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Technical Report on the Analysis of Small Groups in the 1999 General Social Survey

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TABLE OF CONTENTS

Executive Summary 1

Identifying small groups through a general household survey 1
Methodological considerations and challenges involved in analyzing small groups 1
Analytical comparisons of perceptions of crime, the justice system and victimization of small groups 2

Introduction 3

Chapter One: Identifying Small Groups Through a General Household Survey 5

Sampling Methodology 5
Identifying Aboriginal People, Visible Minorities and Immigrants in the General Social Survey 5
Identifying Aboriginal People in the GSS 6
Identifying Visible Minorities in the GSS 7
Identifying Immigrants in the GSS 8
There is a large overlap between visible minorities and immigrants 8

Chapter Two: Methodological Considerations and Challenges Involved in Analyzing Small Groups 10

Language Non-Response 10
Sampling Variability and Releasability of Small Population Estimates 11
Sampling Variability 11
Releasability 11
Testing for Statistical Significance 12

Chapter Three: Analytical Comparisons of Victimization, Perceptions of Crime and the Justice System Among Small Groups 16

Results of the Bivariate Analysis 16
Personal victimization 16
Spousal violence 18
Fear of Crime 18
Perceptions of the Justice System 20
Results of the Multivariate Analysis 21
Theoretical framework for selecting independent variables 22
Victimization 22
Fear of crime 22
Methods 23
Findings 24
Victimization 24
Fear of Crime 26
Summary 27
References 33

EXECUTIVE SUMMARY

In 1999, as part of its General Social Survey program, Statistics Canada conducted a survey on victimization and public perceptions of crime and the justice system. This was the third time that the General Social Survey (GSS) had examined victimization (previous surveys were conducted in 1993 and 1988). In 1999, the GSS sample was expanded which permitted analysis on small groups, such as Aboriginal people, visible minorities and immigrants.

Identifying small groups through a general household survey

The 1999 GSS interviewed approximately 26,000 people, aged 15 and older, living in the 10 Canadian provinces. Respondents were asked about their experiences with criminal victimization, their fear of crime, and their perceptions about the performance of the justice system. The respondents in the sample were weighted so that their responses represented the population of non-institutionalized persons aged 15 years or older in the ten provinces.

In order to study their criminal victimization, and compare their experiences to those of the total population, Aboriginal people and visible minorities were identified through the use of a question that allowed respondents to self-identify their cultural or racial background. Immigrants were identified through questions pertaining to country of birth, and year of permanent arrival in Canada.

There are a number of considerations to be taken into account in the analysis of these small groups. First, the GSS sample excludes the territories, areas in which high concentrations of Aboriginal people reside. Second, small numbers in the sample survey prohibit a more detailed breakdown of individual Aboriginal and visible minority groups. Third, comparisons between the Aboriginal and non-Aboriginal populations and the immigrant and non-immigrant populations should be made recognizing that there are differences in the age structures of these populations. These differences can have an effect on victimization rates, given that these rates tend to decline with age. Fourth, since only those persons who could speak English or French were eligible to complete the survey, the experiences of those who could not speak either of Canada's official languages are not reflected in the survey results. Finally, there are significant overlaps between the categories of immigrants and visible minorities. Therefore, when undertaking analysis of these populations, one must be aware of the possible impacts of the overlapping characteristics.

Methodological considerations and challenges involved in analyzing small groups

In addition to the considerations identified above, there are some methodological considerations and challenges involved in analyzing small groups in the GSS. First, to increase survey counts of visible minorities and immigrants, oversampling was done in areas with high concentrations of these groups. One of the effects of this oversampling was that the level of non-response due to language was higher than in other GSS cycles that did not oversample these populations. While non-response is dealt with by adjusting the weight of households who responded to the survey to compensate for those who did not respond, it is possible that this increase in non-response had some effect on the survey results. For example, it is possible that those who did not respond due to their inability to speak one of Canada's official languages may have experienced different levels of fear, perceptions of the justice system and victimization than their English or French speaking counterparts and would have thus provided different responses to the questions.

Second, the estimates derived from the GSS are based on information collected from a sample of the population and are therefore subject to sampling error. One measure of sampling variability is the coefficient of variation (CV), expressed as a percentage, which gives an indication of the

uncertainty associated with an estimate. In general, estimates for smaller populations have higher CVs.

Third, one way to determine the releasability of an estimate from the GSS is through the use of approximate variance tables. When using these tables, analysts must not only consider the CV, but also the number of unweighted records which contribute to the calculation of a given estimate. Achieving the minimum number of unweighted records to release an estimate becomes an even greater challenge when dealing with small groups. As a result, many details pertaining to the victimization of these groups are impossible to analyze due to insufficient sample sizes.

Finally, comparing rates or proportions of sub-populations is a challenge that is related to the issue of CVs. As sample size decreases, the average size of error in estimates tends to increase. Therefore, when comparing differences between small groups, there is a greater chance that these differences are the result of sampling variability. As with any estimate obtained from a sample survey, it is necessary to undertake tests of statistical significance to ensure that reported differences between estimates are actual differences and not a result of sampling error.

Analytical comparisons of perceptions of crime, the justice system and victimization of small groups

Despite the considerations and challenges previously identified, small group analysis can be undertaken using the GSS data. Some of the findings[1] include:

Results of the bivariate analysis showed that while the overall Canadian rate of personal victimization[2] was 157 incidents per 1,000 population aged 15 and older, the rate for the immigrant population was substantially lower at 110. For the visible minority population, the rate was consistent with that of the Canadian population[3] (175) and, for the Aboriginal population, the rate was almost twice the national average (288).

There were some differences in levels of fear among visible minorities and immigrants. The greatest variation was between visible minorities and non-visible minorities, where 83% of visible minorities felt either very safe or somewhat safe walking alone, compared to 89% for non-visible minorities. In the case of the immigrant and non-immigrant populations, the variation was not as great (86% versus 89%). No difference was found between Aboriginal and non-Aboriginal people (88% versus 89%).

With respect to their perceptions of the performance of the police, Aboriginal people, immigrants and visible minorities were all less likely than their non-Aboriginal, non-immigrant and non-visible minority counterparts to say police were doing a good job. The largest differences were found between visible minorities and non-visible minorities.

Results of the logistic regression analysis for victimization indicate that being an Aboriginal person was a predictor of personal victimization and that Aboriginal people had almost twice the odds of being victimized as compared to non-Aboriginal people. While it was found that being either an immigrant or a visible minority had no bearing on one's odds of being the victim of a personal crime, a person who was both an immigrant and a visible minority had lower odds of personal victimization.

Conversely, results of the logistic regression analysis for fear indicate that, when all factors were held constant, being an Aboriginal person or an immigrant or a visible minority had no bearing on whether or not someone was fearful of walking alone in their area after dark.

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[1] *Unless otherwise noted, all of the reported differences are statistically significant.*

[2] *This rate excludes all incidents of spousal physical and sexual assault.*

[3] *The difference between the rate for Canada (157) and the rate for visible minorities (175) is not statistically significant.*

INTRODUCTION

In 1999, as part of its General Social Survey program, Statistics Canada conducted a survey on victimization and public perceptions of crime and the justice system. This was the third time that the General Social Survey (GSS) had examined victimization (previous surveys were conducted in 1993 and 1988). For the 1999 cycle, the federal Policy Research Initiative approved an expanded General Social Survey program that would allow for a survey with an increased sample. The objective for redesigning and expanding the GSS was to support research initiatives in the areas of social cohesion and human development. In particular, the expanded sample was to permit analysis on groups of interest, including Aboriginal people, visible minorities and immigrants.

