RESEARCH TRIANGLE INSTITUTE

RTI/3321-01F

ESTIMATION OF EXTENDED PERIOD VICTIMIZATION RISK

by

James J. Collins
Brenda G. Cox
Ronaldo Iachan

Research Triangle Institute
Research Triangle Park, NC 27709

eport was prepared for the Bureau of Justice Statistics, U.S. Depart-
Justice, under Grant No. 85-BJ-CX-0003. Points of view or opinions
in this document are those of the authors and do not necessarily
nt the official position or policies of the Department of Justice.

May 1986

POST OFFICE BOX 12194 RESEARCH TRIANGLE PARK, NORTH CAROLINA 27709

ESTIMATION OF EXTENDED PERIOD VICTIMIZATION RISK

TABLE OF CONTENTS

LIST OF TABLES

LIST OF EXHIBITS

1. BACKGROUND AND LITERATURE

Prevalence measures estimate the proportion of a designated population having a characteristic, condition or experience within a specified time period. The population is usually delimited by geography and may be further classified by factors such as location of residence, type of occupation or individual attributes. Prevalence measures may refer to health conditions, employment, crime victimization or other aspects of well-being or personal experience. When prevalence measures refer to entire lifetimes, rates are usually broken down by age (yielding rates such as the percentage of the population under 18 that has been arrested). There are a number of reasons for studying the prevalence of personal crime victimizations. Prevalence and incidence rates usually differ from each other, and it is important to know how many individuals are victimized and how victimizations are distributed within victim groups characterized by factors such as age, race and residence location.

Crime research has shown that some offenders commit a disproportionately large number of serious crimes (Peterson and Braiker, 1980; Wolfgang, 1983). Similarly, health research has shown that a small percentage of the population uses a high percentage of health care resources (Congressional Budget Office, 1982; McCall and Wai, 1983). There is also much evidence that victimizations are not randomly distributed in the population. Analyses indicate that demographic and a variety of other factors such as employment vary systematically with victimization rates (BJS, 1985a; Cox & Collins, 1985; Hindelang et al., 1978). These findings suggest that some categories of people are at high risk of victimization.

Criminologists, individuals, and groups are concerned about protecting victims and potential victims. Special attention to individuals in high risk categories would provide important insights into the etiology of crime victimization. Identification of high risk victim categories would also provide an opportunity to efficiently focus victim prevention and victim assistance resources.

For operational reasons, population-based prevalence estimates have not commonly been used in crime or victimization research. Prevalences are not easily generated from the official crime data often used for analyses because of the way the data are accumulated and recorded. The Uniform Crime Reports (UCR) include incidents reported to the police and persons arrested. Annual UCR data summarize arrests but do not give the counts of unique individuals arrested that are necessary to compute prevalence rates or indicate how many times each person was arrested that year. The case is usually the unit of analysis for juvenile or adult court data, and individuals often have more than one court case in the time period of interest. Admissions to jail or prison are often the units of analysis in correctional research, and these numbers do not take account of multiple admissions of the same person within a time period.

Some crime research over the years has focused on prevalence. Ball, Ross and Simpson (1964) distinguished the 236 first-time delinquents from the total of 363 delinquents who appeared before the juvenile court in Fayette County, Kentucky in 1960 in order to generate prevalence estimates. The authors were interested in the risk of a juvenile court appearance before age 18. Wolfgang, Figlio and Sellin (1972) estimated that 35 percent of a 1945 Philadelphia birth cohort had at last one officially recorded police contact before age 18. Elliott and Huizinga (1984), Gordon

(1973, 1976) and Gordon and Gleser (1974) provide examples of other research that has examined prevalence aspects of delinquency and crime. Langan (1985) uses a life table methodology to suggest that while only 0.2 percent of U.S. adults are confined in state prisons on any given day, between 1.7-2.7 percent are imprisoned during their lifetimes.

Recently, attention has been focused on "households touched by crime." This indicator provides an annual victimization prevalence estimate for households using National Crime Survey (NCS) data (BJS, 1985b), but most data provided from the NCS are based on victimization rates or incident counts (BJS, 1980, 1985a). Hindelang, Gottfredson and Garofalo (1978) are an exception; they examined correlates of the likelihood of victimization and found that the nonseries personal victimization rate for eight cities was 60 per 1,000 persons aged 12 and older. The likelihood (prevalence) of one or more nonseries victimizations for the same data was 51 per 1,000. Lehman and Linn (1984) found that 33 percent of 278 former mental patients were robbed and/or assaulted in the year before the interview, a rate that far exceeds the general population rate. The NCS document the authors used for comparison purposes (BJS, 1981), however, provides victimization rates rather than prevalence estimates.

Using the 1978-82 National Crime Survey data, Langan and Innes (1985) estimated that 3 percent of all Americans are violently victimized in a year's time. Lifetime risk of violent victimization is, of course, far higher. Langan and Innes noted, for example, that "an American has a 1 in 10,000 chance of being murdered in a single year but a 1 in 133 chance in an entire lifetime."

The prevalence with which people experience serious criminal victimization during their lifetimes is an important social statistic that is not

properly reflected in one-year victimization prevalence estimates. Some types of victimization experiences undoubtedly have long-term effects on attitudes and behavior. Victims' reactions during robberies--the tendency to resist and the type of resistance--may be influenced by whether they have been robbed previously. Other behaviors, such as willingness to venture onto the street at night, may be affected by lifetime victimization experience. First time and subsequent victimization experiences may also vary by victim characteristics. Being victimized may affect people differently. It would not be surprising if the impact of victimization on older persons' lifestyles was especially marked.

Without prospective longitudinal data, lifetime and extended time period victimization must be estimated by retrospective reports. Recalling victimizations that occurred many years before, however, may be a formidable cognitive task. Careful attention must be given to the types of victimization that should be measured, the time period over which estimates should be attempted, and the victimization event characteristics that should be gathered.

The key elements for estimation of lifetime victimization risk from cross-sectional data are whether and when particular types of victimization occurred. The first victimization is of particular interest. For individuals reporting victimization in the current year, it must be determined whether an earlier victimization of the same type had occurred. If none is reported, the current victimization is considered the first. With age-specific first-time victimization data, lifetime victimization risks can be computed using a life table estimation methodology (Shryock, Siegel, & Associates, 1971).

