Survey Methodology for Criminal Victimization in the United States, 2006

The survey results contained in this report are based on data gathered from residents living throughout the United States, including persons living in group quarters, such as dormitories, rooming houses, and religious group dwellings. Crew members of merchant vessels, Armed Forces personnel living in military barracks, and institutionalized persons, such as correctional facility inmates, were not included in the scope of this survey. Similarly, U.S. citizens residing abroad and foreign visitors to this country were excluded. With these exceptions, individuals age 12 or older living in units selected for the sample were eligible to be interviewed.

Data Collection

Each housing unit selected for the National Crime Victimization Survey (NCVS) remains in the sample for three years, with each of seven interviews taking place at 6-month intervals. An NCVS interviewer’s first contact with a housing unit selected for the survey is in person. The interviewer may then conduct subsequent interviews by telephone.

To elicit more accurate reporting of incidents, NCVS uses the self-respondent method which calls for the direct interviewing of each person 12 years or older in the household. An exception is made to use proxy interviewing instead of direct interviewing for the following three cases: 12- and 13-year-old persons when a knowledgeable household member insists they not be interviewed directly, incapacitated persons, and individuals absent from the household during the entire field-interviewing period. In the case of temporarily absent household members and persons who are physically or mentally incapable of granting interviews, interviewers may accept other household members as proxy respondents, and in certain situations non-household members may provide information for incapacitated persons.

Some interviews were conducted using Computer-Assisted Telephone Interviewing (CATI), a data collection mode which involves interviewing from centralized facilities and using a computerized instrument. In the CATI-eligible part of the sample, all interviews are done by telephone whenever possible, except for the first interview, which is primarily conducted in person. The telephone interviews are conducted by the CATI facilities in Hagerstown, Maryland and Tucson, Arizona.

Sample Design and Size

Survey estimates are derived from a stratified, multi-stage cluster sample. The primary sampling units (PSU’s) composing the first stage of the sample were counties, groups of counties, or large metropolitan areas. Large PSU’s were included in the sample automatically and are considered to be self-representing (SR) since all of them were selected. The remaining PSU’s, called non-self-representing (NSR), because only a subset of them was selected, were combined into strata by grouping PSU’s with similar geographic and demographic characteristics, as determined by the 1990 Census.

The initial 1990 design consisted of 93 SR PSU’s and 152 NSR strata, with one PSU per stratum selected with probability proportionate to population size. A sample reduction was done in October of 1996, reducing the number of NSR PSUs by 42. So, the current NCVS sample consists of 110 NSR PSUs. The NCVS sample design continued use of both 1980- and 1990-based sample through 1997. Beginning in 1998 only 1990-based sample remains.

In the second stage of sampling, each selected stratification PSU is divided into four non-overlapping frames (unit, area, permit, and group quarters) from which NCVS independently selects its sample. From each selected stratification PSU, clusters of approximately four housing units or housing unit equivalents are selected from each frame. For the unit and group quarters frames, addresses come from the 1990 Census. For the permit frame, addresses come from building permit data obtained from building permit offices. This ensures that units built after the 1990 Census are included in the sample. For the area frame, sample blocks come from the 1990 Census files. Then, addresses are listed and sampled in the field. A new sample, based on addresses drawn from the 2000 census, began to be phased in 2005.
The actual number of households and persons interviewed in the NCVS sample varies slightly from year to year. Information on the number of households and persons interviewed by year is presented below. (Also see spreadsheet at: [http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mresp.csv](http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mresp.csv)).

Number of households and persons interviewed by year.

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of households interviewed</th>
<th>Household response rate</th>
<th>Number of persons interviewed</th>
<th>Response rate for persons</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996</td>
<td>45,000</td>
<td>93%</td>
<td>85,330</td>
<td>91%</td>
</tr>
<tr>
<td>1997</td>
<td>43,000</td>
<td>95%</td>
<td>79,470</td>
<td>90%</td>
</tr>
<tr>
<td>1998</td>
<td>43,000</td>
<td>94%</td>
<td>78,900</td>
<td>89%</td>
</tr>
<tr>
<td>1999</td>
<td>43,000</td>
<td>93%</td>
<td>77,750</td>
<td>89%</td>
</tr>
<tr>
<td>2000</td>
<td>43,000</td>
<td>93%</td>
<td>79,710</td>
<td>90%</td>
</tr>
<tr>
<td>2001</td>
<td>44,000</td>
<td>93%</td>
<td>79,950</td>
<td>89%</td>
</tr>
<tr>
<td>2002</td>
<td>42,000</td>
<td>92%</td>
<td>76,050</td>
<td>87%</td>
</tr>
<tr>
<td>2003</td>
<td>42,000</td>
<td>92%</td>
<td>74,520</td>
<td>86%</td>
</tr>
<tr>
<td>2004</td>
<td>42,000</td>
<td>91%</td>
<td>74,500</td>
<td>86%</td>
</tr>
<tr>
<td>2005</td>
<td>38,600</td>
<td>91%</td>
<td>67,000</td>
<td>84%</td>
</tr>
<tr>
<td>2006</td>
<td>38,000</td>
<td>91%</td>
<td>67,650</td>
<td>86%</td>
</tr>
</tbody>
</table>