Performing analysis on small groups using a sample survey involves a number of methodological considerations and challenges. Since this is the first time that the GSS attempted to measure victimization and perceptions of crime among these smaller sub-groups, this study begins by exploring and documenting these challenges through a discussion addressing such issues as over-sampling, response rates, non-response due to language, releasability and sampling variability.

This study also analyzes the results of measuring victimization patterns and perceptions of crime of Aboriginal people, visible minorities, and immigrants through a general population crime survey. Rates are compared to the non-Aboriginal, non-visible minority and non-immigrant groups to determine whether there are any variations based on identifiable socio-demographic characteristics. Then, a multivariate analysis is presented wherein the unique effects of being an Aboriginal person, an immigrant or a visible minority on one's risk of victimization and fear are considered while controlling for the effects of other factors that have been shown to be significant predictors of victimization and fear.

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CHAPTER ONE: IDENTIFYING SMALL GROUPS THROUGH A GENERAL HOUSEHOLD SURVEY

Sampling Methodology

Statistics Canada, as part of the General Social Survey Program, conducts a survey on criminal victimization every 5 years. The most recent survey was conducted in 1999, and involved approximately 26,000 people, aged 15 and older, living in the 10 Canadian provinces. The previous two cycles of the GSS on victimization involved samples of approximately 10,000 people aged 15 and older.

For each province, minimum sample sizes were determined to ensure that certain provincial victimization estimates would have acceptable low sampling variability, based on estimates derived from the 1993 GSS on victimization. Once these provincial targets were met, most of the remaining sample was distributed across provinces to improve the precision of the national level estimates. Finally, in order to help improve estimates for visible minorities, the remainder of the sample was allocated to the Census Metropolitan Areas of Toronto and Vancouver, which have a high proportion of visible minorities living in these areas.

Computer assisted telephone interviewing (CATI) was used to collect data using a sampling technique known as Random Digit Dialing, which means that phone numbers are randomly dialed within a specific geographic region. The reason for using the random digit dialing process was that all households, including those with new telephone numbers or unlisted numbers, had a chance of being selected, therefore eliminating bias in the sample. Once the household was reached, a respondent was randomly selected from among the eligible persons (people 15 years of age or older) in the household. Respondents were interviewed in the official language of their choice (English or French) and interviews by proxy were not allowed.

The survey was conducted between February and December 1999. The sample was evenly distributed over the 11 months to eliminate seasonal variation in the information collected. All respondents were asked about their experiences with selected types of criminal victimization in the 12 months preceding the survey, and their opinions on a variety of justice-related topics including their fear of crime, and their perceptions about the performance of the police, criminal courts, and prison and parole systems.

The respondents in the sample were weighted so that their responses represented the population of non-institutionalized persons aged 15 years or older in the ten provinces, which averaged 24,260,326 over the 11 months of data collection.

Identifying Aboriginal People, Visible Minorities and Immigrants in the General Social Survey

In order to collect information on the criminal victimization of certain smaller groups, there was a need to develop indicators that would capture the cultural background of respondents. The 1999 GSS on victimization was the first attempt by Statistics Canada to measure cultural or racial background through a random household telephone survey. This was done through the use of a question that allowed respondents to self-identify their cultural or racial background. This question was borrowed from the Census and was adapted to be read to respondents over the telephone. Through focus group testing and a large-scale field test, the question was tested for clarity and reliability.

Canadians come from many cultural or racial backgrounds. I'm going to read you a list. Are you… (maximum of 4 answers permitted per respondent)

White?
Chinese?
Aboriginal, that is North American Indian, Métis, or Inuit?
South Asian? (e.g. East Indian, Pakistani, Punjabi, Sri Lanken)
Black? (e.g. African, Haitian, Jamaican, Somali)
Filipino?
Latin American?
Southeast Asian? (e.g. Cambodian, Indonesian, Laotian, Vietnamese)
Arab? (e.g. Egyptian, Lebanese, Moroccan)
Central or West Asian? (e.g. Afghan, Iranian, Turk)
Japanese?
Korean?
Other?

Identifying Aboriginal People in the GSS

If GSS respondents self-identified their cultural or racial background as 'Aboriginal' in the question above, they were considered to be Aboriginal people. Furthermore, according to the definitions established by the *Employment Equity Act,* respondents who selected 'Aboriginal' as their sole cultural background were *not* considered to be visible minorities.[4]

In the 1999 GSS, there were 524 respondents aged 15 and older who identified themselves as Aboriginal people. Their weighted representation was 2% of the population aged 15 and over in the 10 provinces. If we compare the representation of Aboriginal people in the GSS with their representation in the Census, Aboriginal people aged 15 and over represented 2.2% of the population in the 1996 Census. Aboriginal representation in most of the provinces was similar to Census data, with the exception of the Prairie provinces (see Table 1.1), where the GSS representation of Aboriginal people was slightly lower than their Census representation. This difference can be partially explained by the fact that Manitoba, Saskatchewan and Alberta are all provinces with high on-reserve Aboriginal populations. While the random digit dialling process does not exclude on-reserve populations, there is some anecdotal evidence that telephone ownership is lower on reserves and in remote areas. Therefore, on-reserve residents may be more difficult to reach through a telephone survey.

There are a number of considerations that should be noted in the analysis of Aboriginal people's victimization through the GSS. First, the GSS analysis excludes the territories, areas in which high concentrations of Aboriginal people reside (see Box 1). Furthermore, although it is recognized that the Aboriginal culture is diverse, and comprises a number of groups such as the North American Indian, Métis and Inuit groups, small numbers in the sample survey prohibit a more detailed breakdown of Aboriginal groups. Finally, comparisons between the Aboriginal and non-Aboriginal populations should be made with the consideration that, according to the 1996 Census, the Aboriginal population in Canada is on average 10 years younger than the average age for the general population (25.5 versus 35.4).[5] This difference can have a substantial effect on many socio-economic variables. It can also have a significant impact on victimization rates, given that younger age groups have been shown to be the most likely to be victimized.

[4] *If, however, a respondent selected more than one response, including Aboriginal and at least one of the following: Chinese, South Asian, Black, Arab, Central or West Asian, Filipino, Southeast Asian, Latin American, Japanese or Korean, he/she was considered to be both an Aboriginal person and a visible minority. There was little overlap, however, among Aboriginal people and visible minorities. In fact, only 12 respondents in the sample reported having a mixed Aboriginal and visible minority background. Therefore, Aboriginal and visible minority categories were mutually exclusive in over 99% of the GSS sample.*

[5] *Census of Canada, 1996.*

Box 1: Testing in the North

Typically, the GSS is not conducted in the North due to the low rate of telephone coverage in remote communities and the potentially high respondent burden on small groups. At the same time, crime data to inform policies related to justice issues in the territories have been limited to police-reported statistics and court data. Beyond these sources, there is very little information about the scope and nature of victimization in the North.

