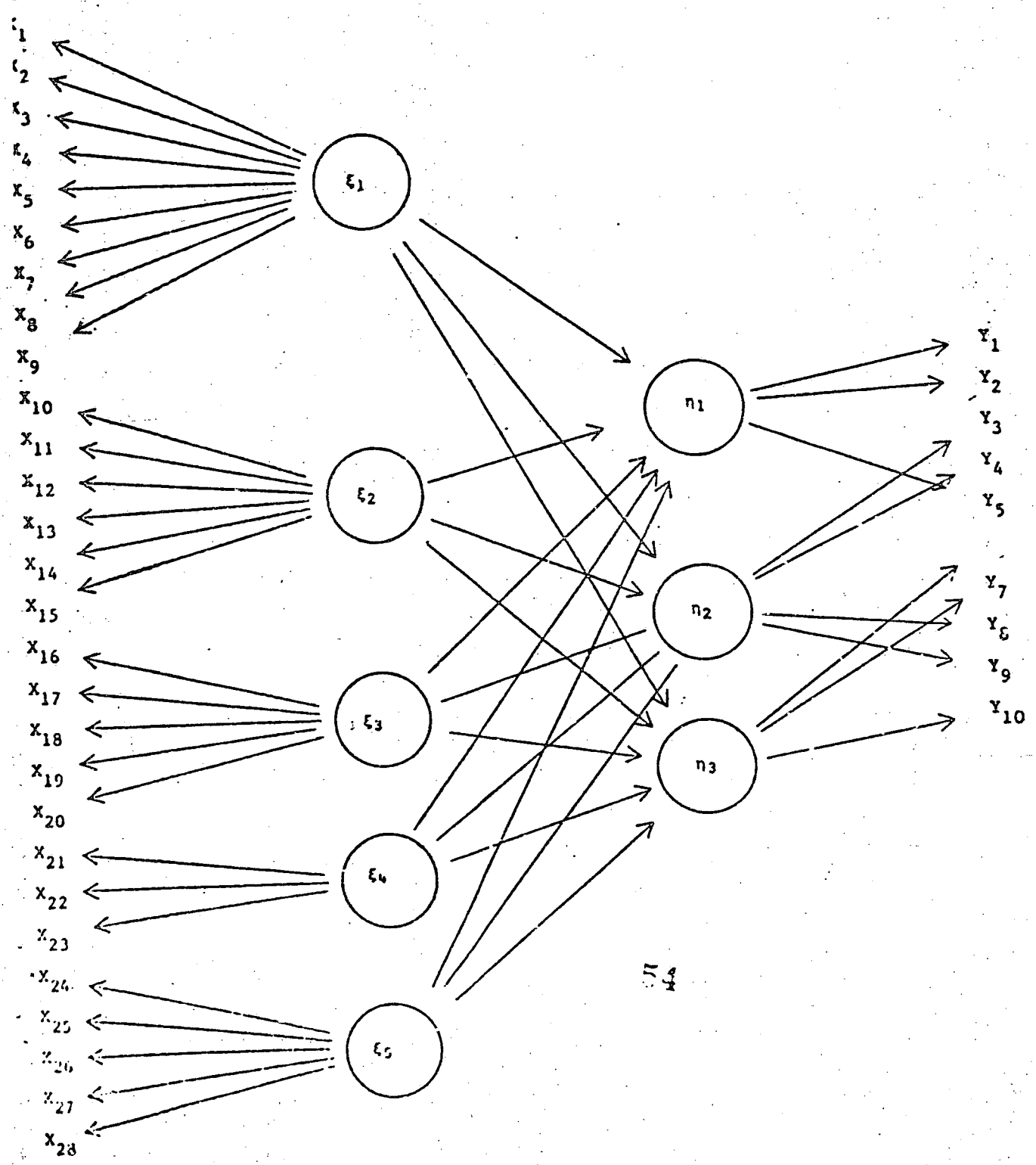

Figure 8

Model 6 for Junior High Male and Female Student Victimization

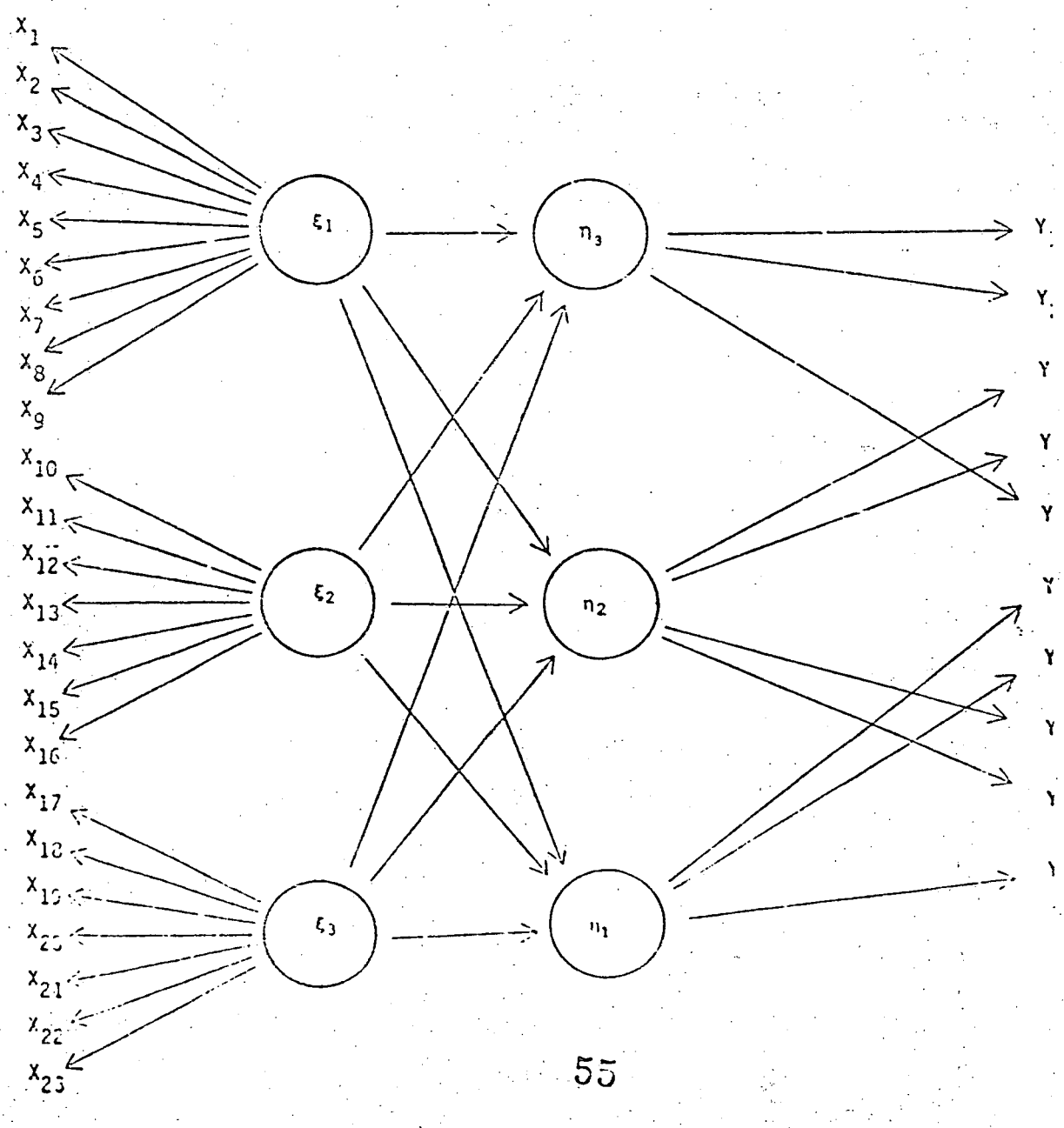

Figure 9

Model 7 for Senior High Black and White Student Victimizations

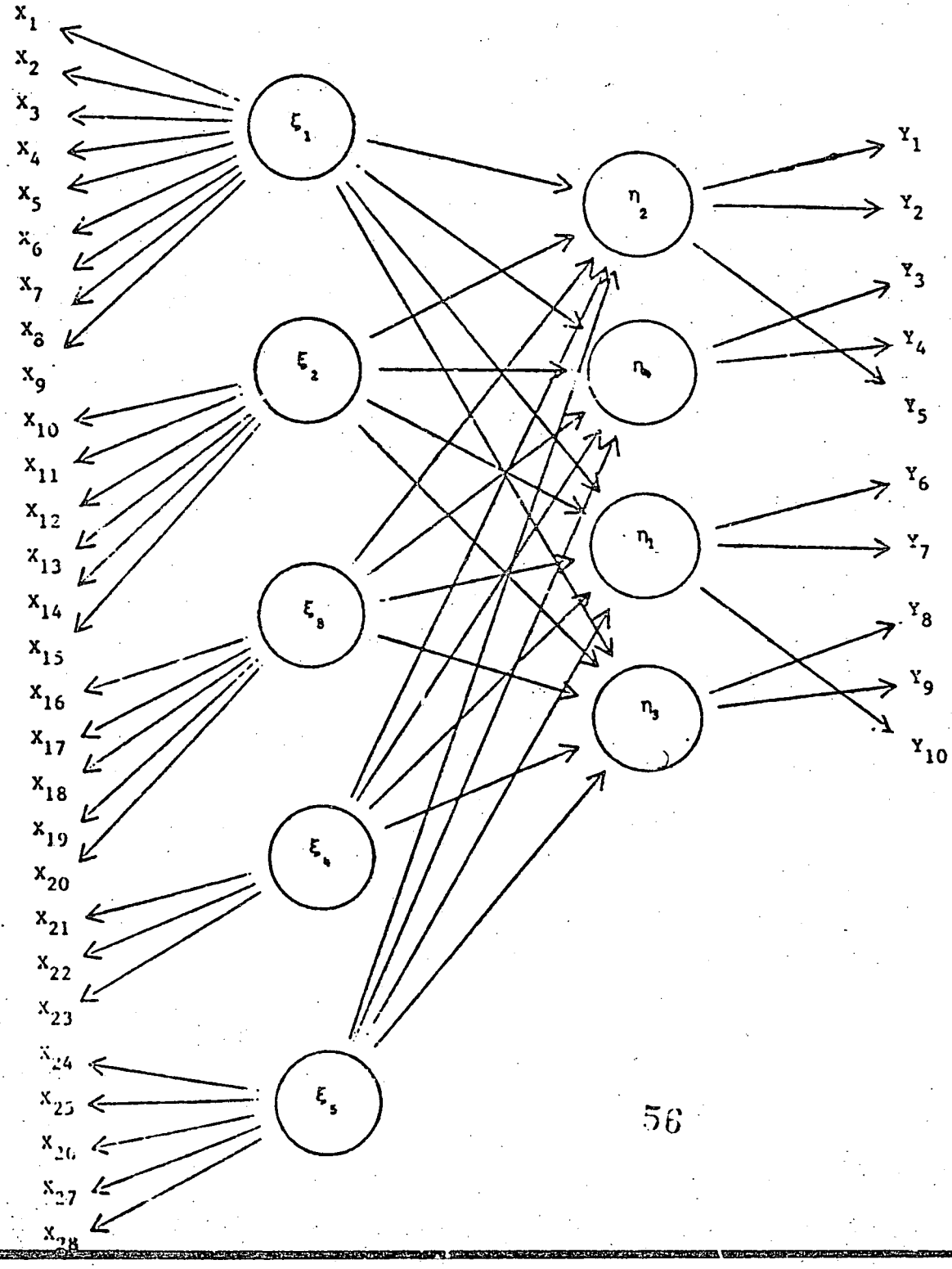

Figure 10

Model 8 for Junior High Black and White Student Victimizations

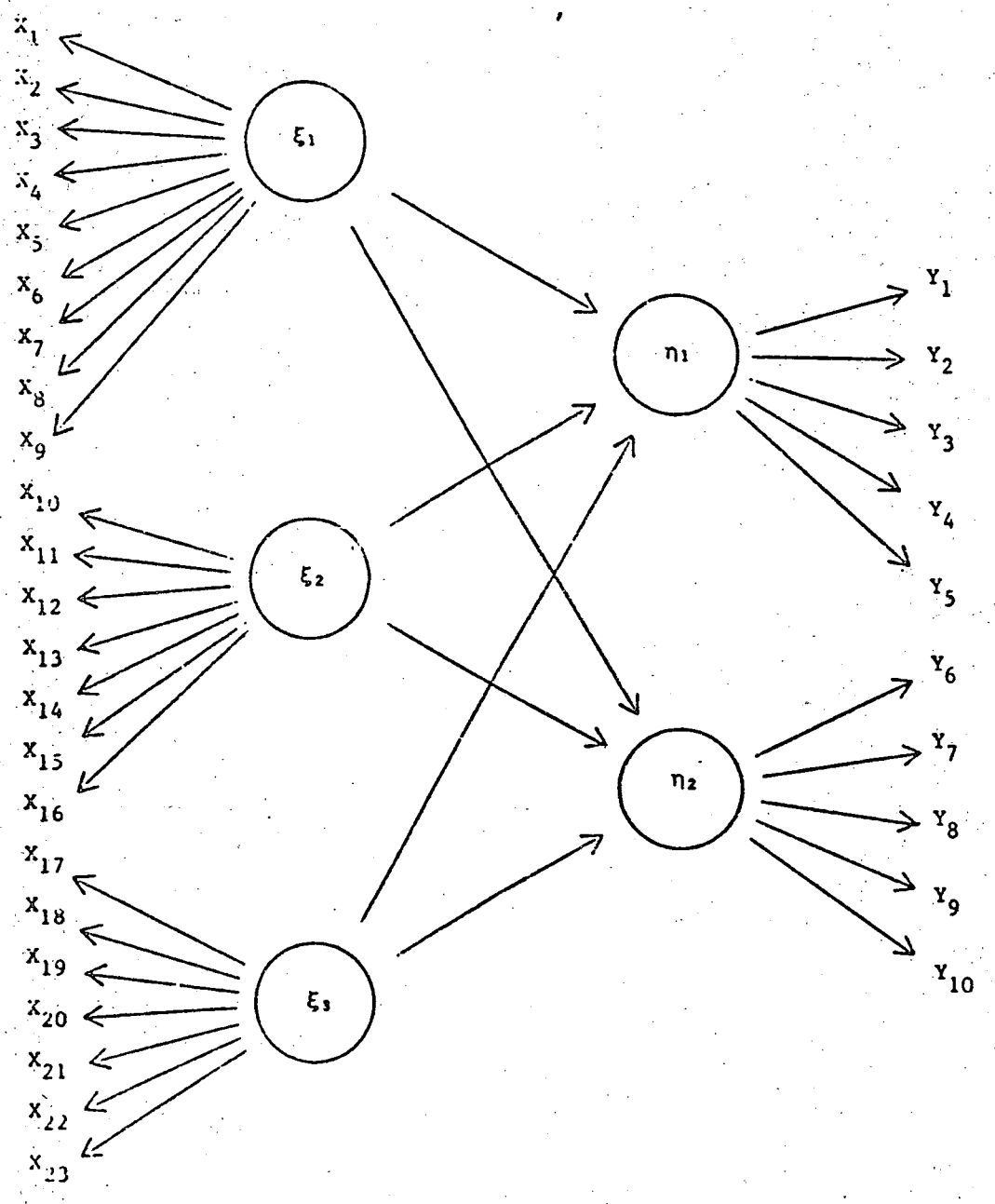

Table 10

Observed Variable for the Measurement Components of the Two Models for Senior High School Characteristics

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X_1 Community poverty and unemployment (factor score based on 1970 census data).

X_2 Rural (vs. urban) location.

X_3 Community crime (principal and student reports).

X_4 Percentage of students from families on welfare or unemployed (principal's report).

X_5 Percentage of students white.

X_6 Percentage of teachers white.

X_7 Peer and nonacademic ties (9-item scale based on student reports).

X_8 Percentage of students behind grade level (principal's report).

X_9 Percentage of students who have never repeated a year of school because of failure.

X_{10} Community affluence and education (factor score based on 1970 census data).

X_{11} Educational level of teachers.

X_{12} Clear sanctions (principal's and teachers' report).

X_{13} Teacher authority (7-item scale based on teachers' attitudes).

X_{14} Firm and clear enforcement of rules (6-item scale based on students' reports).

X_{15} Delinquent youth culture (9-item scale based on student reports).

X_{16} Parental education and students' self-reported ability (4-item scale based on students' reports).

X_{17} College preparation emphasis (5-item scale based on teachers' and principal's reports).

X_{18} Belief in conventional social rules (6-item scale based on students' reports).

X_{19} College vs. job orientation of the studentry (11-item scale based on students' reports).