As a partial test of the feasibility of estimating lifetime victimization risk from cross-sectional survey data, several questions were added to a 1983 victimization survey of District of Columbia household residents and Capitol Hill employees.* Because only victimization experience at their current jobs was of interest, victimization experience was limited to the period "while you were employed at the job we have been discussing." Thus, the extended period victimization estimates are not lifetime measures but measures of "risk of victimization during current employment" (RVCE). The RVCE estimates are analyzed here to gain insights into the potential of the approach and to explore the methodological and estimation problems of developing lifetime victimization risk estimates from cross-sectional survey data.

*Results of these surveys are reported in Cox and Collins (1985). A description of the study methodology is provided in Appendix A.

2. VICTIMIZATION RISK AND EMPLOYMENT

To gain information to aid Congress and DC law enforcement agencies in reducing crime in the Nation's Capital, Congress mandated a study to assess the degree to which Capitol Hill employees were victimized and to compare their victimization experience to that of employed DC area residents. Capitol Hill employees were perceived to be subject to higher levels of victimization. Study results indicated that the perception was correct for personal crimes of theft or damage (231.4 per 1,000 Capitol Hill employees vs 198.2 per 1,000 employed DC area residents).

During study planning, concern was expressed as to whether or not the sample size was large enough and the 12-month reporting period long enough to determine the differences in victimization for Capitol Hill employees. Rather than increase the cross-sectional sample or conduct a longitudinal study, it was decided to elongate the period for which data were collected. In the final study plan, clients were asked to report victimizations committed against them from the beginning of their current employment to the date of the interview. A life table methodology was adapted to measure this risk over the entire period of employment.

Respondents in the DC study were asked to list victimizations committed against them between January 1982 and the date of interview. Although detailed analyses were only performed for those victimizations occurring between May 1982 and April 1983, all crimes committed after 1982 could be categorized by type of crime. The DC study questionnaire included the following question on victimizations prior to 1982, :

> I have already asked about crimes that occurred to you in 1982 and 1983. Now I'd like to determine if any crimes happened to you prior to this time while you were employed at the job we have been discussing. I will not need details about any crimes you

mention. From the time you began the job in (YEAR) until the end of 1981, did any of the following crimes happen to you?

		YES	NO
a.	a physical attack or physical threat against you personally?	1	2
b.	break-in, attempted break-in, or illegal entry of your home or lodgings?	1	2
c.	theft or attempted theft of property belonging to you personally or your entire household?	1	2
d.	deliberate damage or setting fire to your home or belongings?	1	2

Again, the focus was on crimes that happened during the time period of current employment. Hence, these questions were not asked of persons not employed or hired after 1981.

This question sequence together with the listings for crimes after 1981 allowed the determination of the percentage of employees (1) ever victimized while at their current place of employment, (2) victimized between May 1982 and April 1983, and (3) first victimized during the analysis period.

Three periods of victimization were specified as: (1) prior to 1982, (2) January 1982 to April 1982, and (3) May 1982 to April 1983. These three indicators and the previous three analysis indicators differ because the study data were not collected in identical ways. The percentage of employees victimized at their current place of employment was determined using the question sequence given earlier. Data records were available for each victimization mentioned in the second two time periods. More data were obtained for victimizations occurring from May 1982 to April 1983. Data items common to both time periods were examined, and the closest match was determined for the crime categories in the question sequence. Counts

of data records falling into each crime category were used to set the 0-1 indicator variables. The fact that the three indicators were based upon two different approaches (an ever-victimized question vs. a crime counting operation) could lead to discrepancies between the two data sets. This is not thought to be an important problem.

All three indicators were for victimizations occurring during the time period that the employee was at his current job. When the employee was not employed during a time period, the indicators were set to zero (for none). The month and day of employment for persons hired after 1981 were not gathered. Time periods and victimization rates for these employees are, therefore, inexact. The proper value for the January to April 1982 indicator for an employee hired in 1982, for example, would depend on the month of employment, but that was unknown.

2.1 Victimization Prevalence as a Function of Length of Employment

Table 2.1 shows three assault or attempted assault prevalence estimates: ever victimized, victimized between May 1982 and April 1983, and victimized for the first time during the May 1982 to April 1983 period.* Prevalence rates are given for Capitol Hill employees and employed DC area residents (hereafter referred to as DC area employees). The total rows in the table indicate that assaults or attempted assaults were committed on 15 and 16 percent of the two employee groups at some time during their current employment. The ever assaulted prevalences range from 6 to 25 percent, rising with length of employment at the current job, although this is not

*Standard error tables for the victimization prevalence tables in this chapter are included in Appendix B.

Table 2.1 Victimization Prevalence as a Function of Length of Employment: Assault or Attempted Assault

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	6.31	6.31	6.31
1982	322	4,463	10.51	8.38	8.10
1981	280	3,861	11.51	6.51	6.13
1980	143	1,970	19.60	10.69	10.06
1978-79	215	2,940	17.34	5.73	4.23
1976-77	169	2,287	19.75	6.89	4.42
1974-75	143	1,973	17.99	4.12	4.12
1972-73	121	1,647	18.47	4.40	3.49
1970-71	91	1,220	24.96	5.57	5.57
1960-69	201	2,694	23.43	3.38	2.46
Before 1960	57	749	10.29	0.00	0.00
Total	1,872	25,639	15.79	6.20	5.50
Employed DC Area Residents:					
1983	259	120,087	8.28	8.28	8.28
1982	796	385,505	9.08	6.69	6.54
1981	448	215,362	14.56	9.02	7.49
1980	360	167,621	14.90	7.79	6.59
1978-79	521	247,060	16.36	7.71	5.93
1976-77	243	116,224	10.51	2.78	2.78
1974-75	218	102,487	18.31	6.10	3.99
1972-73	191	90,857	23.92	6.71	4.13
1970-71	168	85,049	23.82	7.96	6.49
1960-69	499	232,350	17.63	2.91	2.16
Before 1960	171	83,953	22.57	4.58	4.03
Total	3,874	1,846,553	14.87	6.51	5.52

observed for the 57 Capitol Hill employees in the sample who began their current jobs before 1960. This could reflect a historical difference in the risk of victimization. The standard error of that estimate (Table B.1) is comparatively high, however, and it is likely that the lower ever-assaulted percentage is imprecise because the sample of Capitol Hill employees who started work before 1960 is so small.