Following consultations with territorial statistical agencies and various Statistics Canada experts, it was decided that the 1999 GSS would be tested in the Yukon and the Northwest Territories.[6] A sample of approximately 1,000 interviews (475 in the Yukon and 528 in the Northwest Territories) were completed by telephone. Data collection was carried out from June to December 1999 in the Yukon and from September to December 1999 in the Northwest Territories. The main objective of the testing was to assess whether reliable estimates of criminal victimization could be obtained for these two territories through a telephone survey.

There was no indication of heavy respondent burden in the North. Most respondents contacted were pleased to participate in the survey. Response rates were slightly higher in the Yukon (84.8%) and the Northwest Territories (82.5%) than they were for Canada overall (81.3%).

However, undercoverage of the target population was encountered. Slippage rates[7] in the Northwest Territories (21.2%) and in the Yukon (31.1%) were almost 4 times and over 5 times, the rate in the 10 provinces (5.6%). A contributor to slippage in telephone surveys is the sub-population with no access to a telephone. High slippage rates increase the likelihood of estimates being inaccurate, since they suggest that a large portion of the population could never potentially be in the sample. When this unsampled portion of the population is large and differs from the portion that is represented in the sample, the estimates will be skewed towards the values of the sampled portion of the population. It is generally possible to reduce such inaccuracies by adjusting the sample weights to make the weighted sample more representative. Even after making such adjustments to the weights, there remain significant issues with the Northwest Territories estimates. In particular, the sample over-represents those with more than 8 years of schooling; this over-representation should be considered when interpreting these estimates.

Identifying Visible Minorities in the GSS

Whether or not respondents belonged to a visible minority group was determined using the criteria outlined in the *Employment Equity Act.* The *Act* defines visible minorities as 'persons, other than Aboriginal peoples, who are non-Caucasian in race or non-white in colour[8]'. The visible minority population in the GSS therefore includes those reporting themselves as Chinese, South Asian, Black, Arab, Central or West Asian, Filipino, Southeast Asian, Latin American, Japanese or Korean. When self-identifying cultural or racial background, respondents were given the option to choose up to a maximum of 4 categories. Respondents were *not* considered to be visible minorities if they selected the following categories:

1. Only the 'white' category
2. Only the 'Aboriginal' category
3. Only the 'white' and 'Aboriginal' categories
4. Only the 'white' and 'Latin-American' categories
5. Only the 'white' and 'Arab' categories
6. Only the 'white' and 'Central or West Asian' categories

[6] *At the time of the survey, Nunavut was just being formed as a territory and work was in progress to develop an omnibus survey of the Inuit population in the context of Statistics Canada's Aboriginal Peoples survey.*

[7] *The **slippage rate** is the percentage of the population of interest (i.e. the population for which estimates are produced) which is not covered by the frame and which is therefore always excluded from the survey sample.*

[8] *To be consistent with the definition in the* Act, *a respondent had to report at least one cultural or racial background that was not Aboriginal or white. This means that people who reported only 'Aboriginal' were not considered visible minorities.*

Through this process, 2,356 respondents to the 1999 GSS were identified as visible minorities. This translates into a proportion of approximately 10% of the weighted population, a rate that was similar to their representation in the Canadian population (11%), according to the 1996 Census.

Due to a relatively small sample of respondents who were identified as visible minorities, analysis of these data is limited to comparing visible minorities as a group to non-visible minorities. The analysis therefore, does not distinguish among individual visible minority groups. This is undoubtedly a data limitation since various cultural groups may not be homogeneous in their fears, perceptions of the justice system, and victimization experiences.

Identifying Immigrants in the GSS

Three separate questions in the GSS were used to identify whether a respondent was an immigrant. First, respondents were asked to identify whether they were born in Canada or in a country outside of Canada. If they were born outside of Canada, they were asked to specify the country where they were born. They were then asked what year they first came to Canada to live permanently. This approach allowed both the recent immigrant and the earlier arriving immigrant populations to be studied. Immigrants were considered 'recent' immigrants if they arrived in Canada between 1995 and 1999, while 'earlier arriving' immigrants settled in Canada before 1995.

There were 4,641 respondents to the 1999 GSS who were identified as immigrants. Among these, there were 541 people who were considered recent immigrants and the remaining 4,100 were earlier arriving immigrants. Due to the small number of recent immigrants in the sample, the analysis in this report is limited to examining all immigrants as one group. Overall, immigrants aged 15 and over represented approximately 19.1% of the weighted GSS population, a proportion that was similar to their representation in the 10 provinces (20.7%), according to the 1996 Census.[9] The immigrant population representation across the 10 provinces was also comparable to Census data (see Table 1.2).

There is one important limitation with using GSS survey data to analyze the experiences of the immigrant population. Only those immigrants who were able to communicate in either English or French were eligible to complete the survey. The 1996 Census shows that 13% of immigrants who arrived in the 1991-1996 period were unable to speak either of Canada's official languages.[10] Therefore, the experiences of immigrants described in this study more accurately reflect those of immigrants able to communicate in one of the two official languages and not those of the entire immigrant population.

Comparisons between the immigrant and non-immigrant populations should be made with the consideration that there are distinct differences in the age structures of immigrants and non-immigrants. For example, immigrants are older on average than the population born in Canada. According to the 1996 Census, only 15% of immigrants, compared with 38% of people born in Canada, were under age 25. These differences, in turn, can have a substantial effect on many socio-economic variables. They can also have an effect on victimization rates, given that rates of victimization decline with age.

There is a large overlap between visible minorities and immigrants

The visible minority and immigrant categories are not mutually exclusive. In the 1999 GSS, 82% of all visible minorities were immigrants, and 44% of all immigrants were visible minorities. Therefore, when undertaking analysis of the immigrant or visible minority populations, one must be aware of the possible impacts of the overlapping characteristics.

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[9] In 1996, the total number of immigrants (in all age groups) represented 17% of the total Canadian population (in all provinces and territories).

[10] See Chapter 2 for a discussion on the impact of non-response due to language.

Table 1.1

Provincial Aboriginal Representation, 1999 GSS and 1996 Census

	GSS	Census
	% of total provincial population aged 15+	
Total Atlantic provinces[1]	1.7 *	1.4 *
Quebec	0.9	0.9
Ontario	1.2	1.2
Manitoba	6.1	9.4
Saskatchewan	7.0	8.7
Alberta	2.9	3.8
British Columbia	3.1 *	3.2 *
Total 10 provinces	1.9	2.2

** The differences between the estimates for the GSS and the Census are not statistically significant.*
[1]Includes Newfoundland and Labrador, Prince Edward Island, Nova Scotia and New Brunswick.
Sources: *Statistics Canada, General Social Survey, 1999 and Census of Canada, 1996.*

Table 1.2

Immigrants as a Proportion of Total Provincial Population, 1999 GSS and 1996 Census

	GSS	Census
	% of total provincial population aged 15+	
Newfoundland and Labrador	1.6 *	1.8 *
Prince Edward Island	4.6 *	4.0 *
Nova Scotia	5.5	5.5
New Brunswick	5.5	4.0
Quebec	9.4	10.9
Ontario[1]	28.1	30.4
Manitoba	13.3 *	15.1 *
Saskatchewan	5.2	6.6
Alberta	16.5	18.7
British Columbia[2]	26.8	28.8
Total 10 provinces	19.1	20.7

** The differences between the estimates for the GSS and the Census are not statistically significant*
[1]The city of Toronto was oversampled in the 1999 GSS.
[2]The city of Vancouver was oversampled in the 1999 GSS.
Sources: *Statistics Canada, General Social Survey, 1999 and Census of Canada, 1996.*

CHAPTER TWO: METHODOLOGICAL CONSIDERATIONS AND CHALLENGES INVOLVED IN ANALYZING SMALL GROUPS

Response rates, sampling variability, releasability and statistical significance are important considerations in the analysis of sample survey data and their impact is more pronounced when analyzing smaller sub-samples of the population. This chapter explores these methodological challenges in the context of analyzing, publishing and releasing estimates for small sample populations.