In order to conduct field interviews, the sample is divided into six groups, or rotations, and each group of households are interviewed once every six months over a period of three years. The initial interview is used to bound the interviews (bounding establishes a time frame to avoid duplication of crimes on subsequent interviews), but is not used to compute the annual estimates. Each rotation group is further divided into six panels. A different panel of households, corresponding to one sixth of each rotation group, is interviewed each month during the 6-month period. Because the survey is continuous, newly constructed housing units are selected as described, and assigned to rotation groups and panels for subsequent incorporation into the sample. A new rotation group enters the sample every six months, replacing a group phased out after being in the sample for three years. (Also see spreadsheet at: [http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mmon.csv](http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mmon.csv)).
Month of Interview by Month of Reference
(X's denote months in the 6-month reference period)

<table>
<thead>
<tr>
<th>Month of interview</th>
<th>First Quarter</th>
<th>Second Quarter</th>
<th>Third Quarter</th>
<th>Fourth Quarter</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Jan</td>
<td>Feb</td>
<td>Mar</td>
<td>Apr</td>
</tr>
<tr>
<td>January</td>
<td></td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>February</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>March</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>April</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>May</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>June</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>July</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>August</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>September</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>October</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>November</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>December</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>January</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>February</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>March</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<tr>
<td>April</td>
<td>X</td>
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<td>May</td>
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<tr>
<td>June</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>July</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>

Selection of Cases for CATI

Until March 2003, the NCVS sample PSU’s fell into three groups of CATI usage: maximum-CATI PSU’s, where all the segments in the PSU are CATI-eligible; half-CATI PSU’s, where half of the segments in the PSU are randomly designated to be CATI-eligible; and no-CATI PSU’s, where none of the segments are CATI-eligible. The level of CATI usage for each PSU was established with concern toward an optimal workload for the field interviewers. In the "half-CATI" PSU’s, a random sample of about 50% of the segments in each PSU is taken and designated as CATI-eligible. Beginning March 2003, addresses in all segments became eligible for CATI interviewing. CATI cases are interviewed from CATI facilities while the other sample cases are interviewed by the standard NCVS field procedures.

Collection Year Estimates

The data presented in the tables were collected during the calendar year being estimated. Because of the retrospective nature of the survey, the estimates include some incidents that actually occurred during the previous year. Analyses comparing the victimization information collected in a calendar year (termed a collection year) to that obtained about victimizations experienced in the same calendar year (called a data year) show only a small difference between the two methods. The differences will be greater during periods of changing crime rates and less during periods of stable rates.

New Race Information

In 1997 the Office of Management and Budget (OMB) introduced new guidelines for the collection and reporting of race and ethnicity data in government surveys. These methodological changes were implemented for all demographic surveys as of January 1, 2003. Individuals are now allowed to choose more than one race category. In prior years they were asked to select a single primary race.
Racial categories presented in these tables now consist of the following: white only, black only, other race only (American Indian, Alaska Native, Asian, Pacific Islander if only one of these races is given), and two or more races (all persons of any race indicating two or more races). Individuals are now asked whether they are of Hispanic ethnicity before being asked about their race, and are now asked directly if they are Spanish, Hispanic, or Latino.

**Estimation Procedure**

Annual collection year estimates of the levels and rates of victimization are derived by accumulating four quarterly estimates. The weights of all crimes reported during interviews in that year are summed, regardless of when the crime occurred. The base for the collection year rate for personal crime is the sum of all person weights. Likewise, the base for the property crime rates is the sum of all household weights.

The estimation procedure begins with the application of a base weight to the data from each individual interviewed. The base weight is the reciprocal of the probability of each unit's selection for the sample, and provides a rough measure of the population represented by each person in the sample. Next, an adjustment is made to account for households and individuals in occupied units who were selected for the survey but unavailable for an interview.

In addition to adjusting for unequal probabilities of selection and observation, the final weight also includes a ratio adjustment to known population totals based on the adjusted counts from the 1990 Census. Specifically, the final person weight is the product of the values of the following six component weights; the final household weight is the product of all components except the within-household non-interview adjustment component detailed below:

**Probabilities of selection**

- Base weight: the inverse of the sample unit's probability of selection.
- Weighting control factor: adjusts for any subsampling due to unexpected events in the field, such as unusually high growth in new construction, area segments larger than anticipated, and other deviations from the overall stratum sampling rate.