The percentages of Capitol Hill and DC area employees who experienced an assault or attempt in the 1982-83 time period range from 0 to 11 percent. These percentages tend to be higher for those hired more recently. This may be because newer employees are younger, and younger people are more likely to be assault victims (BJS, 1985a). This hypothesis is not specifically tested here due to sample size limitations.

The percentages first victimized by assault in the 1982-83 period range from 0 to 10 percent. People hired more recently had higher first-time victimizations in 1982-83 than those hired earlier. As expected, as length of employment increased, the probability of first victimization in the current year decreased.

Differences in assault victimization prevalences for Capitol Hill and employed DC area residents cannot be compared for two reasons. First, the prevalence rates for Capitol Hill and DC area employees in the same year of employment are inconsistent. In some cases, the rates for Capitol Hill employees are higher; in other cases the DC area employees' rates are higher. Second, reference to Table B.1 in Appendix B shows that the standard errors of the Table 2.1 estimates are so high that the differences between the employee groups will not be statistically significant.

Table 2.2 shows the prevalence estimates for burglary or attempted burglary. Total ever-victimized prevalences are 21 percent for Capitol Hill employees and 18 percent for DC area employees; the 1982-83 percentages were 7 and 5 percent, respectively. Ever-victimized prevalences range from 9 to 34 percent, generally rising with the length of employment. The percentages experiencing burglary during the 1982-83 period range from 3 to 10 percent for the various years employed. First-time burglary prevalence rates range from 2 to 10 percent; totals range from 4 to 6 percent.

We hypothesized before that long-term employees' lower rates of victimization were an age effect. The decline in victimization rates by years of employment seen for assault was repeated for burglary, though at a lower rate. These declines are consistent with known relationships between age and victimization; that is, as age increases, the incidence of victimization generally declines.

Capitol Hill employees are apparently more likely to be burglary victims than DC area employees either ever or in most years of employment prior to 1981 or 1982. This interpretation must be tentative because the large standard errors result in nonsignificant differences.

The prevalence estimates for theft or attempted theft in Table 2.3 are higher than those for assault and burglary. Two-thirds of DC area employees who started work at their current job before 1960 experienced a theft or attempted theft victimization. The ever-victimized percentages range between 25 and 67 percent and increase with length of employment. The theft victimization prevalence for 1982-83 ranges from 14 to 27 percent and averages more than 20 percent. The association of lower 1982-83 theft prevalence with longer employment is similar to the patterns observed

Table 2.2 Victimization Prevalence as a Function of Length of Employment: Burglary or Attempted Burglary

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	9.19	9.19	9.19
1982	322	4,463	10.05	6.40	5.75
1981	280	3,861	16.98	8.80	8.09
1980	143	1,970	18.77	7.72	6.99
1978-79	215	2,940	21.50	7.63	6.22
1976-77	169	2,287	27.33	7.34	6.13
1974-75	143	1,973	29.18	4.81	4.15
1972-73	121	1,647	24.08	5.60	1.63
1970-71	91	1,220	25.76	9.91	7.54
1960-69	201	2,694	33.83	7.74	2.32
Before 1960	57	749	27.96	3.59	1.66
Total	1,872	25,639	20.70	7.34	5.75
Employed DC Area Residents:					
1983	259	120,087	9.81	9.81	9.81
1982	796	385,505	8.63	6.16	5.49
1981	448	215,362	12.62	8.30	8.09
1980	360	167,621	9.00	2.57	1.69
1978-79	521	247,060	16.52	4.53	3.51
1976-77	243	116,224	19.83	5.36	3.11
1974-75	218	102,487	20.56	4.85	4.28
1972-73	191	90,857	25.79	3.38	3.05
1970-71	168	85,049	25.53	3.63	2.08
19660-69	499	232,350	33.73	5.33	2.42
Before 1960	171	83,953	32.58	4.66	2.66
Total	3,874	1,846,553	17.50	5.56	4.46

Table 2.3 Victimization Prevalence as a Function of Length of Employment: Theft or Attempted Theft

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	25.37	25.37	25.37
1982	322	4,463	30.49	23.07	20.90
1981	280	3,861	37.88	26.68	18.61
1980	143	1,970	41.19	23.83	14.08
1978-79	215	2,940	48.77	22.05	12.47
1976-77	169	2,287	53.46	23.07	12.00
1974-75	143	1,973	58.70	21.98	10.50
1972-73	121	1,647	60.90	22.81	8.84
1970-71	91	1,220	57.74	22.31	8.62
1960-69	201	2,694	61.98	17.97	6.26
Before 1960	57	749	59.94	13.80	5.25
Total	1,872	25,639	45.79	22.78	14.43
Employed DC Area Residents:					
1983	259	120,087	27.22	27.22	27.22
1982	796	385,505	26.90	20.90	18.26
1981	448	215,362	32.89	23.42	18.09
1980	360	167,621	35.97	20.64	14.15
1978-79	521	247,060	44.44	20.88	13.66
1976-77	243	116,224	43.99	17.76	8.75
1974-75	218	102,487	46.25	17.75	9.79
1972-73	191	90,857	57.87	18.42	7.78
1970-71	168	85,049	59.67	25.11	11.93
1960-69	449	232,350	58.47	19.69	6.09
Before 1960	171	83,953	66.57	18.63	8.59
Total	3,874	1,846,553	41.75	21.02	13.99

earlier. The first-time theft victimization prevalences average approximately 14 percent, and range from 8 to 27 percent. Rates generally decline with length of employment.

Ever-victimized prevalence rates for theft or attempted theft for Capitol Hill employees are usually higher than these rates for DC area employees. Because of standard errors, the differences are not statistically significant.

Table 2.4 shows vandalism prevalences are roughly similar to those for burglary in the ever-victimized category. The average is between 20 and 24 percent, and the range is between 15 and 30 percent. However, recent and first victimization prevalence estimates for vandalism are higher than for burglary. Averages for these two recent prevalence categories are between 10 and 14 percent; ranges vary from 5 to 17 percent. The rates for Capitol Hill and other employees are essentially the same.

2.2 Risk of Victimization at Current Employment

As noted earlier, longitudinal data would be necessary to measure directly the risk of victimization during current employment. However, the DC study data can be used to develop model-based estimates of this risk using a life table approach commonly used by demographers. This approach has recently been used to estimate lifetime prevalence of crimes in studies by Ball, Ross, and Simpson (1964); Belkin, Blumstein, and Glass (1973); Gordon and Gleser (1974); Gordon (1976); and Langan (1985).