Language Non-Response

In the 1999 GSS, contact was made or attempted with 31,878 households. From these, 25,876 usable responses were obtained, resulting in a response rate of 81.3%. The remaining households were considered non-responses. Types of non-response included: household not reached, household or respondent refusal, non-response due to illness or death, and non-response due to language. Approximately 8% of all non-responses were due to either the respondent's or the household's inability to communicate in either English or French.

As noted in Chapter 1, in order to increase the number of respondents among the visible minority and immigrant communities, oversampling was done in Toronto and Vancouver, areas with high concentrations of visible minorities and immigrants. A concern with oversampling in areas where there are high concentrations of visible minorities and immigrants is that the non-response rate due to language would be elevated. According to the 1996 Census, 9% of Canada's visible minority population[11] and 13% of recent immigrants were unable to speak either of Canada's official languages.[12] In order to track whether the oversampling of Toronto and Vancouver affected the non-response rate due to language, a comparison was made between Cycle 13 and the rates for two cycles of the General Social Survey that had not oversampled visible minority or immigrant populations. Total samples from the 1998 Cycle 12 and the 2000 Cycle 14 of the General Social Survey were examined for the census metropolitan area of Toronto -- the city in which most of the oversampling for Cycle 13 was done.

As predicted, oversampling did have a slight impact on the level of non-response due to language in Cycle 13. Considering the total sample of households from each of the three cycles, the non-response rates due to language for both Cycle 12 (3.1%) and Cycle 14 (2.1%) were lower than that of Cycle 13 (4.3%) (see Box 2).

When considering the breakdown of non-response types in each cycle, the variations in non-response due to language between cycles were greater. In Cycle 12, the Toronto rates of non-response due to language made up 14.6% of all non-response types, while in Cycle 14, they made up 8.6%. These proportions were much smaller than the 19.5% proportion from Cycle 13.

[11] *Census of Canada, 1996.*
[12] *Census of Canada, 1996.*

Box 2: Comparing the rate of non-response in Toronto for three cycles of the General Social Survey (GSS)

Non-response due to language…	Cycle 12 (1998)	Cycle 13[2] (1999)	Cycle 14 (2000)
as a % of the total sample of households	3.1	4.3	2.1
as a % of all non-responses	14.6	19.5	8.6

[2]In this cycle of the GSS, the city of Toronto was oversampled in an effort to increase the representation of visible minorities and immigrants in the sample.

While non-response is dealt with by adjusting the weight of households who responded to the survey to compensate for those who did not respond, it is possible that this increase in non-response had some effect on the survey results. For example, it is plausible that those who did not respond due to their inability to speak one of Canada's official languages may have experienced different levels of fear, perceptions of the justice system and victimization than their English or French speaking counterparts and would have thus provided different responses to the questions.

Sampling Variability and Releasability of Small Population Estimates

Sampling Variability

The estimates derived from the GSS are based on information collected from a sample of the population and are therefore subject to sampling error. One measure of sampling variability is the coefficient of variation (CV). The CV gives an indication of the uncertainty associated with an estimate and is expressed as a percentage. If the survey was repeated many times, the difference between the estimate and the true value, expressed as a percentage of the estimate, would be less than twice the CV approximately 19 times out of 20. For example, if the CV of the estimate was 4%, the true value would lie within 8% of the estimate about 19 times out of 20. Any estimate with a CV of more than 33.3% is considered unreliable and is not published. When the CV of the estimate is between 16.6% and 33.3%, the symbol "†" is used indicating that these estimates should be used with caution.

In general, estimates for smaller populations have higher CV's. Table 2.1 illustrates the variations in CV's for personal victimization incidents involving immigrants and non-immigrants, visible minorities and non-visible minorities, and Aboriginal people and non-Aboriginal people. The estimates for the personal victimization of immigrants, visible minorities and Aboriginal people all have higher CVs than their counterparts, since they represent a smaller sample of the population and sample counts are lower. Furthermore, for the most part, since immigrants are the largest of the small groups, their CV's tend to be lower than those of visible minorities and Aboriginal people.

Releasability

One way to determine the releasability of an estimate from the General Social Survey is through the use of approximate variance tables. When using these tables, analysts must not only consider the CV, but also the number of unweighted records which contribute to the calculation of a given estimate. The number of unweighted records should be at least 15 persons or households or 40 victimization incidents; otherwise, the weighted estimate should not be released.

Achieving numerators of at least 15 in the case of person or household level data or 40 in the case of incident level data, becomes an even greater challenge when dealing with sub-

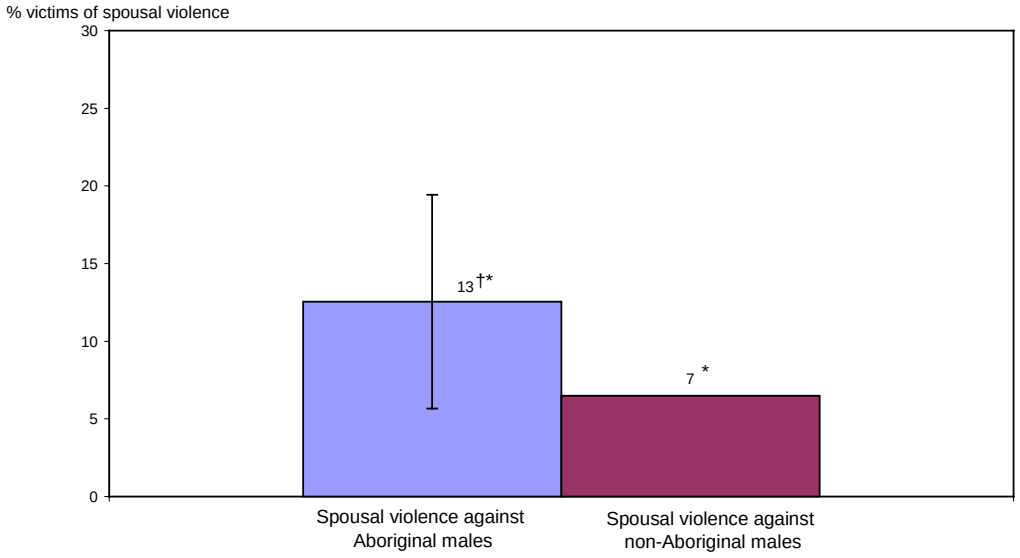
populations. For example, while the GSS is designed to produce estimates that can provide overall victimization rates and risk factors for personal victimization, it also seeks to determine specific details about each of the victimization incidents. These include such details as: the location of the incident, the presence of a weapon and whether the victim suffered an injury. When studying the immigrant, visible minority and Aboriginal populations in cases of general victimization incidents, many of these additional details are impossible to analyze due to insufficient sample sizes.