Table 10 (continued)

X_{20}	Internal control (3-item scale based on students' reports).
X_{21}	Number of different students taught by the average teacher.
X_{22}	Vocational vs. basic skills climate (7-item scale based on teachers' and principal's report).
X_{23}	Percentage of teachers who teach mostly industrial arts.
X_{24}	Teacher-administration cooperation (4-item scale based on teachers' reports).
X_{25}	Principal rating (5-item scale based on teachers' reports).
X_{26}	Perceived fairness and clarity of rules (6-item scale based on students' reports).
X_{27}	Student influence (7-item scale based on student reports).
X_{28}	School attachment (14-item scale based on students reports).

Note. All scales used are described by Gottfredson and Daiger (1979) except for the principal rating, described elsewhere in this report.

Table 11

Observed Variables for the Measurement Components of the Two Models for Junior High School Characteristics

---

X_1 Community poverty and unemployment (factor score based on 1970 census data).

X_2 Rural (vs. urban) location.

X_3 Community crime (principal and student reports).

X_4 Percentage of students from families on welfare or unemployed (principal's report).

X_5 Percentage of students white.

X_6 Percentage of teachers white.

X_7 Peer and nonacademic ties (7-item scale based on student reports).

X_8 Percentage of students behind grade level (principal's report).

X_9 Percentage of students who have never repeated a year of school because of failure.

X_{10} Community affluence and education (factor score based on 1970 census data).

X_{11} Educational level of teachers.

X_{12} Clear sanctions(principal's and teachers' report).

X_{13} Teacher authority (7-item scale based on teachers' attitudes).

X_{14} Firm and clear enforcement of rules (6-item scale based on students' reports).

X_{15} Parental education and students' self-reported ability (4-item scale based on students' reports).

Table 11(continued)

X_{16}	College vs. job orientation of the studentry (11-item scale based on students' reports).
X_{17}	Belief in conventional social rules (6-item scale based on students' reports).
X_{18}	Teacher-administration cooperation (4-item scale based on teachers' reports).
X_{19}	Principal rating (5-item scale based on teachers' reports).
X_{20}	Perceived fairness and clarity of rules (6-item scale based on students' reports).
X_{21}	School attachment (15-item scale based on students' reports).
X_{22}	Internal control (3-item scale based on students' reports).
X_{23}	Delinquent youth culture (9-item scale based on student reports).

Note. All scales used are described by Gottfredson and Daiger (1979) except for the principal rating, described elsewhere in this report.

community characteristics. Because of the unreliability of the student interview data, it is not considered further in this report. The following analyses are restricted to teacher and student questionnaire measures.

Measuring teacher victimization. Because the earlier analyses suggested that the victimization reports of black and white teachers may not be alternative measures of the same underlying factor(s), the factor analyses involved teacher victimization reports aggregated separately for blacks and whites. The results of an exploratory factor analysis for senior high teacher victimization measures are shown in Table 12. All variables have positive loading on the first unrotated factor (not shown). Several varimax rotations were examined. The clearest structure emerged from the three-factor varimax rotation shown in Table 12. The first factor might be called white teacher victimization, the second is dominated by serious teacher victimization, especially as reported by black teachers, and the third is dominated by less serious measures of victimization reported by black teachers.

Two confirmatory factor analyses were then performed. In the first, all observed variables (Y) were assumed to be indicators of a single underlying factor (eta), and factor loadings (lambda(Y)) were estimated using maximum likehood procedures. In the second, guided by the results of the exploratory factor analysis, the Y's were assumed to be indicators of three underlying factors. The solution was constrained by fixing some factor loadings at zero, and

allowing others to vary freely--except that the eta(n) were constrained to be orthogonal (phi = I). Table 13 shows the results for senior high schools. As anticipated, the three-factor model fits the data much better than the one-factor model (chi-squared (d.f. = 3) = 157.9, $p < .001$). Despite the restrictions on the analysis, introduced to provide for interpretive clarity and which account for the fairly large chi-squared values, the simplified three-factor model appears to reproduce the inter-item correlations reasonably well (36 out of the 45 off-diagonal elements of the residual matrix are less than .11). These results accord with the earlier suggestion that more than a single underlying factor is being represented by the victimization measures for senior high school teachers.

The results of the exploratory analysis for junior high school teacher victimization measures are shown in Table 14, and the confirmatory analysis results are shown in Table 15. The exploratory results were difficult to interpret, and we examined several alternative confirmatory analyses. The best of the confirmatory analyses is shown in Table 15. This three-factor model fits the data much better than the single-factor model (chi-squared (d.f. = 3) = 32.9, $p < .001$). The first factor, eta(1), might be interpreted as an <u>overall victimization</u> measure--dominated somewhat by incidents of minor seriousness. The second, eta(2), might be interpreted as <u>serious victimization reports for white teachers</u>. The third, eta(3), parallels eta(2) for black teachers, <u>serious victimization reports for black teachers</u>.

Table 12

Exploratory Factor Analysis of Senior High

Teacher Victimization Measures

Observed variable	Factor 1	2	3	h^2
Y_1 White teachers' robbery	41	40	-02	32
Y_2 White teachers' theft	40	01	05	16
Y_3 White teachers' physical attack	47	22	09	28
Y_4 White teachers' remarks, gestures	84	03	28	79
Y_5 White teachers' fear for safety	86	05	14	77
Y_6 Black teachers' robbery	09	84	-04	72
Y_7 Black teachers' theft	02	07	55	31
Y_8 Black teachers' physical attack	01	49	19	28
Y_9 Black teachers' remarks, gestures	14	08	68	49
Y_{10} Black teachers' fear for safety	34	00	49	36

Note. Varimax rotation of principal factor solution with iterated communalities. Decimals omitted.

Table 13

Standardized Lambda $_Y$ for Two Models of Senior High Teacher Victimization

Observed variable	Model 1 Eta 1	Model 3 Eta 1	Model 3 Eta 2	Model 3 Eta 3
Y_1 White teachers' robbery	.391	.349	.351	--
Y_2 White teachers' theft	.404	.399	--	--
Y_3 White teachers' physical attack	.470	.461	--	--
Y_4 White teachers' remarks, gestures	.925	.827	--	.232
Y_5 White teachers' fear for safety	.869	.897	--	--
Y_6 Black teachers' robbery	.156	--	.960	--
Y_7 Black teachers' theft	.160	--	--	.393
Y_8 Black teachers' physical attack	.122	--	.428	--
Y_9 Black teachers' remarks, gestures	.367	--	--	.957
Y_{10} Black teachers' fear for safety	.469	.354	--	.316
Chi-squared	258.6		100.7	
Nu	35		32	

Note. The factors (ksi(n)) are relabeled eta(m) in this table because in subsequent models estimating structural parameters these factors are endogenous variables. Dashes indicate parameters fixed at zero. The three-factor model provides a better fit to the data than the one-factor model (chi-squared=157.9, nu=3, p<.001). See page 74 for the explanation.

The analyses suggest that components of the victim reports for the two groups are not completely shared by both.

Measuring student victimization. Whereas the exploratory work summarized earlier (Table 5) implied that male and female teacher reports measure the same phenomena, but that black and white teacher reports do not, those exploratory analyses implied that both sex and race of respondent are problematical for student reports. First we report results for boys vs. girls, and then we report results for blacks vs. whites.

The exploratory factor analysis results for senior high male and female student victimization reports are shown in Table 16, and the results of the confirmatory analyses for one- and three-factor models are shown in Table 17. The first factor in Table 17 might be called boys' personal victimization. The third might be called girls' personal victimization. The second might be called student theft, and the three-factor model fits the data much better than the single-factor model (chi-squared = 82.3 and 233.1, respectively, each with nu = 35).

Results of the exploratory analysis of junior high student victimization reports are shown in Table 18, and confirmatory results are shown in Table 19. Although the fit of the junior high models to the data is not as good as was the case for senior high victimization reports, the three-factor model is superior to the one-factor model for these data (chi-squared = 207.2 and 353.3, respectively, with 35 degrees of freedom for each). It again appears appropriate

Table 14

Exploratory Factor Analysis of Junior High Teacher Victimization Measures

Observed variable	Factor 1	Factor 2	Factor 3	h^2
Y_1 White teachers' robbery	05	41	02	11
Y_2 White teachers' theft	42	43	02	37
Y_3 White teachers' physical attack	12	65	05	28
Y_4 White teachers' remarks, gestures	62	63	17	83
Y_5 White teachers' fear for safety	67	38	06	54
Y_6 Black teachers' robbery	14	20	44	20
Y_7 Black teachers' theft	32	-04	13	08
Y_8 Black teachers' physical attack	09	-10	69	43
Y_9 Black teachers' remarks, gestures	57	18	08	29
Y_{10} Black teachers' fear for safety	45	16	35	35

Note. Decimals omitted. Varimax rotation of principal factor solution with iterated communalities.