Using the life table approach, the population was partitioned into cohorts by year of employment and first victimization between May 1982 to April 1983, the most recent 12-month period for which all sample members provided data. The prevalences of first victimization were cumulated over years of employment to produce the RVCE estimate (i.e., the risk of victimization over current employment).

Table 2.4 Victimization Prevalence as a Function of Length of Employment: Vandalism

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	15.34	15.34	15.34
1982	322	4,463	18.06	12.90	12.01
1981	280	3,861	24.80	16.19	12.67
1980	143	1,970	27.46	15.76	10.77
1978-79	215	2,940	21.49	11.71	9.30
1976-77	169	2,287	29.45	17.38	14.94
1974-75	143	1,973	30.38	10.99	5.51
1972-73	121	1,647	28.44	13.64	10.56
1970-71	91	1,220	26.88	13.97	9.80
1960-69	201	2,694	28.18	12.37	9.28
Before 1960	57	749	30.24	14.15	10.29
Total	1,872	25,639	24.46	13.99	11.16
Employed DC Area Residents:					
1983	259	120,087	13.26	13.26	13.26
1982	796	385,505	15.89	12.45	11.00
1981	448	215,362	19.93	14.09	12.19
1980	360	167,621	19.23	12.44	10.88
1978-79	521	247,060	23.93	14.56	12.12
1976-77	243	116,224	21.30	9.53	7.39
1974-75	218	102,487	19.67	9.90	7.43
1972-73	191	90,857	22.79	9.67	5.73
1970-71	168	85,049	30.42	16.91	14.84
1960-69	449	232,350	22.04	9.08	5.39
Before 1960	171	83,953	27.65	9.73	7.00
Total	3,874	1,846,553	20.44	12.17	10.03

The RVCE formulation is as valid as its underlying model. In this case, victimization rates are assumed to be stable over time; the prevalences of first victimization in each of the years of service for the sample, then, are used to estimate the probability of first victimization for the population of employees for these years of service.

The assumption that victimization rates are stable over time, and, thus, that victimization prevalence estimates projected from such rates accurately reflect current victimization risk is not tested here. In fact, criminological research suggests crime rates are not stable over long periods of time. For one thing, the age distribution of the population is not stable over time, and age is a strong correlate of both offending and victimization. (The age by years employed distribution may also vary over time.) Urbanization is associated with higher crime rates, and U.S. society has become increasingly urbanized over the years. Any number of variable social structural conditions may influence crime and victimization. Behavior at the individual level also changes over time. For example, the extent and type of leisure time activities have changed markedly since World War II.

One can thus argue that life table estimation approaches will be inaccurate due to social and individual change. Without disagreeing that crime and victimization experience will change over time, it can also be argued that life table estimation is useful for a number of reasons:

- social change occurs slowly and thus will not affect estimates markedly for short time periods;
- estimates can be corrected for changes in known victimization correlates;

- if life table estimates are routinely or periodically generated, contemporary estimates will reflect new social and behavioral changes; and
- given the high cost and extended time required for true longitudinal estimations, the life table approach can be a viable alternative.

2.2.1 Conceptual Formulation

The parameter of interest, namely the risk of victimization during current employment, may be decomposed as follows:

P(victimization at current employment)

= P(first victimization during first year of employment) × P(first year of work) +

P(first victimization during second year of employment × P(works second year) +

P(first victimization during third year of employment) × P(works third year) + etc.

$$= \sum_i P_i W_i \qquad (2.1)$$

the sum ranging over all years of employment. Here, we have defined

P_i = the conditional probability of first victimization during year-i of employment given continuous work (at the same job) up to that time, and

W_i = the probability of continuous work up to year-i.

The measure of victimization risk suggested in this study, the RVCE, estimates P_i and W_i as

p_i = the percent of the cohort-i sample respondents that report first-victimization in the study period, and

w_i = the proportion of the sample with i years or more at the current job.

Explicitly,

$$\text{RVCE} = \sum_i p_i w_i \qquad (2.2)$$

the sum ranging over all m cohorts based on year of employment. The weights w_i were obtained from the cohort population sizes N_i, given in Tables 2.1-2.4, by cumulating the fractions of the sample in each cohort, $f_i = N_i/N$. That is,

$$w_i = \sum_{j=1}^{i} f_j .$$

RVCEs were computed following (2.2) and using the percentages in Tables 2.1-2.4. The sampling variances of the RVCE estimates were approximated by the sum of the weights squared times the variance of the cohort estimated percentage first victimized.

2.2.2 RVCE Findings

Table 2.5 presents the estimated RVCEs for the four categories of crime and the two employee groups. The RVCE is computed in each case as a weighted aggregate of the (estimated) percentage first victimized in the period May 1982 to April 1983. The RVCE findings are discussed in this section. In the next section, methodological problems related to this approach are discussed together with a re-examination of the results. The problems include possible large sampling and nonsampling (response) errors in the suggested lifetime risk estimation.

The cumulative nature of the RVCE makes the sampling errors for RVCE estimates large. With 1,872 Capitol Hill employees and 3,874 employed DC area residents in the sample, the estimated standard errors of the RVCEs are between 12 to 28 percent of the RVCE (Table 2.5).

Table 2.5 Risk of Victimization at Current Employment

Type of Crime	Capitol Hill Employees		Employed DC Area Residents	
	RVCE	Standard Error	RVCE	Standard Error
Assaults and Attempts	32.1%	9.1%	32.3%	6.9%
Burglaries and Attempts	34.1	9.4	28.0	6.6
Theft and Attempts	87.0	14.0	85.8	10.5
Vandalism	61.3	12.4	56.5	9.2

Approximately one-third of Capitol Hill and DC area employees experienced an assault or attempted assault while they were employed at their current jobs. Burglary victimization prevalence was similar; 34 percent of Capitol Hill employees and 28 percent of DC area employees had experienced a burglary or an attempt. The theft and attempted theft prevalence was much higher--between 86 and 87 percent. Fifty-seven to 61 percent of the two employee groups experienced a vandalism victimization while employed at their current jobs. There are no significant differences in the cumulative victimization experiences of the two employee groups.

While we have not computed a total victimization prevalence rate, it is clear from the individual category prevalences that virtually everyone will experience a victimization of some kind while employed at their current jobs. This finding gives a different perspective from one that is gotten by examining one-year victimization rates. The finding suggests lifetime or extended time period victimization estimates would be an important addition to the nation's social indicator repertoire.