Testing for Statistical Significance

Comparing rates or proportions of sub-populations is a challenge that is related to the issue of CVs because as sample size decreases, the average size of error in estimates tends to increase. Therefore, when comparing differences between small groups, there is a greater chance that these differences are the result of sampling variability. As with any estimate obtained from a sample survey, it is necessary to undertake tests of statistical significance to ensure that reported differences between estimates are actual differences and not a result of sampling error. This concept is best illustrated through a figure providing an example of differences that are not statistically significant (see Figures 2.1 and 2.2).

Figure 2.1

Differences in 5-year rates of spousal violence for Aboriginal and non-Aboriginal males are not statistically significant

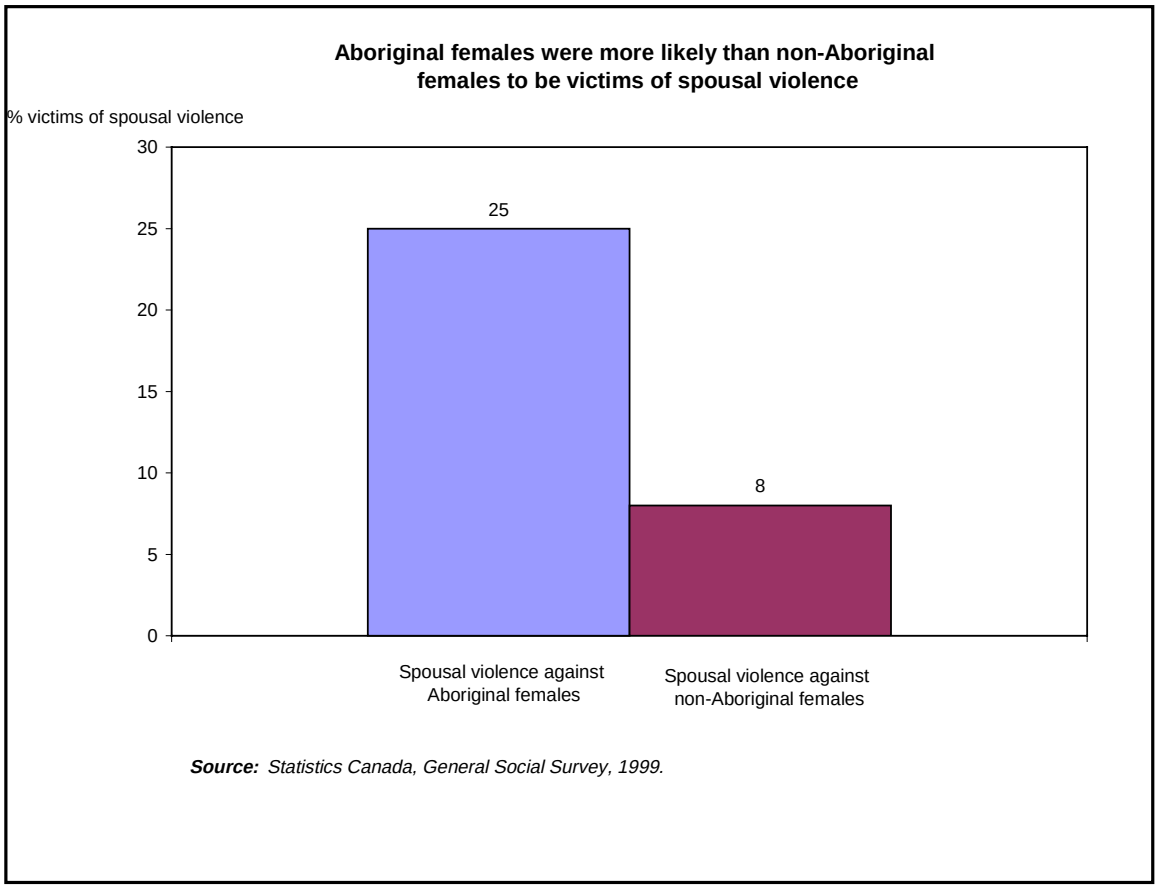


** The difference between these two estimates is not statistically significant.*
†Coefficient of variation between 16.6% and 33.3%.(26.5%)
Source: *Statistics Canada, General Social Survey, 1999.*

Figures 2.1 and 2.2 show rates of spousal violence against Aboriginal and non-Aboriginal peoples, among males and females. While it appears as though Aboriginal males were more likely to be victims of spousal violence than their non-Aboriginal counterparts (13% versus 7%), after performing tests of statistical significance, this difference was found not to be significant.

Thus, in the analysis, no difference would be reported. In contrast, the difference between Aboriginal and non-Aboriginal females was found to be statistically significant. Therefore, it would be correct to say that Aboriginal women were about 3 times more likely than non-Aboriginal women to have reported an assault by a current or ex-spouse in the 5 years preceding the survey.

Figure 2.2



Source: *Statistics Canada, General Social Survey, 1999.*

Table 2.1

Coefficients of variation for the victimization of Aboriginal people, immigrants and visible minorities 1999[1]

Victim characteristics	**Total personal crimes**	C.V.	Theft personal property	C.V.	Violent Crimes: **Total violent crimes**	C.V.	Sexual assault	C.V.	Robbery	C.V.	Assault	C.V.
					No. of incidents (000s)							
Total	4,522		1,831		2,691		502		228		1,961	
Immigrant Status												
Immigrants	626	5.3	326	8.0	300	8.6	45	22.8	F		230	9.5
Canadian Born	3,816	1.3	1,481	3.5	2,335	9.5	448	6.9	197	10.6	1,690	3.5
Don't Know/ Not Stated	80	17	F		56	20.6	F		F		F	
Visible Minority Status												
Visible Minority	483	6.5	246	9.5	237	9.5	39	24.1	F		160	12.4
Non visible minority	3,965	1.3	1,562	3.5	2,404	2.9	454	6.9	186	10.6	1,763	2.9
Don't Know/ Not Stated	74	17.6	F		51	21.6	F		F		F	
Aboriginal Status												
Aboriginal	183	10.6	39	24.1	144	12.4	F		F		103	15.2
Non-Aboriginal	4,269	1.3	1,769	2.9	2,499	2.9	461	6.9	215	10.6	1,823	2.9
Don't Know/ Not Stated	70	18.3	F		F		F		F		F	

F too unreliable to be published
Figures may not add to total due to rounding.
[1]Includes all incidents of spousal sexual and physical assault.
Source: *Statistics Canada, General Social Survey, 1999.*

CHAPTER THREE: ANALYTICAL COMPARISONS OF VICTIMIZATION, PERCEPTIONS OF CRIME AND THE JUSTICE SYSTEM AMONG SMALL GROUPS

As presented in chapters one and two, examining immigrants, visible minorities and Aboriginal people through a general household survey presents a number of technical and methodological challenges. This chapter will present the analysis of these groups taking into consideration these challenges. Specifically, the following chapter will highlight some of the main findings of the GSS as they relate to the victimization experiences of immigrants, visible minorities and Aboriginal people[13] as well as their perceptions of crime and the justice system.

Results of the Bivariate Analysis[14]

Personal victimization[15]

The rates of personal victimization (see Box 3) varied among the three sub-populations. While the overall rate of personal victimization was 157 incidents per 1,000 population aged 15 and older, the rate for the immigrant population was substantially lower at 110. For the visible minority population, the rate was consistent with that of the Canadian population[16] (175) and, for the Aboriginal population, the rate was almost twice the national average (288).