**Probabilities of observation (Nonresponse)**

- Household non-interview adjustment: adjusts for nonresponse at the household level by inflating the weight assigned to interviewed households so that they represent themselves and non-interviewed households.
- Within-household non-interview adjustment: adjusts for nonresponse at the person level by inflating the weight assigned to the interviewed persons so that they represent themselves and the missed interviews.

**Post-stratification ratio adjustment to known population totals**

The distribution of the sample population may differ somewhat from that of the total population in terms of age, race, sex, residence, and other characteristics. Because of this, two stages of ratio estimation are employed to bring the two distributions into closer agreement, thereby reducing the variability of the sample estimates.

- First-stage factor: the first stage of ratio estimation is applied only to on-self-representing PSU’s. Its purpose is to reduce sampling error caused by selecting one PSU to represent an entire stratum. It adjusts for race and zone of residence.
differences between the sample non-self-representing PSU’s and the population non-self-representing PSU’s (for self-representing PSU’s this factor is set to 1).

- Second-stage factor: the second stage of ratio estimation is applied on an individual basis to bring the distribution of individuals in the sample into closer agreement with independent current estimates of the population according to age, sex, and race characteristics. This factor is defined for each person to adjust for the difference between weighted counts of persons (using the above five weight components) and independent estimates of the number of persons, within the defined cells. These independent estimates are projections based on the 2000 Census population controls adjusted for the undercount.

For household crimes, the characteristics of the wife in a husband-wife household and the characteristics of the head of household in other types of households are used to determine the ratio adjustment factors. This procedure is considered more precise than simply using the characteristics of the head of household since sample coverage is generally better for females than males.

For estimates involving incidents rather than victimizations, further adjustments are made to those cases where an incident involved more than one person. These incidents have more than one chance of being included in the sample so each multiple-victimization is reduced by the number of victims. Thus, if two people are victimized during the same incident, the weight assigned to that incident is the person weight reduced by one-half so that the incident cannot be counted twice. However, the details of the event’s outcome as they related to the victim are reflected in the survey results. No adjustment is necessary in estimating data on household crimes because each separate crime is defined as involving only one household.

**Series Victimizations**

A series victimization is defined as six or more similar but separate crimes which the victim is unable to recall individually or describe in detail to an interviewer. These series crimes have been excluded from the tables because the victims were unable to provide details for each event. Data on series crimes are gathered by the calendar quarter(s) of occurrence, making it possible to match the time frames used in tabulating the data for non-series crimes (See Table 110).

The effect of combining series and non-series crimes, counting each of the series crimes as a single victimization based on the details of the most recent incident, was included in the initial release of the 1980 data. The report showed that victimization counts and rates were higher in 1979 and 1980 when the series crimes were added. However, rate changes between these two years were basically in the same direction and significantly affected the same crimes as those affected when only non-series crimes were analyzed.

**Accuracy of Estimates**

The accuracy of an estimate is a measure of its total error, that is, the sum of all the errors affecting the estimate: sampling error as well as nonsampling error.

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1 Armed forced personnel who are eligible to be interviewed are not included in the second-stage ratio estimate and receive a factor of 1.

The sample used for the NCVS is one of a large number of possible samples of equal size that could have been obtained by using the same sample design and selection procedures. Estimates derived from different samples would differ from one another due to sampling variability, or sampling error.

The standard error of a survey estimate is a measure of the variation among that estimates from all possible samples. Therefore, it is a measure of the precision (reliability) with which a particular estimate approximates the average result of all possible samples. The estimate and its associated standard error may be used to construct a confidence interval. A confidence interval is a range of numbers which has a specified probability that the average of all possible samples, which is the true unknown value of interest in an unbiased design, is contained within the interval. About 68% of the time, the survey estimate will differ from the true average by less than one standard error. Only 10% of the time will the difference be more than 1.6 standard errors, and just one time in 100 will it be greater than 2.5 standard errors. A 95% confidence interval is the survey estimate plus or minus about twice the standard error, thus there is a 95% chance that the result of a complete census would fall within the confidence interval.

In addition to sampling error, the estimates in this report are subject to nonsampling error. While substantial care is taken in the NCVS to reduce the sources of nonsampling error throughout all the survey operations, by means of a quality assurance program, quality controls, operational controls, and error-correcting procedures, an unquantified amount of nonsampling error remains still.

Major sources of nonsampling error are related to the inability of the respondents to recall in detail the crimes which occurred during the six months prior to the interview. Research based on interviews of victims obtained from police files indicates that assault is recalled with the least accuracy of any crime measured by the NCVS. This may be related to the tendency of victims to not report crimes committed by offenders who are not strangers, especially if they are relatives. In addition, among certain groups, crimes which contain elements of assault could be a part of everyday life, and are therefore forgotten or not considered important enough to mention to a survey interviewer. These recall problems may result in an underestimation of the actual rate of assault.