Table 15

Standardized Lambda$_Y$ for Two Models of Junior High Teacher Victimization

Observed variable	Model 2 Eta 1	Model 4 Eta 1	Model 4 Eta 2	Model 4 Eta 3
Y_1 White teachers' robbery	.293	--	.402	--
Y_2 White teachers' theft	.621	.595	--	--
Y_3 White teachers' physical attack	.521	--	.742	--
Y_4 White teachers' remarks, gestures	.942	.918	--	--
Y_5 White teachers' fear for safety	.763	.744	--	--
Y_6 Black teachers' robbery	.330	--	--	.829
Y_7 Black teachers' theft	.202	.196	--	--
Y_8 Black teachers' physical attack	.142	--	--	.352
Y_9 Black teachers' remarks, gestures	.552	.537	--	--
Y_{10} Black teachers' fear for safety	.507	.490	--	--
Chi-squared	118.1		85.2	
Nu	35		32	

Note. Dashes indicate parameters fixed at zero. Model 4 fits the data better than does model 1 (chi-squared=32.9, nu=3, p<.001).

to label the factors girls' personal victimization, student theft, and boys' personal victimization.

The results of the exploratory factor analysis for senior high school black and white student victimization reports appear in Table 20, and the corresponding confirmatory factor analysis is presented in Table 21. (In constrast to our other exploratory factor analyses which use iterated communality estimates, Table 20 is a principal components solution. The factor analysis program we were using (SPSS, PA2) gave implausible communality estimates.) The four factors might be described as follows: The first is black student attack and robbery, the second is white student attack and robbery, the third is black student theft, and the fourth is white student theft. The four-factor model fits the data much better than the one-factor model (chi-squared (d.f. = 4) = 620.7, $p < .001$). Some anomalies in Table 21 require explanation. The correlation matrix was predominated by very small values. In order to expedite the confirmatory analyses, the lambda(Y) corresponding to the largest loadings in the exploratory factor analysis for each factor were fixed at 1.0. Consequently, all other lambda(Y) are interpretable only relative to those fixed parameters. The confirmatory analyses were performed solely to test the goodness-of-fit of alternative models.

Results of the exploratory and confirmatory factor analyses for junior high school black and white student victimization reports are shown in Tables 22 and 23. The two factors are readily interpretable as white students' reports

Table 16

Exploratory Factor Analysis of Senior High Male and Female Student Victimization Measures

Observed variable	Factor 1	Factor 2	Factor 3	h^2
Y_1 Boys' robbery, less than $1	71	-06	15	54
Y_2 Boys' robbery, $1 or more	72	-04	00	52
Y_3 Boys' theft, less than $1	36	20	02	17
Y_4 Boys' theft, $1 or more	25	15	00	09
Y_5 Boys' physical attack	57	-01	09	34
Y_6 Girls' robbery, less than $1	08	11	59	36
Y_7 Girls' robbery, $1 or more	-05	02	67	45
Y_8 Girls' theft, less than $1	07	71	13	53
Y_9 Girls' theft, $1 or more	00	74	05	56
Y_{10} Girls' physical attack	11	03	42	19

Note. Decimals omitted. Varimax rotation of principal factor solution with iterated communalities.

Table 17

Standardized Lambda$_Y$ for Two Models of Senior High Male and Female Reports of Student Victimization

Observed variable	Model 1 Eta$_1$	Model 5 Eta$_1$	Model 5 Eta$_2$	Model 5 Eta$_3$
Y_1 Boys' robbery, less than $1	.737	.738	--	--
Y_2 Boys' robbery, $1 or more	.689	.704	--	--
Y_3 Boys' theft, less than $1	.339	--	.227	--
Y_4 Boys' theft, $1 or more	.238	--	.154	--
Y_5 Boys' physical attack	.591	.595	--	--
Y_6 Girls' robbery, less than $1	.178	--	--	.585
Y_7 Girls' robbery, $1 or more	.070	--	--	.674
Y_8 Girls' theft, less than $1	.097	--	.803	--
Y_9 Girls' theft, $1 or more	.030	--	.743	--
Y_{10} Girls' physical attack	.181	--	--	.424
Chi-squared	238.1		82.3	
Nu	35		35	

Note. Dashes indicate parameters fixed at zero. Model 5 fits the data better than does model 1 (for two models with the same number of degrees of freedom, the difference in chi-squared is 155.8).

and black students' reports. The two-factor model provides a much better fit to the data than a one-factor model (chi-squared = 103.5 and 372.7, each with 35 degrees of freedom).

Measuring school organization and community characteristics. Earlier research (Gottfredson and Daiger, 1979; NIE, 1978; Wiatrowski, Gottfredson, & Swatko, 1980) provided a basis for choosing school organizational and community characteristics useful for describing schools. The goal in the present research was to parsimoniously characterize schools in terms of the major dimensions along which they vary. This subsection describes the exploratory and confirmatory factor analyses performed to specify measurement models for school and community variables in the present research.

An exploratory factor analysis for senior high school and community characteristics is presented in Table 24, and the corresponding confirmatory factor analysis is shown in Table 25. The first latent variable, ksi(1), might be called social disorganization (see Gottfredson & Daiger, 1979, for a discussion of this term). A school with a high score on ksi(1) is in a high crime community, with many female-headed families, high unemployment, a high percentage of persons on welfare, and is predominantly non-white. A high proportion of students are a year behind grade level in reading and have repeated a year in school.

The second latent variable, ksi(2), might be called permissive middle-class affluence. A high-scoring school on this factor is located in an affluent and highly educated community and has relatively many teachers with advanced

Table 18

Exploratory Factor Analysis of Junior High Male and Female Student Victimization Measures

Observed variable	Factor 1	Factor 2	Factor 3	h^2
Y_1 - Boys' robbery, less than $1	14	09	74	57
Y_2 Boys' robbery, $1 or more	24	14	61	45
Y_3 Boys' theft, less than $1	01	65	18	45
Y_4 Boys' theft, $1 or more	-01	57	35	45
Y_5 Boys' physical attack	05	14	51	28
Y_6 Girls' robbery, less than $1	77	07	14	62
Y_7 Girls' robbery, $1 or more	76	13	11	60
Y_8 Girls' theft, less than $1	27	65	03	50
Y_9 Girls' theft, $1 or more	42	53	06	47
Y_{10} Girls' physical attack	63	12	17	44

Note. Decimals omitted. Varimax rotation of principal factor solution with iterated communalities.

Table 19

Standardized Lambda $_Y$ for Two Models of Junior High Male and Female Reports of Student Victimization

Observed variable	Model 1 Eta 1	Model 5 Eta 1	Model 5 Eta 2	Model 5 Eta 3
Y_1 Boys' robbery, less than $1	.415	--	--	.772
Y_2 Boys' robbery, $1 or more	.478	--	--	.645
Y_3 Boys' theft, less than $1	.370	--	.628	--
Y_4 Boys' theft, $1 or more	.383	--	.565	--
Y_5 Boys' physical attack	.299	--	--	.519
Y_6 Girls' robbery, less than $1	.655	.801	--	--
Y_7 Girls' robbery, $1 or more	.668	.782	--	--
Y_8 Girls' theft, less than $1	.509	--	.731	--
Y_9 Girls' theft, $1 or more	.599	--	.644	--
Y_{10} Girls' physical attack	.616	.624	--	--
Chi-squared	353.3		207.2	
Nu	35		35	

Note. Dashes indicate parameters fixed at zero. Model 6 fits the data better than does model 2 (for two models with the same number of degrees of freedom, the difference in chi-squared is 146.1).

degrees. Corporal punishment for misconduct or explicit special privileges for good behavior are seldom employed, students tend not to report that rules are clear and firmly enforced, and the teachers tend to reject attitude items such as, "If a pupil uses obscene or profane language in school, it must be considered a moral offense." Finally, in such a school students tend to report that alcohol and marijuana are available, that they would cheat on a test or skip school if they could get away with it, and that they would not "rat" on another person.

The third latent variable, ksi(3), might be called conventional academic orientation. In a high-scoring school on this variable, students report that they have highly educated parents, and they rate their own ability as high. Students and faculty are oriented towards college preparation, and students tend to score high on measures of internal control and belief in conventional social rules.