Due to small sample sizes, analysis of individual crime types is mostly limited to assault and theft of personal property. In the case of sexual assault, the rate is only releasable for the immigrant population and in the case of robbery, the rate is not releasable for any of the sub-populations. Consistent with the overall rates of personal victimization, rates for Aboriginal persons for total violence and assault were more than double the national rate. However, in the case of theft of personal property, the rates for Aboriginal people were fairly consistent with the national average. In contrast, rates for the immigrant population for total violent crime, assault and sexual assault were half the rate of the national average, whereas the rate for theft of personal property was again, consistent with the national average. Finally, in the case of the visible minority population, their rates tended to be consistent with the national average, with the exception of theft of personal property, where their rate was slightly higher than the national average (see Figure 3.1).

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[13] For more information on the analysis of the GSS on victimization, see the profile series produced by the Canadian Centre for Justice Statistics (2001), Mihorean et al. (2001), Tufts (2000), and Trainor and Mihorean (eds.) (2001).

[14] Unless otherwise noted, reported differences between groups in this report are statistically significant.

[15] Spousal violence is considered separately because of the different context in which spousal violence occurs and because the analysis of spousal violence rates is based on the previous 5 years, as opposed to 1-year rates for general victimization. Readers are also cautioned that the results of this survey describe rates of victimization committed against Aboriginal people, immigrants and visible minorities but that the identity of perpetrators is unknown. No assumptions should be made about the cultural identity of the perpetrators based on the identity of the victims.

[16] The difference between the rate for Canada (157) and the rate for visible minorities (175) was not statistically significant.

Box 3: Analysis of the victimization of Aboriginal people, immigrants and visible minorities

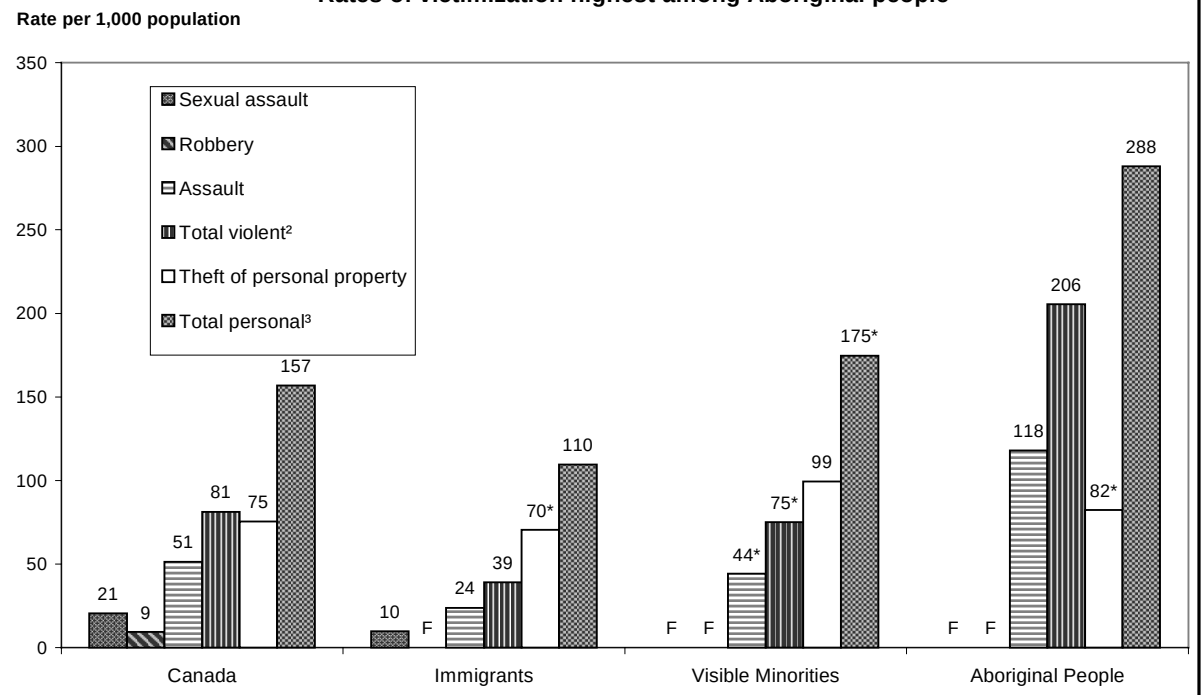
The 1999 GSS measured the incidence of victimization in the 12 months preceding the survey, for eight offence types, based on the *Criminal Code* definitions for these crimes. Sexual assault, robbery, assault and theft of personal property are all considered personal crimes while break and enter, motor vehicle theft / parts theft, theft of household property, and vandalism are considered household crimes.

For personal crimes, analysis can be undertaken by examining the personal characteristics of the respondent who was victimized. For example, the sex, age, marital status, as well as the cultural background and immigration status of the respondent can all be examined as risk factors for personal victimization.

In contrast, for household crimes, the personal characteristics of the respondent are not typically considered since it is all members of the household who are considered to be victims of these types of crimes, and these members will undoubtedly have different personal characteristics. Household risk factors are more appropriately utilized in the analysis of household victimization rates. Such risk factors include: the location of the residence (urban or rural), household income, household size (number of persons living in the house), the type of home, and home ownership (whether the victims own or rent their home).

When studying the victimization of small groups such as Aboriginal people, immigrants and visible minorities, the analysis must be limited to the four personal offence types for the reasons described above. This presents added challenges since the portion of the population which has experienced victimization is small.

Figure 3.1



** the difference between this rate and the rate for Canada was not statistically significant .*
F too unreliable to be published.
[1]Excludes all incidents of spousal physical and sexual assault.
[2]The violent crime category includes sexual assault, robbery and assault.
[3]The personal crime category includes all violent crimes and theft of personal property.
Source: *Statistics Canada, General Social Survey, 1999.*