Another source of nonsampling error is the inability of some respondents to recall the exact month a crime occurred, even though it was placed in the correct reference period. This error source is partially offset by interviewing monthly and using the estimation procedure described earlier. Telescoping is another problem in which incidents that occurred before the reference period are placed within the period. The effect of telescoping is minimized by using the bounding procedure previously described. The interviewer is provided with a summary of the incidents reported in the preceding interview and, if a similar incident is reported, it can be determined whether or not it is a new one by discussing it with the victim. Events which occurred after the reference period are set aside for inclusion with the data from the following interview.

Other sources of nonsampling error can result from other types of response mistakes, including errors in reporting incidents as crimes, misclassification of crimes, systematic data errors introduced by the interviewer, errors made in coding and processing the data. Quality control and editing procedures were used to minimize the number of errors made by the respondents and the interviewers.

Since field representatives conducting the interviews usually reside in the area in which they interview, the race and ethnicity of the field representatives generally matches that of the local population. Special efforts are made to further match field representatives and the people they interview in areas where English is not commonly spoken. About 90% of all NCVS field representatives are female.

Standard errors measure only those nonsampling errors arising from transient factors affecting individual responses completely at random (simple response variance); they do not reveal any systematic biases in the data. As calculated in the NCVS, the standard errors would partially measure nonsampling error arising from some of the above sources, such as transient memory errors, or accidental errors in recording or coding answers, for example.
Computation and Application of Standard Errors

Deriving standard errors which are applicable to a wide variety of items and which can be prepared at a moderate cost requires a number of approximations. Therefore, three generalized variance function (gvf) constant parameters (identified as "a," "b," and "c") were developed for use in calculating standard errors. The parameters provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item. For each year, there are four sets of parameters for use with a different sets of estimates, as described below. (Also see spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mpar.csv, for values).

2006 Parameter Set

<table>
<thead>
<tr>
<th>Parameter Set</th>
<th>a</th>
<th>b</th>
<th>c</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Overall Person Crime Estimates</td>
<td>-0.00010690</td>
<td>4,561</td>
<td>1.391</td>
</tr>
<tr>
<td>2. Person Crime Domain Estimates</td>
<td>-0.00028219</td>
<td>4,160</td>
<td>2.719</td>
</tr>
<tr>
<td>3. Overall Property Crime Estimates</td>
<td>-0.00018230</td>
<td>3,272</td>
<td>1.679</td>
</tr>
<tr>
<td>4. Property Crime Domain Estimates</td>
<td>-0.00073000</td>
<td>3,677</td>
<td>1.597</td>
</tr>
</tbody>
</table>

For year-to-year comparisons, an additional parameter, (rho) is used to account for year-to-year correlation.

Year-to-Year Correlation Between Estimates

Because of the year-to-year overlap in the sample, the same households and persons contribute to annual estimates for different years. This year-to-year correlation between estimates is measured by rho. In general:

\[ \text{rho} = 0 \text{ when estimates are for the same year} \]

\[ \text{rho} \neq 0 \text{ for year-to-year comparisons} \]

When comparing estimates that are 1 or 2 years apart, use rho as shown below.

When comparing estimates that are more than 2 years apart, assume rho=0.

Following are NCVS year-to-year correlation values for major crime categories.

<table>
<thead>
<tr>
<th>TYPE OF CRIME</th>
<th>2003-05 CORRELATION</th>
<th>2004-05 CORRELATION</th>
<th>2004-06 CORRELATION</th>
<th>2005-06 CORRELATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Crimes</td>
<td>0.20</td>
<td>0.41</td>
<td>0.20</td>
<td>0.41</td>
</tr>
<tr>
<td>Total Personal Crimes</td>
<td>0.15</td>
<td>0.30</td>
<td>0.15</td>
<td>0.30</td>
</tr>
<tr>
<td>Crimes of Violence</td>
<td>0.15</td>
<td>0.31</td>
<td>0.15</td>
<td>0.31</td>
</tr>
<tr>
<td>Rape/Sexual Assault</td>
<td>0.02</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Robbery</td>
<td>0.02</td>
<td>0.04</td>
<td>0.02</td>
<td>0.04</td>
</tr>
<tr>
<td>Assault</td>
<td>0.15</td>
<td>0.30</td>
<td>0.15</td>
<td>0.30</td>
</tr>
<tr>
<td>Purse Snatching/Pocket</td>
<td>0.01</td>
<td>0.03</td>
<td>0.01</td>
<td>0.03</td>
</tr>
<tr>
<td>Total Property Crimes</td>
<td>0.19</td>
<td>0.38</td>
<td>0.19</td>
<td>0.38</td>
</tr>
<tr>
<td>Burglary</td>
<td>0.10</td>
<td>0.21</td>
<td>0.10</td>
<td>0.21</td>
</tr>
<tr>
<td>Motor Vehicle Theft</td>
<td>0.04</td>
<td>0.08</td>
<td>0.04</td>
<td>0.08</td>
</tr>
<tr>
<td>Theft</td>
<td>0.17</td>
<td>0.34</td>
<td>0.17</td>
<td>0.34</td>
</tr>
</tbody>
</table>

If estimates are uncorrelated, rho = 0. Hence, omitting the term containing rho in the formula will provide an accurate standard error for the difference between uncorrelated estimates. On the other hand, if the two estimates have a strong positive correlation, omitting the last term will cause overestimation of the true standard error. (Also see spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06myy.csv, for values).
Parameter set #1 is used for the overall person crime estimates. These are the person crime estimates by crime category for the whole population, not disaggregated by any victim, offender, or incident characteristics, nor any variable related to reporting to police.