The fourth latent variable, ksi(4), might be called vocational training. In a high-scoring school the teachers tend to emphasize job preparation rather than basic skills, a high proportion of the faculty teach mostly industrial arts, and each teacher teaches relatively few students.

The fifth latent variable, ksi(5), appears to be related to sound school administration. In a high-scoring school, teacher-administration cooperation is high, the principal is highly regarded by the teachers, students tend to perceive the rules as clear and fairly enforced, and they tend to be strongly attached to their school.

Table 20

Exploratory Factor Analysis of Senior High Black and White Student Victimization Measures

Observed variable	Factor 1	2	3	4	h^2
Y_1 Whites' robbery, less than $1	00	96	00	-02	92
Y_2 Whites' robbery, $1 or more	-05	93	06	-02	87
Y_3 Whites' theft, less than $1	03	-03	02	84	71
Y_4 Whites' theft, $1 or more	-01	-04	01	84	71
Y_5 Whites' physical attack	23	28	-18	-08	17
Y_6 Blacks' robbery, less than $1	86	01	16	-05	78
Y_7 Blacks' robbery, $1 or more	79	04	08	04	64
Y_8 Blacks' theft, less than $1	24	-02	84	01	76
Y_9 Blacks' theft, $1 or more	13	00	87	02	78
Y_{10} Blacks' physical attack	71	-02	17	-01	54

Note. Decimals omitted. Principal component solution.

Table 21

Standardized Lambda$_Y$ for Two Models of Senior High Black and White Reports of Student Victimization

Observed variable	Model 1 Eta 1	Model 7 Eta 1	Model 7 Eta 2	Model 7 Eta 3	Model 7 Eta 4
Y_1 Whites' robbery, less than $1	1.000	--	1.000	--	--
Y_2 Whites' robbery, $1 or more	.172	--	.721	--	--
Y_3 Whites' theft, less than $1	-.026	--	--	--	1.000
Y_4 Whites' theft, $1 or more	-.060	--	--	--	.428
Y_5 Whites' physical attack	.137	--	.243	--	--
Y_6 Blacks' robbery, less than $1	1.026	1.000	--	--	--
Y_7 Blacks' robbery, $1 or more	.834	.616	--	--	--
Y_8 Blacks' theft, less than $1	.555	--	--	1.000	--
Y_9 Blacks' theft, $1 or more	.426	--	--	.564	--
Y_{10} Blacks' physical attack	.732	.535	--	--	--
Chi-squared	731.4		110.7		
Nu	36		39		

Note. Dashes indicate parameters fixed at zero. Model 7 fits the data better than does Model 1 (chi-squared=620.7, nu=3, p<.001). One loading in each column of (lambda(y)) is constrained to equal 1 to identify the model.

The results of the exploratory and confirmatory factor analyses for junior high school and community characteristics are shown in Tables 26 and 27. The first latent variable for the junior high school model, ksi(1), appears to be the same as for senior high schools, and could be called social disorganization.

The second latent variable, ksi(2), resembles a composite of the senior high school latent variables ksi(2) and ksi(3), implying less differentiation among junior high schools than senior high schools. A high-scoring school on this latent variable is in an affluent and educated community, has relatively many teachers with advanced degrees, and has college-oriented students who rate themselves high in ability. Teachers reject items that resemble those in the authoritarianism scale, paddling and special privileges are rarely used as sanctions, and students tend not to report that rule enforcement is firm. This latent variable might be called permissive affluence and academic orientation.

The third latent variable, ksi(3), closely resembles ksi(5) for senior high schools. Belief in conventional social rules, internal control, and low delinquent youth culture also index this factor. Consequently, it might be called prosocial school organization.

Structural Models of Victimization with Alternative Measurement Models. It is evident from results presented earlier in this report and elsewhere (Gottfredson & Daiger, 1979) that student and teacher victimization are best

Table 22

Exploratory Factor Analysis of Junior High Black and White Student Victimization Measures

Observed variable	Factor 1	Factor 2	h^2
Y_1 Whites' robbery, less than $1	58	02	34
Y_2 Whites' robbery, $1 or more	94	-01	88
Y_3 Whites' theft, less than $1	52	06	27
Y_4 Whites' theft, $1 or more	65	05	43
Y_5 Whites' physical attack	66	-02	44
Y_6 Blacks' robbery, less than $1	08	62	39
Y_7 Blacks' robbery, $1 or more	02	76	58
Y_8 Blacks' theft, less than $1	01	39	15
Y_9 Blacks' theft, $1 or more	-01	64	42
Y_{10} Blacks' physical attack	01	49	24

Note. Decimals omitted. Varimax rotation of principal factor solution with iterated communalities.

Table 23

Standardized Lambda$_Y$ for Two Models of Junior High Black and White Reports of Student Victimization

Observed variable	Model 2 Eta 1	Model 8 Eta 1	Model 8 Eta 2
Y_1 Whites' robbery, less than $1	.566	.565	--
Y_2 Whites' robbery, $1 or more	.966	.966	--
Y_3 Whites' theft, less than $1	.443	.442	--
Y_4 Whites' theft, $1 or more	.606	.606	--
Y_5 Whites' physical attack	.722	.722	--
Y_6 Blacks' robbery, less than $1	.077	--	.658
Y_7 Blacks' robbery, $1 or more	.023	--	.784
Y_8 Blacks' theft, less than $1	-.001	--	.371
Y_9 Blacks' theft, $1 or more	-.020	--	.596
Y_{10} Blacks' physical attack	.037	--	.494
Chi-squared	372.7	103.5	
Nu	35	35	

Note. Dashes indicate parameters fixed at zero. Model 8 fits the data better than does Model 2 (for two models with the same number of degrees of freedom, the difference in chi-squared is 269.2).

Table 24

Exploratory Factor Analysis of Senior High School and Community Characteristics

Observed variable		Factor 1	2	3	4	5	h^2
X_1	Community poverty and unemployment	62	00	08	-01	07	40
X_2	Rural (vs. urban) location	-58	-33	-27	-05	27	59
X_3	Community crime	54	13	-04	-10	-22	36
X_4	Student families on welfare	66	-09	-16	03	03	47
X_5	Percentage students white	-92	10	-09	10	-02	88
X_6	Percentage teachers white	-62	25	-23	10	-04	51
X_7	Peer and nonacademic ties	-72	-16	-03	-09	13	58
X_8	Students reading behind grade level	60	-21	-26	15	04	50
X_9	Pct. students never repeated year	-54	30	19	-10	14	44
W_1	Dropouts relative to enrollment	18	06	-08	-02	05	04
W_2	School total enrollment	25	33	33	-14	-22	35
X_{10}	Community affluence and education	01	61	41	08	-21	59
X_{11}	Teacher educational level	11	57	28	-44	-07	62
X_{12}	Clear sanctions	-09	-59	-17	-02	07	40
X_{13}	Teacher authority	16	-65	-09	16	-18	51
X_{14}	Firm and clear enforcement	06	-75	-02	04	-06	57
X_{15}	Delinquent youth culture	-17	66	-05	09	-40	63

Note: Decimals omitted. Varimax rotated principal factor solution with iterated communalities. Variables W_1 and W_2 are not represented in the confirmatory analysis. When the number of factors is increased to 7, the communality of W_1 increases only to .46, and it still has loadings on several factors. No clear school site factor emerges in any solution examined. Variables labeled W_1 are omitted from the confirmatory factor analysis.