2.2.3 Recall Bias

Recall bias, or more specifically forgetting events that occurred several years before, may inflate first-victimized estimates and, hence, inflate the RVCE. More explicitly, if a respondent forgets old incidents, recent victimizations may be inaccurately labeled as the first. This suggests the following hypotheses:

(1) "% first victimized" is an over estimate (thus, so is the RVCE);

(2) "% ever victimized" is an under estimate.

The extent of recall bias and the resulting under- or over-estimation of victimization risk are expected to decrease with the saliency of the event.* The results reported in Table 2.5 seem to support this conjecture because the RVCE is largest for theft (or attempted theft) and for vandalism. The estimated lifetime risk in those two cases, though large, may be reasonable because it is known that these offenses occur with comparatively high frequency. No data are available to judge the validity of the estimates.

These results for theft and vandalism may be contrasted with those for the more threatening crimes of assault (or attempted assault) and burglary (or attempted burglary). The RVCEs for assault and burglary range from 28 to 34 percent. Confining lifetime risk estimates to more salient victimization types may, then, be recommended.

2.2.4 The Effect of Age and Passage of Time

Age and the effect of passage of time on recall have confounding effects on ever, current, and first time victimization estimates. Older people are less likely to be victimized than younger people in any current time period. A cumulative ever-victimized figure would be higher for older than for younger people, however, because of more years at risk. On the other hand, events that happened long before are not remembered as well as recent events. Exhibit 1 illustrates the hypothesized age/ passage-of-time effects, through victimization risk and recall, on the various estimates. (The hypothesized effects assume that longer employment is associated with being older.)

---

*Salience is also closely related to seriousness of a victimization in terms of threat or harm to the victim and the severity of legal sanctions that may be applied to the offender.

Exhibit 1. Hypothesized Age Effects on Victimization Risk and Recall

Effect of Age	Ever Victimized	Current Victimization	First Time Victimization	Ratio of Ever to First Time Victimization
Victimization risk	increase	reduce	reduce	increase
Victimization recall	reduce	no effect or telescoping	increase	reduce

It can be noted from Exhibit 1 that the age/time-related effects of risk and recall on the victimization estimates are opposites in three of the four categories. The magnitude of the opposing effects are not known, but their directions may assist in interpreting the estimates in the tables. All of the tables (2.1 - 2.4) show that the percentage ever victimized increases with duration of employment. Ever-victimized rates may be underestimates due to memory decay, but there is no reason to believe current estimates are inaccurate. The decline in current victimization with length of employment, therefore, most likely reflects the reduced victimization associated with age.

First-time victimization estimates also show a downward trend with years of employment. In this case, interpretation is more complicated due to conflicting effects. Higher first-time victimization rates are expected for newer employees because they had been potential victims for fewer years. On the other hand, those employed longer probably forgot some earlier victimizations and reported current victimizations as their first. Thus, reported first-time victimizations are probably overstated for those employed longer. The lower first-time percentages for long-term employees suggest that risk is a more important determinant of victimization report than recall.

2.2.5 Diagnostic Statistic

Suppose the victimization probability (or prevalence) is the same during the reference period for all cohorts interviewed, and that it had been, in fact, uniform in all employment periods. Then divide the percentage ever-victimized (column 1 of each of Tables 2.1 to 2.4) by the percentage first victimized between May 1982 and April 1983 (column 3 of each table) to yield, in the absence of response errors, the approximate

age of the cohort. Age would be defined as the total time at the current employment at the time of interview.

The product of this calculation is expected to be approximately the same for different crime types. The variance of the ratio from the cohort "age", t, in certain years indicates, discounting sampling variability, two possible confounded effects, namely:

(a) recall bias due to telescoping and to omission;

(b) panel age effect where time-at-job is related to chronological age (in turn, correlated to victimization prevalence).

In (a), omission and forward telescoping have opposing effects. Forgetfulness means past events are not reported; telescoping means past events are mistakenly reported in recent time periods. Assuming uniform-victimizations and no response error, forgetting old events, believed to be the more important effect, means ever-victimizations are underreported. That is, the numerator of the ratio (1) ÷ (3) would be too low for "older" cohorts. In (b), "older" cohorts would tend to provide erroneously low first-victimization reports. The low numerator of the ratio statistic [(1) ÷ (3)] for "older" cohorts might compensate for the recall bias effect, leaving the ratio roughly unaltered and still approximately equal to the panel age, t.

The use of current employment to define a cohort may produce an extended period victimization risk estimate with unknown bias. Unlike birth/death in a literal sense, which may be used in the NCS for cohort definition underlying that of a retrospective (cumulative) lifetime risk, an individual may enter successive states and places of employment. This could involve unique recall and estimation problems.

Table 2.6 Victimization Prevalence - Ratio of Percent Ever-Victimized to Percent First-Victimized 5/82-4/83 for Capitol Hill Employees

Year Employed	Cohort Age (t)	Ratio Statistic			
		Assault (or attempted)	Burglary (or attempted)	Theft (or attempted)	Vandalism
1982	1	1.30	1.75	1.46	1.50
1981	2	1.88	2.10	1.42	1.96
1980	3	1.95	2.68	2.92	2.55
1978-79	4.5	4.10	3.46	3.91	2.31
1976-77	6.5	4.46	4.46	4.45	1.97
1974-75	8.5	4.37	7.03	5.59	4.72
1972-73	10.5	5.29	14.77	6.89	2.69
1970-71	12.5	4.48	3.42	6.70	2.74

The ratio statistics for the four victimization categories examined for Capitol Hill employees are shown in Table 2.6 as an illustration. Any sizable jumps in the ratio statistic may demonstrate one of the mentioned effects, particularly recall bias (omission of past events). Examples worth noting include the reports of vandalism for persons hired around years 1974-75, and the reports of burglary (or attempted burglary) for the cohort hired in or around 1972-73.

The ratio statistics shown in Table 2.6 result from dividing the percentage of Capitol Hill employees first victimized into the percentage ever victimized for the four offense categories. Exhibit 1 suggests that age-related risk factors increase the ratio, and that age-related recall effects reduce the ratio. The ratios in Table 2.6 increase with length of employment because lifetime victimization experience is large relative to first-time victimization incidence as age increases. The ratios suggest that forgetting first-time victimizations (the expected recall effect) does not offset the reduced risk that comes with age.