Parameter set #2 is used for the person crime domain estimates. These are the person crime estimates disaggregated by victim, offender, or incident characteristics, or any variable related to reporting to police.

Parameter set #3 is used for the property crime estimates for the whole population. These are the property crime estimates by crime category for the whole population, not disaggregated by any household characteristics, nor any variable related to reporting to police.

Parameter set #4 is used for the property crime domain estimates. These are the property crime estimates disaggregated by household characteristics, or any variable related to reporting to police.

For the statistic from Table 1 that corresponds to the crime category “all crimes” (i.e., person and property crimes together), parameter set #3 should be used. When the person and property estimates are combined (i.e., all crimes) and disaggregated by victim, household, incident characteristics, as well as any variable related to reporting to police, parameter set #4 should be used for the best estimate of the corresponding variance.

Direct variances were calculated using the balanced repeated replication (BRR) method. The estimates and their corresponding variances were fit to the standard 3-parameter model to obtain the value of the parameters.

The following examples explain the procedures based upon the 2006 data. The formulas used to calculate the variances are available in accompanying spreadsheets, Sigma 1 (See spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06msig1.csv, for values) and Sigma 2 (See spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06msig2.csv, for values). For each example, a spreadsheet using the formulas is also provided.

Example 1. See spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mex1.csv, for values. This example shows how to calculate a confidence interval around the count of a personal crime, the number of completed robberies in 2006. It uses parameter set #1 because the crime is not disaggregated by any characteristics such as age or race. The Sigma 1 spreadsheet was used to calculate confidence intervals around the counts.

The example from Table 1 in 2006 shows 482,290 completed robberies. The confidence intervals were calculated by entering the appropriate data into the Sigma 1 spreadsheet. Using the parameters for overall person crime estimates (Parameter set #1), the following values were entered:

   "a" parameter = -0.00010690
   "b" parameter = 4,561
   "c" parameter = 1.391

The population base of 482,290 completed robberies was also entered.

The results show that the 95% confidence interval around the estimated number of robbery victimizations is about equal to 482,290 plus or minus twice (1.96) the standard error, or plus or minus 100,721: a confidence interval of 381,569 to 583,011.

Example 2. See spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mex2.csv, for values. This example shows how to calculate a confidence interval around a rate for a personal crime by a particular variable, the rate of robberies for persons age 20 through 24 in 2006. It uses parameter
set #2 because the crime is disaggregated by the characteristic of age. The Sigma 2 spreadsheet was used to calculate confidence intervals around the rates.

The example from Table 3 in 2006 shows a robbery rate of 7.3 per 1,000 persons age 20 through 24. The confidence intervals were calculated by entering the appropriate data into the Sigma 2 spreadsheet. Using the parameters for person domain estimates (Parameter set #2), the following values were entered:

“b” parameter = 4,160  
“c” parameter = 2.719

The population base of 20,371,380 age 20 through 24 and the rate of 7.3 for robberies per 1,000 persons age 20 through 24 were also entered.

The results show that the 95% confidence interval around the estimated rate of robbery victimizations for persons age 20 through 24 is equal to 7.3 plus or minus twice (1.96) the standard error, or plus or minor 2.6: a confidence interval of 4.7 to 9.9 per 1,000 persons age 20 through 24.

Example 3.  See spreadsheet at: http://www.ojp.usdoj.gov/bjs/pub/sheets/cvus/2006/cv06mex3.csv, for values. This example shows how to determine if the differences between two rates or percentages are statistically significant. This example compares the rates for males and females for aggravated assault. It uses parameter set #2 because the crime is disaggregated by the characteristic of gender. The Sigma 2 spreadsheet was used to determine if the differences in rates were statistically significant.

The example from Table 2 in 2006 shows an aggravated assault rate of 6.3 per 1,000 males (age 12 or older) and 4.6 per 1,000 females (age 12 or older). Using the parameters for person domain estimates (Parameter set #2), the following values were entered:

“b” parameter = 4,160  
“c” parameter = 2.719

For males (the first line for set #1), the population base of 120,465,800 males and the rate of 6.3 aggravated assaults per 1,000 males were entered. For females (the second line for set #2), the population base of 126,767,280 females and the rate of 4.6 aggravated assaults per 1,000 females were also entered.