Table 24 (Continued)

Exploratory Factor Analysis of Senior High School

and Community Characteristics

Observed variable	Factor 1	2	3	4	5	h^2
X_{16} Parental SES and S-R ability	-38	33	67	-16	-02	73
X_{17} College prep. orientation (tch., prn.)	-09	32	63	-26	-11	59
X_{18} Belief in conventional social rules	-29	-03	44	03	28	35
X_{19} Student college prep. orientation	12	09	79	-34	-02	76
X_{20} Internal control	04	13	46	-05	27	31
X_{21} Number of different students taught	04	-03	12	-61	-10	40
X_{22} Vocational vs. basic skills climate	-02	-11	-13	70	14	53
X_{23} Industrial arts	10	00	-15	88	09	82
X_{24} Teacher-administration cooperation	-15	-12	-12	13	37	20
X_{25} Principal rating	-13	-08	-08	04	42	21
X_{26} Perceived fair and clear rules	04	-08	24	19	72	62
X_{27} Student influence	22	33	06	-02	67	61
X_{28} School attachment	09	-12	35	49	65	81

Table 25

Standardized Lambda $_X$ for All Senior High School Models

Observed variable	Ksi 1	Ksi 2	Ksi 3	Ksi 4	Ksi 5
X_1 Community poverty and unemployment	.612	--	--	--	--
X_2 Rural (vs. urban) location	-.512	--	--	--	--
X_3 Community crime	.519	--	--	--	--
X_4 Student families on welfare	-.645	--	--	--	--
X_5 Pct. students white	-.958	--	--	--	--
X_6 Pct. teachers white	-.731	--	--	--	--
X_7 Peer and nonacademic ties	-.666	--	--	--	--
X_8 Students reading behind grade level	.566	--	--	--	--
X_9 Pct. students never repeated year	.491	--	--	--	--
X_{10} Community affluence and education	--	.678	--	--	--
X_{11} Teacher educational level	--	.626	--	--	--
X_{12} Clear sanctions	--	-.645	--	--	--
X_{13} Teacher authority	--	-.648	--	--	--
X_{14} Firm and clear enforcement	--	-.719	--	--	--

Table 25 (Continued)

Standardized $Lambda_x$ for All Senior High School Models

X 15 Delinquent youth culture	--	.615	--	--	--
X 16 Parental SES and S-Ry ability	--	--	.741	--	--
X 17 College prep. orientation (tch., prn.)	--	--	.851	--	--
X 18 Belief in conventional social rules	--	--	.315	--	--
X 19 Student college prep. orientation	--	--	.858	--	--
X 20 Internal control	--	--	.402	--	--
X 21 Number of different students taught	--	--	--	-.641	--
X 22 Vocational vs. basic skills climate	--	--	--	.772	--
X 23 Industrial arts	--	--	--	.868	--
X 24 Teacher-administration cooperation	--	--	--	--	.329
X 25 Principal rating	--	--	--	--	.376
X 26 Perceived fair and clear rules	--	--	--	--	.907
X 27 Student influence	--	--	--	--	.541
X 28 School attachment	--	--	--	--	.782

Note. Dashes indicate parameters fixed at zero.

treated as distinct constructs, and that senior high schools are factorably more complex than junior high schools. Therefore student and teacher victimization are examined separately for junior and senior high schools in the next set of analyses. Results for teacher victimization are described first, followed by results for student victimization. Because male and female teacher victimization measures are so closely related (see Table 5) we have focused the analyses of teacher victimization on white and black teacher victimization.

In this section, the concern is with the "explanation" of school victimization with reference to the characteristics of the schools and their communities, represented by the latent variables discussed earlier. Here, the measurement and structural components of the models diagrammed in Figures 3-10 are combined in an effort to estimate the structural components of the models. Guided by the confirmatory factor analyses just described, the parameters of the measurement models for the predictor variables are fixed. Specifically, the lambda(X) matrices are fixed at the values shown in Tables 25 and 27. The constraints on the variances of the eta(m) are relaxed, so they are no longer completely orthogonal as they were in the comfitmatory factor analyses. In each model, one lambda(Y) for each latent variable is fixed at 1.0 to identify the model. In each set of analyses, a model postulating that victimization is a unitary construct is contrasted with a model postulating that it is a multifactorial to illustrate practical differences in the substantive interpretations implied by the results.

Table 26

Exploratory Factor Analysis of Junior High School and Community Characteristics

Observed variable		Factor 1	Factor 2	Factor 3	h^2
x_1	Community poverty and unemployment	72	-03	-04	52
x_2	Rural (vs. urban) location	-66	-34	16	57
x_3	Community crime	59	01	-28	42
x_4	Student families on welfare	71	-23	-03	56
x_5	Percentage students white	-93	13	02	89
x_6	Percentage teachers white	-70	15	-02	51
x_7	Peer and nonacademic ties	-71	00	19	54
x_8	Students reading behind grade level	70	-28	-08	57
x_9	Percentage students never repeated year	-41	46	11	39
w_1	Dropouts relative to enrollment	14	-32	-06	12
w_2	School total enrollment	40	35	-10	29
w_{10}	Community affluence and education	-14	75	-04	58
x_{11}	Teacher educational level	21	58	04	39
x_{12}	Clear sanctions	13	-55	02	32
x_{13}	Teacher authority	13	-48	-11	26
x_{14}	Firm and clear enforcement	-06	-49	08	25
x_{15}	Parental SES and S-R Ability	-22	65	27	54

Note: Decimals omitted. Varimax rotated principal factor solution with iterated communalities. Variables labeled w_i are omitted from the confirmatory factor analysis.

Table 26 (Continued)

Exploratory Factor Analysis of Junior High School and Community Characteristics

Observed variable	Factor 1	Factor 2	Factor 3	h^2
x_{16} Student college prep. orientation	28	47	26	36
x_{17} Belief in conventional social rules	-38	05	43	33
x_{18} Teacher-administration cooperation	-23	-01	46	26
x_{19} Principal rating	-12	-08	32	12
x_{20} Perceived fair and clear rules	-16	02	81	69
x_{21} School attachment	07	02	88	78
x_{22} Internal control	08	29	52	36
x_{23} Delinquent youth culture	-07	39	-61	53
w_3 Student influence	47	14	28	32
w_4 College prep. orientation (tch., prn.)	-03	13	-02	02
w_5 Number of different students taught	-01	26	-07	07
w_6 Vocational vs. basic skills climate	27	-19	-08	12
w_7 Industrial arts	18	29	-13	14

Table 27

Standardized Lambda $_X$ for All Junior High School Models

Observed variable	Ksi 1	Ksi 2	Ksi 3
X_1 Community poverty and unemployment	.717	--	--
X_2 Rural (vs. urban) location	-.573	--	--
X_3 Community crime	.560	--	--
X_4 Student families on welfare	.731	--	--
X_5 Pct. students white	-.950	--	--
X_6 Pct. teachers white	-.777	--	--
X_7 Peer and nonacademic ties	-.683	--	--
X_8 Students reading behind grade level	.718	--	--
X_9 Pct. students never repeated year	-.449	--	--
X_{10} Community affluence and education	--	.713	--
X_{11} Teacher educational level	--	.539	--
X_{12} Clear sanctions	--	-.557	--
X_{13} Teacher authority	--	-.492	--

Table 27 (Continued)

Standardized $Lambda_x$ for All Junior High School Models

X_{14}	Firm and clear enforcement	--	-.474	--
X_{15}	Parental SES and S-R ability	--	.709	--
X_{16}	Student college prep. orientation	--	.521	--
X_{17}	Belief in conventional social rules	--	--	.315
X_{18}	Teacher-administration cooperation	--	--	.440
X_{19}	Principal rating	--	--	.280
X_{20}	Perceived fair and clear rules	--	--	.879
X_{21}	School attachment	--	--	.865
X_{22}	Internal control	--	--	.521
X_{23}	Delinquent youth culture	--	--	-.581

Note. Dashes indicate parameters fixed at zero.

Teacher victimization. Results for two models of senior high teacher victimization--corresponding to models 1 and 3 of Figures 3 and 5--are presented in Table 28. Note that the structure for the victimization measures shown in model 3 and used in Table 28 differs slightly from the structure tested earlier with the confirmatory factor analysis (Table 15). The structure used in Table 28 is more intuitively appealing than that in Table 15, and, although it was too restrictive to yield a sensible solution in the confirmatory factor analysis, this structure seemed to produce sensible results for the present analysis. Hence we decided to proceed with the more intuitive model. Model 3 yields a much better fit to the data than does model 1 (Chi-squared = 110.2, $p < .001$). White teacher victimization is well "explained" by model 3 (psi = .20). According to model 3, the largest standardized "effect" on white teacher victimization (eta(1)) is the social disorganization characteristic of the school and its community (ksi(1)). Permissive middle-class affluence (ksi(2)) has a moderate positive "effect," and sound school administration (ksi(5)) has a moderate negative "effect" on white teacher victimization. The other two school factors (ksi(3) and ksi(4)) have significant but small "effects" on white teacher victimization.

According to model 3, the pattern of effects is different for black teacher reports of robbery and attack (eta(2)). Eta(2) is poorly explained. The only significant predictor is ksi(1), social disorganization.

Table 28

Structural Parameters (gamma) in the Two Models of Senior High Teacher Victimization

Latent variable and label	Model 1	Model 3		
	Eta 1	Eta 1 [a]	Eta 2 [b]	Eta 3 [c]
Ksi 1 Social disorganization	.772**	.783**	.222**	.371**
Ksi 2 Permissive middle-class affluence	.311**	.314**	-.048	.391**
Ksi 3 Conventional and academic orientation	-.111**	-.106*	-.036	-.216**
Ksi 4 Vocational training	-.120**	-.130**	-.028	.023
Ksi 5 Sound school administration	-.245**	-.244**	-.016	-.135
Residual (Psi)	.222	.200	.946	.644
Chi-squared	2942		2831	
Nu	716		706	

Note. Model 3 provides a better fit to the data than does model 1 (chi-squared=110.2, nu=10, p<.001). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. In the results for model 3 the eta(m) are moderately correlated: rho(12)=.170, rho(13)=.466, rho(23)=.073.