All but one of the ratios in Table 2.6 range between 1.3 and 7.03. The statistic for burglary for Capitol Hill employees who started work in 1972-73 is much higher. Reference to Table 2.2 indicates this is a result of a very low percentage of those respondents (1.6 percent) reporting first-time victimization (the denominator in the ratio statistic) in the study period.

3. CONCLUDING REMARKS

The study of victimization over time introduces research questions that cannot be adequately addressed by present data sets. Examples include: How do extended period victimization risk estimates vary by individual characteristics? Is the systematic variation by individual characteristics the same for extended and one year risk estimates? What is the probability that an individual will be victimized during his lifetime? Does past victimization alter an individual's reaction to subsequent victimization? Questions such as these could be addressed with retrospective data.

The authors believe that estimation of lifetime prevalence rates should be considered for use in the National Crime Survey. The approach used in this report could be adapted to estimate lifetime risk if survey respondents can correctly recall whether or not they have been victimized in the past. The initial step would be to incorporate past-victimization questions into the survey for a pretest sample. One way to do this would be to add the questions to the end of the questionnaire for individuals who were about to be rotated out of the survey. Then, data from past waves of data collection could be used as a partial test of the validity of the respondent's response to the ever-been-victimized-before question. Analysis of the data would permit a more comprehensive assessment of recall and estimation problems than has been possible with the data from the current study.

More serious crimes are more likely to be remembered. The usefulness of this approach to estimating lifetime prevalence should be tested by including crimes of varying degrees of seriousness.

Definitional problems should also be considered in setting up the pretest. For instance, the NCS includes break-ins to sheds and other outbuildings as burglaries. Would respondents consider these as burglaries without being instructed to do so?

Lifetime prevalence rates for serious forms of victimization (e.g., robbery, burglary) could be valuable information for policymakers and criminologists. Lifetime prevalence is a straightforward notion that is a simple and easily communicated approximation of risk. By focusing attention on the individual victim rather than the victimization event, personal and behavioral factors that are associated with victimization can be better understood. This can increase the opportunities for prevention.

REFERENCES

Ball, J., Ross, A., & Simpson, A. (1964). Incidence and Estimated Prevalence of Recorded Delinquency in a Metropolitan Area. American Sociological Review, 29(1), 90-93.

Belkin, J., Blumstein, A., & Glass, W. (1973). Recidivism as a Feedback Process: An Analytical Model and Empirical Validation. Journal of Criminal Justice, 1, 7-26.

Bureau of Justice Statistics. (1980). Intimate Victims: A Study of Violence Among Friends and Relatives. National Crime Survey Report, SD-NCS-N-14, NCJ-62319. Washington, DC: U.S. Department of Justice.

Bureau of Justice Statistics. (1981). Criminal Victimization in the United States, 1979. Washington, DC: U.S. Department of Justice.

Bureau of Justice Statistics. (1985a). Criminal Victimization in the United States, 1983. Washington, DC: U.S. Department of Justice.

Bureau of Justice Statistics. (1985b). Households Touched by Crime, 1984. BJS Bulletin. Washington, DC: U.S. Department of Justice.

Congressional Budget Office. (1982). Catastrophic Medical Expenses: Patterns in the Nonelderly, Nonpoor Population. Washington, DC.

Cox, B., & Collins, J. (1985). Criminal Victimization of District of Columbia Residents and Capitol Hill Employees. Bureau of Justice Statistics Report No. NCJ-97982.

Elliott, D., & Huizinga, D. (1984). The Relationship Between Delinquent Behavior and ADM Problems. National Youth Survey Project Report No. 28. Boulder, CO: Behavioral Research Institute.

Gordon, R. (1973). An Explicit Estimation of the Prevalence of Commitment to a Training School, to Age 18, by Race and by Sex. Journal of the American Statistical Association, 68(343), 547-553.

Gordon, R. (1976). Prevalence: The Rare Datum in Delinquency Measurement and Its Implications for the Theory of Delinquency. In M. Klein (Ed.), The Juvenile Justice System (pp. 201-284). Beverly Hills, CA: Sage.

Gordon, R., & Gleser, L. (1974). The Estimation of the Prevalence of Delinquency: Two Approaches and a Correction of the Literature. Journal of Mathematical Sociology, 3, 275-291.

Hindelang, M., Gottfredson, M., & Garofalo, J. (1978). Victims of Personal Crime: An Empirical Foundation for a Theory of Personal Victimization. Cambridge, MA: Ballinger Publishing Company.

Langan, P. (1985). The Prevalence of Imprisonment. Bureau of Justice Statistics Special Report No. NCJ-93657.

Langan, P., & Innes, C. (1985). National Crime Survey Data: The Risk of Violent Crime. CJAIN, Inter-University Consortium for Political and Social Research, Vickie Schneider (ed.).

Lehman, A., & Linn, L. (1984). Crimes Against Discharged Mental Patients in Board-and-Care Homes. American Journal of Psychiatry, 141(2), 271-274.

McCall, N., & Wai, H. (1983). An Analysis of the Use of Medicare by the Continuously Enrolled Aged. Medical Care, 21(6), 567-585.

Peterson, M., & Braiker, H. (1980). Doing Crime: A Survey of California Prison Inmates (R-2200-DOJ). Santa Monica, CA: Rand.

Shryock, H., Siegel, J., & Associates (1971). The Methods and Materials of Demography, Volume 2. U.S. Bureau of the Census. Washington, DC: U.S. Government Printing Office.

Wolfgang, M. (1983). Delinquency in Two Birth Cohorts. American Behavioral Scientist, 27(1), 75-86.

Wolfgang, M., Figilo, R., & Sellin, T. (1972). Delinquency in a Birth Cohort. Chicago: The University of Chicago Press.

APPENDIX A

SURVEY DESIGN FOR THE DC CRIME VICTIMIZATION STUDY

SURVEY DESIGN: DC CRIME VICTIMIZATION STUDY

The District of Columbia Crime Victimization Study had two objectives: to determine the extent of crime victimization against DC residents and to assess the degree to which Capitol Hill employees were subject to victimization. To meet these objectives, two surveys were needed - one of DC-SMSA residents and one of Capitol Hill employees. Data from the two surveys made possible two comparisons that were central to the study: (1) comparison of victimization experience for residents of DC and the suburbs, and (2) comparison of the victimization experiences of Capitol Hill employees to those of employed DC area residents.