The results show that by comparing set #1 with set #2, the differences between males and females for aggravated assault in 2006 is statistically significant.

The spreadsheet shows the ratio of a difference to the standard error or the “z” score, which is associated with a given statistical level of significance. A ratio with an absolute value of 1.96 or greater indicates that the difference is significant at the 95% confidence level (or greater); a ratio with a absolute value between 1.65 and 1.96 indicates the difference is significant at a confidence level between 90% and 95%; a ratio with an absolute value less than 1.65 denotes a confidence level less than 90%. As indicated on the spreadsheet, the ratio of the difference (.0017) to the standard error (.00074) is 2.3. Thus, the spreadsheet indicates that the differences between the rates for aggravated assault for males and females was statistically significant at greater than the 95% confidence level.

In BJS reports, findings are normally significant at the 95% confidence level. If the finding is significant at the 90% confidence level, words such as “some evidence” are used. The standards used are explained in the methodology section of each report.
Criminal Victimization Glossary

**Age** - The appropriate age category is determined by the respondent's age on the last day of the month before the interview.

**Annual household income** - The total income of the household head and all members of the household for the 12 months preceding the interview. Includes wages, salaries, net income from businesses or farms, pensions, interest, dividends, rent, and any other form of monetary income.

**Aggravated assault** - Attack or attempted attack with a weapon, regardless of whether or not an injury occurred and attack without a weapon when serious injury results.

*With injury* - An attack without a weapon when serious injury results or an attack with a weapon involving any injury. Serious injury includes broken bones, lost teeth, internal injuries, loss of consciousness, and any unspecified injury requiring two or more days of hospitalization.

*Threatened with a weapon* - Threat or attempted attack by an offender armed with a gun, knife, or other object used as a weapon, not resulting in victim injury.

**Assault** - An unlawful physical attack or threat of attack. Assaults may be classified as aggravated or simple. Rape, attempted rape, and sexual assaults are excluded from this category, as well as robbery and attempted robbery. The severity of assaults ranges from minor threat to incidents which are nearly fatal.

**Burglary** (also *Household burglary*) - Unlawful or forcible entry or attempted entry of a residence. This crime usually, but not always, involves theft. The illegal entry may be by force, such as breaking a window or slashing a screen, or may be without force by entering through an unlocked door or an open window. As long as the person entering has no legal right to be present in the structure a burglary has occurred. Furthermore, the structure need not be the house itself for a burglary to take place; illegal entry of a garage, shed, or any other structure on the premises also constitutes household burglary. If breaking and entering occurs in a hotel or vacation residence, it is still classified as a burglary for the household whose member or members were staying there at the time the entry occurred.

**Completed burglary** - A form of burglary in which a person who has no legal right to be present in the structure successfully gains entry to a residence, by use of force, or without force.

**Forcible entry** - A form of completed burglary in which force is used to gain entry to a residence. Some examples include breaking a window or slashing a screen.

**Unlawful entry without force** - A form of completed burglary committed by someone having no legal right to be on the premises, even though no force is used.

**Attempted forcible entry** - A form of burglary in which force is used in an attempt to gain entry.

**Collection year** - The set of victimizations reported to NCVS in interviews conducted during the same calendar year. This set may include victimizations which occurred in the previous calendar year, due to the retrospective nature of the NCVS interview. Collection year data are used in tables beginning in 1996. See "Data year."

**Commercial crimes** - Crimes against commercial establishments of any type are not included in the survey. Commercial establishments include stores, restaurants, businesses, service stations, medical offices or hospitals, or other similar establishments. For victimizations occurring in commercial establishments, the crime is included or not included depending upon whether the survey respondent was threatened or harmed in some way or personal property was taken.
**Crime classification** - Victimization and incidents are classified based upon detailed characteristics of the event provided by the respondent. Neither victims nor interviewers classify crimes at the time of interview. During data processing, a computer program classifies each event into one type of crime, based upon the entries on a number of items on the survey questionnaire. This ensures that similar events will be classified using a standard procedure. The glossary definition for each crime indicates the major characteristics required to be so classified. If an event can be classified as more than one type of crime, a hierarchy is used which classifies the crime according to the most serious event that occurred. The hierarchy is: rape, sexual assault, robbery, assault, burglary, motor vehicle theft, theft.

**Data year** - The set of victimizations reported to NCVS all of which occurred within the same calendar year. For all years prior to 1996, Criminal Victimization in the United States tables are based upon data year. Beginning in 1996 and later years, tables are based upon collection year. See “Collection Year.”

**Ethnicity** - A classification based on Hispanic culture and origin, regardless of race. Persons are asked directly if they are Spanish, Hispanic, or Latino before being asked about their racial category.

**Head of household** - A classification which defines one and only one person in each housing unit as the head. Head of household implies that the person rents or owns (or is in the process of buying), the housing unit. The head of household must be at least 18, unless all members of the household are under 18, or the head is married to someone 18 or older.