[a] White Teacher Victimization

[b] Black Teacher Robbery and Attack

[c] Black Teacher Theft

*p<.05
**p<.01

Finally, the structural model moderately explains eta(3). Black teachers report more theft in schools located in disorganized social areas and in schools characterized by permissive middle-class affluence, but less theft in schools high in conventional academic orientation.

Models 1 and 3 lead to some differing implications. Were it assumed that only a single factor underlies victimization reports, one might conclude that social disorganization is of overwhelming importance in determining teacher victimization. Model 3, in contrast, suggests that social disorganization is much more important in determining white teacher victimization reports than black teacher victimization reports. This would lead to speculation about the reason for this difference. In addition, some other differences in Table 28 for the smaller coefficients suggest that minor but not major victimization experiences for blacks tend to occur in permissive, affluent schools, and tend to occur less in conventional, academic schools. Vocational training is associated negatively only with white teacher reports.

Results for the two models of junior high teacher victimization--corresponding to models 2 and 4 of Figures 4 and 6--are shown in Table 29. The three-factor model provides a significantly (chi-squared (d.f. = 6) = 17.8) but only slightly better fit to the data. The results for the first factor for model 4 resemble closely the results for the single-factor model. According to either model, overall teacher victimization is influenced most by social disorganization (ksi(1)), with permissive affluence and academic

orientation having a moderate positive effect, and prosocial school organization having a moderate negative influence on overall victimization. The results for white teacher robbery and attack parellel those for overall victimization, but black teacher reports of robbery and attack are related only to social disorganization and are poorly explained (psi = .90).

Student victimization. First we show results of models involving the reports of boys and girls, regardless of race; and then we show results of models for blacks and whites, regardless of sex. This form of analysis (pooling across race when analyzing for sex, and vice-versa) is necessary because of the small sample sizes that would be involved in analysis for non-overlapping subgroups. The results for two models of senior high student victimization--corresponding to models 1 and 5 of Figures 3 and 7--are shown in Table 30. The three-factor model fits the data much better than the single-factor model (chi-squared (d.f. = 10) = 181.1), and it has some interesting implications. The first factor (eta(1)), boys' robbery and attack, is moderately influenced by social disorganization, and sound school administration negatively influences this factor. The second factor (eta(2)), theft, is unrelated to social disorganization, but is negatively influenced by permissive middle-class affluence (ksi(2)) and sound school administration, and positively influenced by school conventional and academic orientation (ksi(3)). The last factor (eta(3)), is essentially unrelated to the school and community characteristics, with

Table 29

Structural Parameters (gamma) in the Two Models of Junior High Teacher Victimization

Latent variable and label	Model 2	Model 4		
	Eta_1	Eta_1[a]	Eta_2[b]	Eta_3[c]
Ksi_1 Social disorganization	.756**	.760**	.587**	.276**
Ksi_2 Permissive affluence and academic orientation	.324**	.335**	.228**	.127
Ksi_3 Prosocial school organization	-.337**	-.342**	-.200*	-.111
Residual (Psi)	.209	.193	.563	.895
Chi-squared	1839	1817		
Nu	538	532		

Note. Model 4 provides a better fit to the data than does model 2 (chi-squared=17.8, nu=6, p<.01). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. In the results for model 4 the eta(m) are moderately correlated: rho(12)=.591, rho(13)=.290, rho(23)=.213.

[a] Overall Teacher Victimization (Minor)

[b] White Teacher Robbery and Attack

[c] Black Teacher Robbery and Attack

*p<.05
**p<.01

no ksi(i) having a significant gamma, and 4% of its variance explained. The differential pattern of influences on different types of victimization suggested by model 5 is masked in the single-factor model.

Results of the two models for junior high student victimization--corresponding to models 2 and 6 of Figures 4 and 8--are shown in Table 31. Again, the three-factor model yields an interesting pattern of results, and it fits the data much better than the single-factor model (chi-squared (d.f. = 6) = 239.8, p. < .001). According to model 6, girls' robbery and attack (eta(1)) is moderately positively influenced by social disorganization and negatively influenced by prosocial school administration. Student theft (eta(2)) is negatively influenced by all three latent predictors, with prosocial school organization having the largest "effect." Finally, boys' robbery and attack (eta(3)) is moderately positively influenced by social disorganization, and more strongly negatively influenced by prosocial school organization. Girls' personal victimization is less well explained than either boys' personal victimization or student theft (17 vs. 23 and 23 percent of the variance in eta(1), eta(3), and eta(2), respectively, accounted for by the ksi(i)).

In contrast to the three-factor model, the one-factor model makes social disorganization appear less important, partly because it has effects with different signs on the different eta(m). And it fails to suggest an influence of permissive affluence and academic orientation, which is suggested in the more complex model for student theft.

Table 30

Structural Parameters (gamma) in the Two Models of Male and Female Reports of Victimization in Senior High Schools

Latent variable and label	Model 1	Model 5		
	Eta 1	Eta 1[a]	Eta 2[b]	Eta 3[c]
Ksi 1 Social disorganization	.239**	.270**	-.065	.104
Ksi 2 Permissive middle-class affluence	-.150*	-.087	-.279**	-.008
Ksi 3 Conventional and academic orientation	-.031	-.067	.289**	-.124
Ksi 4 Vocational training	-.046	-.038	.044	-.097
Ksi 5 Sound school administration	-.249**	-.208**	-.231**	-.077
Residual (Psi)	.855	.870	.779	.959
Chi-squared	2679		2497	
Nu	716		706	

Note. Model 5 provides a better fit to the data than does model 1 (chi-squared=181.1, nu=10, p<.001). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. In model 5 the eta(m) are slightly correlated: rho(12)=.057, rho(13)=.034, rho(23)=-.027.

[a] Boys' Robbery and Attack

[b] Students' Theft

[c] Girls' Robbery and Attack

*p<.01

Results for models predicting black and white students' reports of victimization appear in Tables 32 and 33. Two models for senior high schools--corresponding to models 1 and 7 of Figures 3 and 9--were estimated. Table 32 shows that the four-factor model fits the data better than the one-factor model (chi-squared (d.f. = 15) = 562.8, $p < .001$). Caution should be exercised in interpreting the coefficients reported in this table because the models' fits to the data are exceptionally poor, and the residual variances are so high. In fact, the computer algorithm used in LISREL failed to converge on an acceptable solution after 250 iterations. We can conclude on the basis of this solution that the one-factor model does not do justice to the complexity of student victimizations in senior high schools. The predictions of black reports are better than for whites, and the influence of being located in a socially disorganized area seems to run in different directions for blacks and whites.

Results for junior high school models of black and white student reports--Models 2 and 8 of Figures 4 and 10--are more straightforward. Again, the two-factor model fits the data better than the single-factor model (chi-squared (d.f. = 8) = 284.5, $p < .001$). The results for model 8 imply that social disorganization has a moderate effect on white students' reports of victimization (eta(1)), but that neither of the school characteristic factors affects these reports. Conversely, only prosocial school organization influences black students' reports (eta(2)) according to the two-factor model.

Table 31

Structural Parameters (gamma) in the Two Models of Male and Female Reports of Student Victimization for Junior High Schools

Latent variable and Model	Model 2	Model 6		
	Eta 1	Eta 1 [a]	Eta 2 [b]	Eta 3 [c]
Ksi 1 Social disorganization	.151*	.315**	-.292**	.191**
Ksi 2 Permissive affluence and academic orientation	-.073	-.089	-.164*	.104
Ksi 3 Prosocial school administration	-.359**	-.248**	-.346**	-.425**
Residual (Psi)	.843	.831	.768	.772
Chi-squared	1965		1725	
Nu	538		532	

Note. Model 6 provides a better fit to the data than does model 2 (chi-squared=239.8, nu=6, p<.001). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. The eta(m) in model 6 are modestly correlated: rho(12)=.156, rho(13)=.074, rho(23)=.008.