The sample designs for the two survey components were straightforward applications of standard statistical methodology. The two surveys used the same questionnaire and collected data by computer assisted telephone interviewing. The questionnaire was a modified version of the National Crime Survey (NCS) questionnaire. The use of this modified questionnaire as well as sample size restrictions resulted in crime definitions that differed from those used by the NCS. These topics are described in greater detail in the remainder of this section.

Sample Design and Selection

The metropolitan area was defined as the Standard Metropolitan Statistical Area (DC-SMSA) used in the 1980 Census. The target population for the DC survey was the civilian, noninstitutionalized resident population age 12 and older of the DC-SMSA and those residents of adjacent areas who shared telephone exchange codes with the DC-SMSA. The areas included: DC;

the Maryland counties of Charles, Montgomery, and Prince George's; the Virginia counties of Arlington, Fairfax, Loudoun, and Prince William; and the Virginia independent cities of Alexandria, Fairfax, Falls Church, Manassas, and Manassas Park. The study sample was selected by first creating a list of all telephone exchange codes used in the DC-SMSA. All possible four digits were added to the DC area exchange codes to create a list of all telephone numbers allocated to the DC area by the local telephone companies. Numbers were randomly selected from each exchange code using this list. This resulted in a sample of telephone numbers that were distributed over the entire geographic area of the DC-SMSA.

Telephone interviewers called each sample number. If the number was assigned to a residence, the interviewer surveyed each household member who was age 14 or older, beginning first with adult members of the household. Responses for 12-13 year olds were obtained from their parents. Residency status was determined for 93% of the sampled numbers. At least one completed interview was obtained from 81% of the telephone numbers that were identified as working residential numbers. From these cooperating households, completed interviews were obtained from 83% of the household members age 12 or older for an overall individual response rate of 63%. A total of 5,542 DC area residents completed interviews in this portion of the study.

The target population for the survey of Capitol Hill employees was all persons employed at any time in 1982 by the House of Representatives and the Senate and related Congressional offices, excluding the elected members of Congress. These offices and organizations included the Senate, the House of Representatives, the Library of Congress, the Architect of the Capitol, the Office of Technology Assessment, and the Congressional Budget Office.

Lists of employees provided by these agencies were used to select a random sample of employees from each agency. Because some of the agency lists contained names of out-of-town employees, consultants, and persons who did not work on Capitol Hill in 1982, the interview began with asking screening questions to determine whether the person had worked on Capitol Hill at any time in 1982. The screening portion of the interview was completed for 88% of the sample selections. Nonresponse was mainly due to refusal and employees that could not be located. Of the employees identified as eligible for the study, 96% completed interviews for an overall response rate of 85%. Completed interviews were obtained from 1,889 congressional employees; another 219 employees were identified as ineligible for interview.

Questionnaire Design and Implementation

The Bureau of Social Science Research developed the questionnaire for the DC crime study during its investigation of alternative questionnaire approaches for the NCS as part of the Crime Survey Redesign Consortium. The DC study instrument has screening questions that cover more types of incidents then the current NCS questionnaire in an attempt to promote better recall of victimization events. Questions specific to the objectives of the DC study were added to the usual questions asked in the NCS.

Using this questionnaire, the interviewer began by asking a set of lead-in questions about the person and his/her participation in community programs to combat crime. Next, the interviewer listed various types of crimes and asked, "Right off, can you think of a time during 1982 or 1983 when any of these things happened to you?" After recording the immediate responses, the interviewer read a list of example crimes and example crime locations. The respondent was instructed to stop the interviewer whenever

he/she thought of a crime that had not been previously mentioned. Each time an example caused the respondent to think of a new crime, the respondent's description of the incident was entered into the list of events. The interviewer then probed for similar events by asking, "Has any other crime event that happened to you in 1982 or 1983 come to mind?" Any additional crimes mentioned were added to the list of crimes.

In both surveys, the respondents were asked to list victimizations committed against them between January 1, 1982 to the date of the interview. Because data collection ran from late May through August of 1983, sample individuals reported victimizations for a minimum of 16 months and a maximum of 19 months. The period from May 1, 1982 to April 30, 1983 was chosen as the common reporting period for analysis.

The interviewer asked detailed questions about each crime reported by the respondent. The modified NCS crime incident form used in this survey was divided into several sections. The first section served a "verification" purpose in the sense that it determined the date when the crime incident occurred, the type of crime incident that occurred, the type of crime that occurred (including noncrime incidents), and the person or persons involved. The remaining sections of the incident form were completed only for crimes committed against the respondent directly (robbery, assault, threat to injure, personal larceny, personal vandalism) or against his/her household as a whole (burglary, household larceny, household vandalism) and that occurred between May 1, 1982 to April 30, 1983. These sections of the crime incident form obtained information about the characteristics of the victimization, injury and property losses, victim behavior, a description of the offender(s), and the crime location and conditions.

The interviewer closed the interview by asking general information questions such as the respondent's age, race, and sex, and the characteristics of the dwelling in which the person lived.

Type of Crime Coding

Some definitions in the DC study differed from the NCS, but the logic and definitions used by the NCS were closely followed in the classification of victimization reports for the DC study. The DC study included victimization types not included in the NCS. Some of the differences anticipated changes incorporated in the 1986 NCS design. Specifically, the NCS/DC study crime-classification differences were as follows:

- Threats to injure, which are classified under simple assault in the NCS, were a separate victimization category in the DC study.
- Vandalism, not included in the NCS, was included in the DC study.
- Personal larceny with contact, which includes only purse-snatching and pocket-picking in the NCS, was defined in the DC study to include larceny where victim and offender were in visual or physical proximity to each other.
- Household larceny, defined in the NCS as thefts or attempted thefts of property from in or around the household dwelling, was classified in the DC study based on the ownership of the property. Stolen personal property was classified as personal larceny; stolen household property was classified as household larceny. A similar household-versus-personal distinction was made in the case of vandalism.

The NCS and the DC study also differed in the classifications of rape and motor vehicle theft, neither of which was reported frequently enough by DC-SMSA residents or Capitol Hill employees to support separate analyses. NCS sample sizes are much larger than those in the DC study, making separate analysis of rape and motor vehicle theft in the former possible. In this study, rape victimizations were included in the assault category, and motor vehicle thefts were included in personal or household larceny categories depending on ownership.