**Hispanic** - A person who describes himself as Mexican-American, Chicano, Mexican, Mexicano, Puerto Rican, Cuban, Central American, South American, or from some other Spanish culture or origin, regardless of race.

**Household** - A person or group of people meeting either of the following criteria: (1) people whose usual place of residence is the same housing unit, even if they are temporarily absent; (2) people staying in a housing unit who have no usual place of residence elsewhere.

**Household Burglary** - See burglary.

**Incident** - A specific criminal act involving one or more victims and offenders. For example, if two people are robbed at the same time and place, this is classified as two robbery victimizations but only one robbery incident.

**Marital status** - Every person is assigned to one of the following classifications: (1) married, which includes persons in common-law unions and those who are currently living apart for reasons other than marital discord (employment, military service, etc.); (2) separated or divorced, which includes married persons who are legally separated and those who are not living together because of marital discord; (3) widowed; and (4) never married, which includes persons whose marriages have been annulled and those who are living together and not in a common-law union.

**Metropolitan area** - See "Metropolitan Statistical Area."

**Metropolitan Statistical Area (MSA)** - The Office of Management and Budget (OMB) defines this as a population nucleus of 50,000 or more, generally consisting of a city and its immediate suburbs, along with adjacent communities having a high degree of economic and social integration with the nucleus. MSA's are designated by counties, the smallest geographic units for which a wide range of statistical data can be attained. However, in New England, MSA's are designated by cities and towns since these subcounty units are of great local significance and considerable data is available for them. Currently, an area is defined as an MSA if it meets one of two standards:

1. A city has a population of at least 50,000;
2. The Census Bureau defines an urbanized area of at least 50,000 people with a total metropolitan population of at least 100,000 (or 75,000 in New England). The Census Bureau's definition of urbanized areas, data on commuting to work, and the strength of the
economic and social ties between the surrounding counties and the central city determine which counties not containing a main city are included in an MSA. For New England, MSA’s are determined by a core area and related cities and towns, not counties. A metropolitan statistical area may contain more than one city of 50,000 and may cross State lines.

**Motor vehicle** - An automobile, truck, motorcycle, or any other motorized vehicle legally allowed on public roads and highways.

**Motor vehicle theft** - Stealing or unauthorized taking of a motor vehicle, including attempted thefts.

*Completed motor vehicle theft* - The successful taking of a vehicle by an unauthorized person.

*Attempted motor vehicle theft* - The unsuccessful attempt by an unauthorized person to take a vehicle.

**Multiple offenders** - Two or more persons inflicting some direct harm to a victim. The *victim-offender relationship* is determined by the offender with the closest relationship to the victim. The following list ranks the different relationships from closest to most distant: spouse, ex-spouse, parent, child, other relative, nonrelative well-known person, casual acquaintance, or stranger (See *Nonstranger* and *Stranger*).

**Non-Hispanic** - Persons who report their culture or origin as something other than "Hispanic" as defined above. This distinction is made regardless of race.

**Nonstranger** - A classification of a crime victim's relationship to the offender. An offender who is either related to, well known to, or casually acquainted with the victim is a nonstranger. For crimes with more than one offender, if any of the offenders are nonstrangers, then the group of offenders as a whole is classified as nonstranger. This category only applies to crimes which involve contact between the victim and the offender; the distinction is not made for crimes of theft since victims of this offense rarely see the offenders.

**Offender** - The perpetrator of a crime; this term usually applies to crimes involving contact between the victim and the offender.

**Offense** - A crime. When referring to personal crimes, the term can be used to refer to both victimizations and incidents.

**Personal crimes** - Rape, sexual assault, personal robbery, assault, purse snatching and pocket picking. This category includes both attempted and completed crimes.

**Place of occurrence of crime** - The location at which a crime occurred, as specified by the victim. Survey measures of crimes occurring in commercial establishments, restaurants, nightclubs, public transportation and other similar places include only those crimes involving NCVS measured crimes against persons, not the establishments. Crimes against commercial establishments and other places are not measured by the survey.

**Property crimes** - Property crimes including burglary, motor vehicle theft, or theft. This category includes both attempted and completed crimes.

**Purse snatching/Pocket picking** - Theft or attempted theft of property or cash directly from the victim by stealth, without force or threat of force.

**Race** - For this survey respondents self identify with one or more racial categories. Racial categories for this report are white only, black only, and other race only. The "other" category is composed of Asian Pacific Islanders, and American Indians, Aleuts, and Eskimos, if only one of these races is given. Persons
reporting two or more races are included in the category of “more than one race”. The race of the head of household is use for computing household crime demographics.

**Rape** - Forced sexual intercourse including both psychological coercion as well as physical force. Forced sexual intercourse means vaginal, anal or oral penetration by the offender(s). This category also includes incidents where the penetration is from a foreign object such as a bottle. Includes attempted rapes, male as well as female victims and both heterosexual and homosexual rape. Attempted rape includes verbal threats of rape.