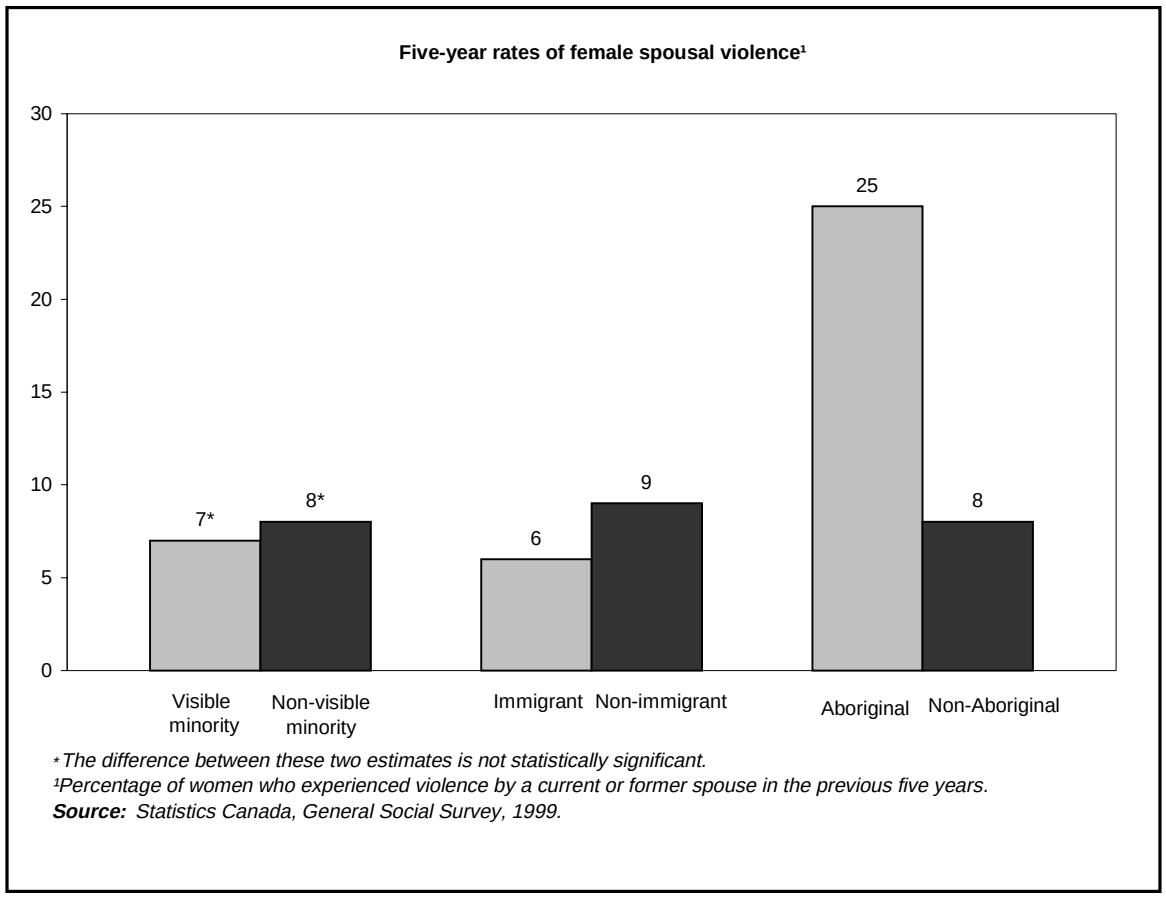
Spousal violence

Similar to their general victimization experiences, Aboriginal people were more likely to be victims of spousal violence as compared to non-Aboriginal people, visible minorities and immigrants. Approximately 20% of Aboriginal people who reported having a current or ex-spouse with whom they had had contact in the past 5 years, reported some form of spousal violence. This proportion was much higher than that of non-Aboriginal people (7%), immigrants (5%) and visible minorities (5%) (see Table 3.1).

While the variations between the immigrant / non-immigrant and the visible minority / non-visible minority populations were not as great as for the Aboriginal / non-Aboriginal populations, some differences were found. Both the immigrant and visible minority populations were slightly less likely than their counterparts to report having been victims of spousal violence (5% versus 8%) in the 5 years preceding the survey.

While spousal violence rates for female immigrants were slightly lower than those of non-immigrants (6% versus 9%), there was no difference for female visible minorities and non-visible minorities (7% versus 8%).[17] Aboriginal females, however, were about 3 times more likely than their non-Aboriginal counterparts to have reported spousal violence in the past 5 years (25% versus 8%) (see Figure 3.2). With respect to male spousal violence, rates for both male immigrants and male visible minorities were slightly lower than their counterparts (4% versus 7% respectively), while the difference between Aboriginal and non-Aboriginal males was not statistically significant (see Figure 3.3).

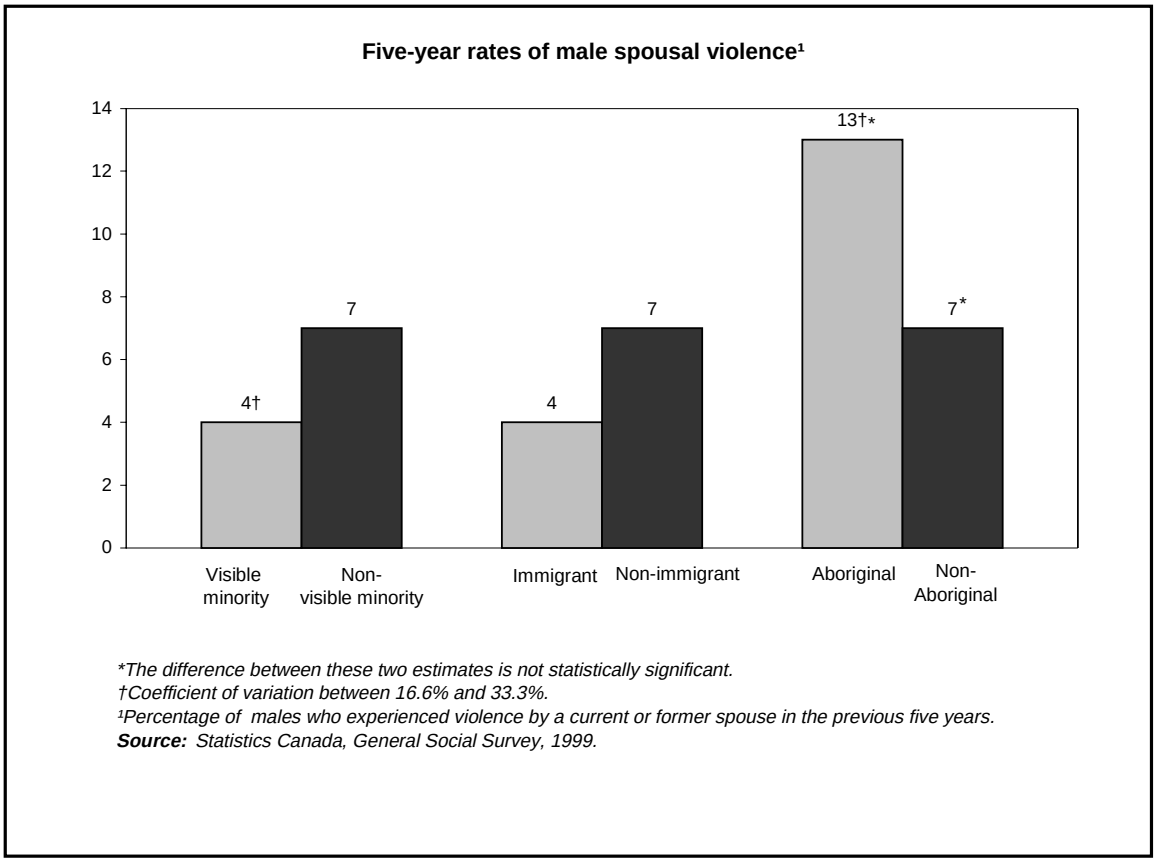
Figure 3.2



** The difference between these two estimates is not statistically significant.*
¹Percentage of women who experienced violence by a current or former spouse in the previous five years.
Source: *Statistics Canada, General Social Survey, 1999.*