[a] Girls' Robbery and Attack

[b] Student Theft

[c] Boys' Robbery and Attack

*p<.05
**p<.01

The solution based on the one-factor model closely parallels the results for white students' victimization. Hence, it is partly misleading in light of the differing pattern of predictors for black and white reports.<14>

Discussion

The present report raises several important issues in the measurement of school victimization. These issues all have to do with the construct validity of alternative measures available in the Safe School Study, and they are of general practical and theoretical interest. They are of thooretical interest because understanding the nature of victimization is essential in developing knowledge about its causes. They are of practical interest because knowledge of the correlates and causes of victimization in schools is useful in learning to prevent it, and different varieties may have different roots.

The Need for Better Measures

One reasonably clear implication of the research reported here is that better measures of school disruption are required if we are to do more sophisticated and useful research.

Because there are few independent benchmarks in the Safe School Study data against which to assess the meaning of the victimization reports, their meaning remains unclear. Ample evidence is adduced in this report that reports by black teachers and white teachers may have different meanings,

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14. Refer to Tables 19 and 23 to see that eta(1) for "model 2" of Tables 31 and 33 are really quite different.

Table 32

Structural Parameters (gamma) in the Two Models of Black and White Reports of Student Victimization in Senior High Schools

	Model 1	Model 7			
Latent variable and label	Eta_1	Eta_1[a]	Eta_2[b]	Eta_3[c]	Eta_4[d]
Ksi_1 Social disorganization	-.146	-.137*	.128**	-.146*	-.025
Ksi_2 Permissive middle-class affluence	-.077	-.064	.017	-.273**	.013
Ksi_3 Conventional and academic orientation	-.044	-.051	-.071	.145*	.107
Ksi_4 Vocational training	-.024	-.030	-.018	.014	.068
Ksi_5 Sound school administration	-.185	-.171**	-.013	-.175*	-.082
Residual (Psi)	.936	.945	.978	.853	.976
Chi-squared	3135.9	2573.1			
Nu	716	701			

Note. Estimates reported in this table are from solutions which did not reach convergence after 250 iterations. Model 7 provides a better fit to the data than does model 1 (chi-squared=562.8, nu=15, p<.001). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. The correlations among eta(m) in model 7 range from .009 to .06.

[a] Black Attack and Robbery

[b] White Attack and Robbery

[c] Black Theft

[d] White Theft

*p<.05
**p<.01

Table 33

Structural Parameters (gamma) in the Two Models of Black and White Student Reports of Victimization in Junior High Schools

Latent variable and label	Model 2	Model 8	
	Eta 1	Eta 1 [a]	Eta 2 [b]
Ksi 1 Social disorganization	.345**	.346**	-.135
Ksi 2 Permissive affluence and academic orientation	-.033	-.032	-.126
Ksi 3 Prosocial school organizacion	-.063	-.061	-.192**
Residual (Psi)	.876	.876	.929
Chi-squared	2089.1	1804.5	
Nu	538	530	

Note. Model 8 provides a better fit to the data than does model 2 (chi-squared=284.5, nu=8, p<.001). Because the ksi(n) are uncorrelated (phi=I), the gamma(nm) equal the corresponding zero-order correlations. The eta(m) in model 8 are slightly correlated: rho(12)=-.031.

[a] White Students' Victimization

[b] Black Students' Victimization

**p<.01

likewise for boys and girls. Furthermore, the evidence implies that teacher and student victimization reports measure different phenomena. Exactly what these reports mean, however, remains unclear. In planning future surveys, victimization reports must be supplemented by self-reported delinquent and disruptive behavior, and wherever possible by other objective evidence about the amount of victimization occurring in the school. In addition, because differential social perception may provide an explanation for the differences in the patterns of correlates of reports by different racial groups, information about racial attitudes and perceptions would also be a useful supplement to victimization reports in future surveys.

A second implication can be drawn from the portions of this research that estimate reliabilities for the various measures. Many more persons per school must be involved in reporting their experiences if adequately reliable measures are to be obtained. Much of the "victimization" which occurs in schools involves minor indignities: smartass remarks or gestures, one boy forcefully asking another for a quarter, a notebook lifted from someone's desk. More serious victimizations are relatively rare. This makes the task of measuring them difficult, and it implies that many more persons must be surveyed per school to gain reliable estimates. The increase in reliability that can be gained by increasing the number of persons reporting is illustrated in research by Grant and Grant (1980), who aggregated reports for 100 to 200 students per school and obtained estimated

reliability coefficients in the .80's and .90's. These contrast sharply with those in the present research (Table 5).

Implications of the Models

Worries about the construct validity of the victimization reports, and the cross-sectional, measurement-based nature of the research are serious limitations in the present research. Despite these inherent limitations, we have extended the earlier research on the correlates of school victimization in important ways in this report. We have more carefully examined alternative measures of school victimization than has been previously attempted. And, we have used more sophisticated modeling techniques to provide insight into school social organization and victimization.

These models assume that it is useful to think of a small number of underlying factors of school organization which account for a larger number of observed variables. This contrasts with earlier research (Gottfredson & Daiger, 1979) that attempted to build statistical models of delinquency using a large number of predictors of rather specific dimensions, many of which were highly correlated with each other. Those high correlations among predictors make discerning the relative relations of major underlying dimensions (or second order factors) of school characteristics with victimization reports difficult to discern. These relations are easier to see in the present results.

As in other research using statistical models to understand or explain social phenomena, the structure of the results depends in large part on the specification of the

model. These models postulate certain causal structures, and examine the consequences of those structures. The results are constrained by the data, to be sure. But the results depend strongly on the judgments made in constructing the models. In constructing these models we have assumed that mutual causation (such as victimization causing school administration as well as vice versa) does not exist. Although we regard this assumption as reasonable, it may be false. These and other details of the models examined, and the passive analysis of data in which no experimental manipulation of independent variables occurred, make the research subject to speculations about other statistical models which may also fit the data reasonably well. Examining such alternative speculations is an important set of items on a research agenda. Our best current judgments about model specification are incorporated in the present research, but because judgment has been involved, these results must be interpreted cautiously. With these caveats in mind, the models used here have several important implications, including the following:

1. Social disorganization--measured by such school characteristics as a high proportion of students behind grade level in reading, many students from families on welfare, a high proportion of minority students; and such community characteristics as high unemployment, high crime, much poverty and unemployment, and many female-headed households--is strongly linked to the victimization reports of white teachers, and is the only dependable predictor of ser-

ious teacher victimization. Although the link is not as strong as for white teachers, social disorganization is also a fairly potent predictor of black teacher victimization reports, and the reports of personal victimization (robberies and attacks) of male and female students. Social disorganization negatively influences student reports of theft. Earlier research (Gottfredson & Daiger, 1979) which did not suggest much influence of social disorganization on student victimization reports is probably due to combining into a single measure kinds of victimization reports which are related to social disorganization in different ways.

2. The soundness of a school's administration--indexed by measures of teacher-administration cooperation, ratings of the principal's behavior, the perceived fairness and clarity of the school rules, and student influence on the way the school is run and their attachment to the school--is linked to teacher reports of victimization in both junior and senior high schools (and to the reports of both black and white teachers in the senior high analyses). Furthermore, the soundness of school administration is linked with all measures of student victimization in both junior and senior high schools, except for the reports of girls in senior high schools of robberies and attacks which are relatively unpredictable by any school or community characteristic. The models always imply that the better the administration the less the victimization. The present results imply a reasonably strong effect of the way a school is run on victimization rates that was obscured in earlier results using a large number of correlated predictors.

3. Middle class affluence (for senior high schools) or affluence and academic orientation (for junior high schools) is a factor of school organization measured by such variables as community affluence and education, teacher educational level, and others (see Tables 21 and 23). These factors positively influence teacher victimization reports (except for serious victimization in high schools and white victimization reports in junior high schools). These same factors negatively influence student reports of theft in both junior and senior high schools.

4. In academically oriented (or college preparatory emphasis) high schools, teachers report less victimization, but students report more theft.

5. A vocational training emphasis appears essentially unrelated to victimization reports.

This report adds to knowledge about school disruption by implying that it is not a unidimensional construct. Several distinct dimensions of victimization can be measured, and these different dimensions are not all related to the postulated causal factors in the same way. And, this strengthens the suggestion of earlier research (Gottfredson & Daiger, 1979; Grant, Grant, Daniels, Neto, & Yamasaki, 1979; Burack & Downing, 1980; NIE, 1978), reviews (Johnson, Bird, & Little, 1979; Weis & Hawkins, 1980), and practical experience (Howard, 1978; Woodall, 1979) that school social administrative practices contribute to the level of disruption a school experiences even though a host of studentry characteristics and the community environment are also major determinants of disruption in a school.

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