**Rate of victimization** - see “Victimization rate.”

**Region** - The States have been divided into four groups or census regions:

*Midwest* - Includes the 12 States of Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin.


*South* - Includes the District of Columbia and the 16 States of Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.


**Robbery** - Completed or attempted theft, directly from a person, of property or cash by force or threat of force, with or without a weapon, and with or without injury.

*Completed/property taken* - The successful taking of property from a person by force or threat of force, with or without a weapon, and with or without injury.

*Completed with injury* - The successful taking of property from a person, accompanied by an attack, either with or without a weapon, resulting in injury.

*Completed without injury* - The successful taking of property from a person by force or the threat of force, either with or without a weapon, but not resulting in injury.

*Attempted to take property* - The attempt to take property from a person by force or threat of force without success, either with or without a weapon, and with or without injury.

*Attempted without injury* - The attempt to take property from a person by force or the threat of force without success, either with or without a weapon, but not resulting in injury.

*Attempted with injury* - The attempt to take property from a person without success, accompanied by an attack, either with or without a weapon, resulting in injury.

**Rural area** - A place not located inside the Metropolitan Statistical Area. This category includes a variety of localities, ranging from sparsely populated rural areas to cities with populations less than 50,000.

**Sample** - The set of housing units selected by the U. S. Census Bureau to be interviewed for the survey. All occupants of the household age 12 or older are interviewed. See methodology for sample inclusions and exclusions.
Series - Six or more similar but separate events, which the respondent is unable to describe separately in detail to an interviewer.

Sexual assault - A wide range of victimizations, separate from rape or attempted rape. These crimes include attacks or attempted attacks generally involving unwanted sexual contact between victim and offender. Sexual assaults may or may not involve force and include such things as grabbing or fondling. Sexual assault also includes verbal threats.

Simple assault - Attack without a weapon resulting either in no injury, minor injury (for example, bruises, black eyes, cuts, scratches or swelling) or in undetermined injury requiring less than 2 days of hospitalization. Also includes attempted assault without a weapon.

With minor injury - An attack without a weapon resulting in such injuries as bruises, black eyes, cuts or in undetermined injury requiring less than 2 days of hospitalization.

Without injury - An attempted assault without a weapon not resulting in injury.

Stranger - A classification of the victim's relationship to the offender for crimes involving direct contact between the two. Incidents are classified as involving strangers if the victim identifies the offender as a stranger, did not see or recognize the offender, or knew the offender only by sight. Crimes involving multiple offenders are classified as involving nonstrangers if any of the offenders was a nonstranger. Since victims of theft without contact rarely see the offender, no distinction is made between strangers and nonstrangers for this crime.

Suburban areas - A county or counties containing a central city, plus any contiguous counties that are linked socially and economically to the central city. On data tables, suburban areas are categorized as those portions of metropolitan areas situated "outside central cities."

Tenure - The NCVS recognizes two forms of household tenancy: (1) owned, which includes dwellings that are mortgaged, and (2) rented, which includes rent-free quarters belonging to a party other than the occupants, and situations where rental payments are in kind or services.

Theft - Completed or attempted theft of property or cash without personal contact. Incidents involving theft of property from within the sample household would classify as theft if the offender has a legal right to be in the house (such as a maid, delivery person, or guest). If the offender has no legal right to be in the house, the incident would classify as a burglary.

Completed - To successfully take without permission property or cash without personal contact between the victim and offender.

Attempted - To unsuccessfully attempt to take property or cash without personal contact.

Urban areas - The largest city (or grouping of cities) in a Metropolitan Statistical Area (see definition of Metropolitan Statistical Area).

Victim - The recipient of a criminal act, usually used in relation to personal crimes, but also applicable to households.

Victimization - A crime as it affects one individual person or household. For personal crimes, the number of victimizations is equal to the number of victims involved. The number of victimizations may be greater than the number of incidents because more than one person may be victimized during an incident. Each crime against a household is assumed to involve a single victim, the affected household.

Victimization rate - A measure of the occurrence of victimizations among a specified population group.
For personal crimes, this is based on the number of victimizations per 1,000 residents age 12 or older. For household crimes, the victimization rates are calculated using the number of incidents per 1,000 households.

**Victimize** - To commit a crime against a person or household.

**Violence, crimes of** - Rape, sexual assault, personal robbery or assault. This category includes both attempted and completed crimes. It does not include purse snatching and pocket picking. Murder is not measured by the NCVS because of an inability to question the victim.

*Completed violence* - The sum of all completed rapes, sexual assaults, robberies, and assaults. See individual crime types for definition of completed crimes.

*Attempted/threatened violence* - The unsuccessful attempt of rape, sexual assault, personal robbery or assault. Includes attempted attacks or sexual assaults by means of verbal threats. See individual crime types for definition of attempted crimes.