Hierarchical victimization classification rules were developed so that events that involved more than one kind of offense (such as robbery and assault or burglary and vandalism) could be placed into a single category with seriousness used to define the hierarchy. Victimizations involving multiple offenses were classified into the most serious category based on the following seriousness hierarchy: rape, robbery, assault, threat to injure, burglary, personal larceny with contact, household larceny, personal larceny without contact, household vandalism, and personal vandalism.

APPENDIX B

STANDARD ERRORS

Table B.1 Standard Error of Victimization Prevalence as a Function of Length of Employment: Assault or Attempted Assault

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	2.17	2.17	2.17
1982	322	4,463	1.68	1.51	1.49
1981	280	3,861	1.89	1.49	1.44
1980	143	1,970	3.33	2.62	2.56
1978-79	215	2,940	2.61	1.61	1.39
1976-77	169	2,287	3.05	1.92	1.54
1974-75	143	1,973	3.21	1.65	1.65
1972-73	121	1,647	3.53	1.91	1.72
1970-71	91	1,220	4.52	2.44	2.44
1960-69	201	2,694	2.98	1.26	1.09
Before 1960	57	749	4.03	0.00	0.00
Total	1,872	25,639	0.84	0.55	0.53
Employed DC Area Residents:					
1983	259	120,087	1.82	1.82	1.82
1982	796	385,505	1.09	0.93	0.93
1981	448	215,362	1.77	1.45	1.34
1980	360	167,621	2.06	1.53	1.41
1978-79	521	247,060	1.71	1.23	1.07
1976-77	243	116,224	2.02	1.03	1.03
1974-75	218	102,487	2.97	1.69	1.32
1972-73	191	90,857	3.27	1.92	1.52
1970-71	168	85,049	3.51	2.27	2.05
1960-69	499	232,350	1.82	0.77	0.65
Before 1960	171	83,953	3.38	1.72	1.64
Total	3,874	1,846,553	0.60	0.42	0.39

Table B.2 Standard Error of Victimization Prevalence as a Function of Length of Employment: Burglary or Attempted Burglary

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	2.55	2.55	2.55
1982	322	4,463	1.67	1.35	1.28
1981	280	3,861	2.23	1.68	1.62
1980	143	1,970	3.27	2.23	2.14
1978-79	215	2,940	2.82	1.83	1.67
1976-77	169	2,287	3.45	2.04	1.88
1974-75	143	1,973	3.82	1.78	1.67
1972-73	121	1,647	3.91	2.07	1.15
1970-71	91	1,220	4.60	3.14	2.74
1960-69	201	2,694	3.32	1.85	1.02
Before 1960	57	749	5.96	2.50	1.65
Total	1,872	25,639	0.93	0.60	0.54
Employed DC Area Residents:					
1983	259	120,087	2.09	2.09	2.09
1982	796	385,505	1.08	0.95	0.90
1981	448	215,362	1.75	1.55	1.53
1980	360	167,621	1.55	0.87	0.70
1978-79	521	247,060	1.67	0.96	0.86
1976-77	243	116,224	2.72	1.52	1.14
1974-75	218	102,487	2.90	1.55	1.46
1972-73	191	90,857	3.34	1.44	1.41
1970-71	168	85,049	3.46	1.51	1.05
1960-69	499	232,350	2.30	1.11	0.67
Before 1960	171	83,953	3.94	1.46	1.15
Total	3,874	1,846,553	0.71	0.45	0.40

Table B.3 Standard Error of Victimization Prevalence as a Function of Length of Employment: Theft or Attempted Theft

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	3.81	3.81	3.81
1982	322	4,463	2.57	2.34	2.26
1981	280	3,861	2.90	2.65	2.34
1980	143	1,970	4.13	3.58	2.93
1978-79	215	2,940	3.40	2.83	2.26
1976-77	169	2,287	3.85	3.21	2.48
1974-75	143	1,973	4.12	3.45	2.55
1972-73	121	1,647	4.46	3.80	2.55
1970-71	91	1,220	5.24	4.34	2.93
1960-69	201	2,694	3.42	2.69	1.68
Before 1960	57	749	6.48	4.53	2.96
Total	1,872	25,639	1.15	0.96	0.81
Employed DC Area Residents:					
1983	259	120,087	2.94	2.94	2.94
1982	796	385,505	1.70	1.55	1.49
1981	448	215,362	2.41	2.20	1.94
1980	360	167,621	2.65	2.25	1.97
1978-79	521	247,060	2.30	1.88	1.61
1976-77	243	116,224	3.42	2.50	1.83
1974-75	218	102,487	3.57	2.74	2.07
1972-73	191	90,857	3.76	2.89	1.90
1970-71	168	85,049	4.07	3.57	2.64
1960-69	499	232,350	2.40	1.94	1.14
Before 1960	171	83,953	3.65	3.16	2.18
Total	3,874	1,846,553	0.87	0.74	0.62

Table B.4 Standard Error of Victimization Prevalence as a Function of Length of Employment: Vandalism

Year Employed	Sample Size	Population Size	(1) Percent Ever Victimized	(2) Percent Victimized 5/82-4/83	(3) Percent First Victimized 5/82-4/83
Capitol Hill Employees:					
1983	130	1,835	3.18	3.18	3.18
1982	322	4,463	2.14	1.86	1.80
1981	280	3,861	2.58	2.21	2.00
1980	143	1,970	3.74	3.08	2.63
1978-79	215	2,940	2.78	2.19	1.97
1976-77	169	2,287	3.48	2.88	2.70
1974-75	143	1,973	3.86	2.61	1.90
1972-73	121	1,647	4.10	3.10	2.80
1970-71	91	1,220	4.66	3.61	3.12
1960-69	201	2,694	3.20	2.33	2.05
Before 1960	57	749	6.16	4.68	4.02
Total	1,872	25,639	0.99	0.80	0.72
Employed DC Area Residents:					
1983	259	120,087	2.34	2.34	2.34
1982	796	385,505	1.45	1.33	1.24
1981	448	215,362	2.07	1.85	1.65
1980	360	167,621	2.22	1.88	1.78
1978-79	521	247,060	2.01	1.65	1.53
1976-77	243	116,224	2.68	1.93	1.73
1974-75	218	102,487	2.85	2.16	1.87
1972-73	191	90,857	3.17	2.12	1.60
1970-71	168	85,049	3.78	3.13	3.00
1960-69	499	232,350	1.97	1.42	1.07
Before 1960	171	83,953	3.66	2.24	1.84
Total	3,874	1,846,553	0.72	0.60	0.54