[17] *This difference was not statistically significant.*

Figure 3.3



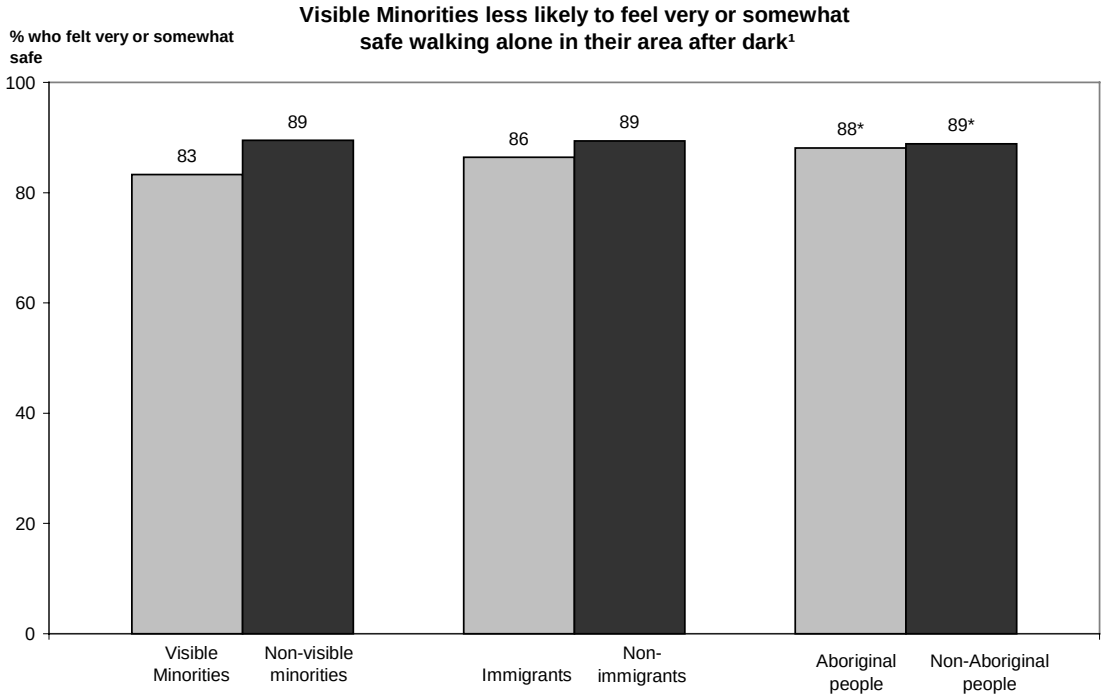
**The difference between these two estimates is not statistically significant.*
†Coefficient of variation between 16.6% and 33.3%.
[1]Percentage of males who experienced violence by a current or former spouse in the previous five years.
Source: *Statistics Canada, General Social Survey, 1999.*

Fear of Crime

A common measure of fear in victimization surveys involves asking respondents how safe they feel from crime when walking alone in their area after dark. In examining the visible minority and immigrant populations, some differences in levels of fear were found. The greatest variation was between visible minorities and non-visible minorities, where 83% of visible minorities felt either very safe or somewhat safe walking alone, compared to 89% for non-visible minorities (see Figure 3.4). In the case of the immigrant and non-immigrant populations, the variation was not as great (86% versus 89%). No difference was found between Aboriginal and non-Aboriginal people (88% versus 89%[18]).

[18] *This difference was not statistically significant.*

Figure 3.4



** The difference between these two estimates is not statistically significant.*
[1]Includes only those who engaged in this activity.
Source: *Statistics Canada, General Social Survey, 1999.*

Perceptions of the Justice System

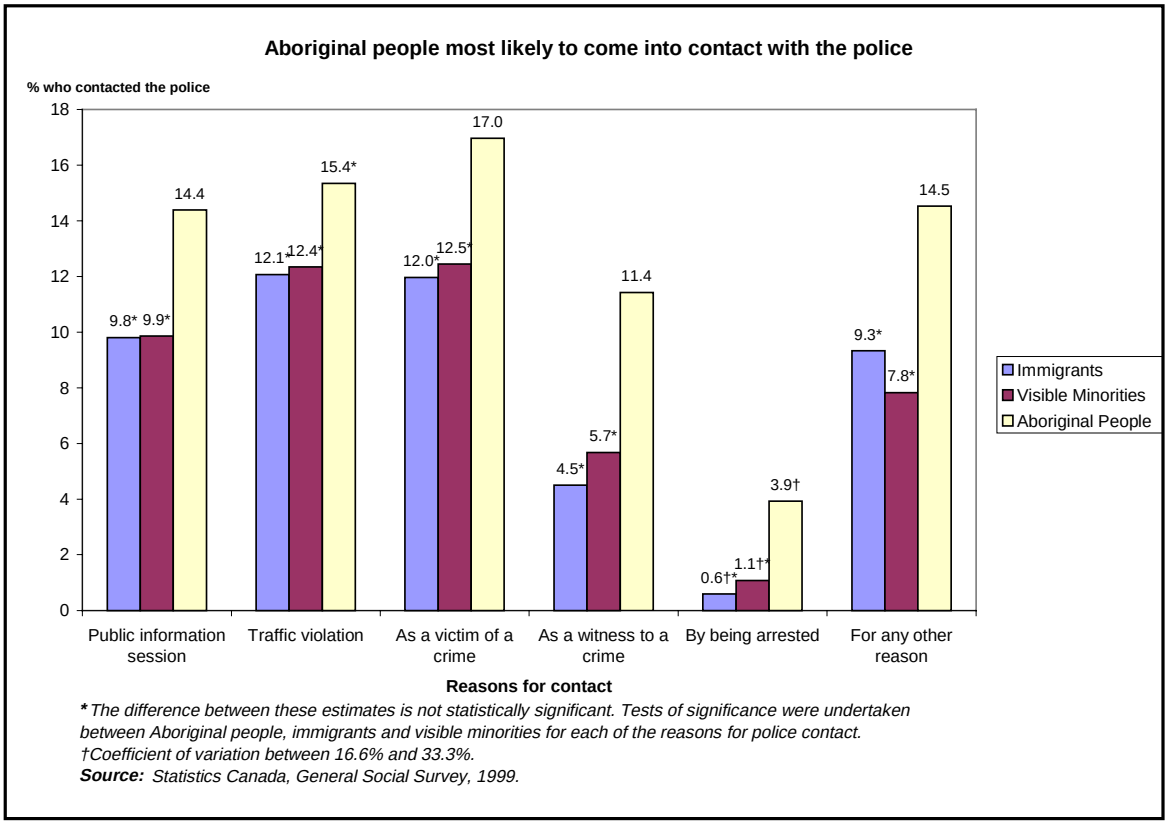
In order to assess perceptions of and attitudes toward the justice system, respondents were asked to state whether they felt the police, the courts, the prison system and the parole system were doing either a good, average or poor job in regards to various aspects of their work. The greatest variations were found in perceptions towards police, with all three sub-groups less likely than their counterparts to say police were doing a good job (see Tables 3.1, 3.2, 3.3). The largest differences were found between visible minorities and non-visible minorities.

While the majority of respondents from all groups said that the police were doing a good or fair job, when looking at the likelihood of these populations responding that the police were doing a poor job, differences were found only between the Aboriginal and non-Aboriginal groups. Aboriginal people were more likely than non-Aboriginal people to say the police were doing a poor job.

Another way to assess perceptions towards the justice system is through an examination of "don't know" responses to these questions. While Aboriginal people were slightly less likely or as likely as non-Aboriginal people to provide a response of "don't know", both the visible minority and immigrant populations were, on average, twice as likely to indicate "don't know" than their counterparts (see Tables 3.1, 3.2, 3.3). Possible explanations for these findings may include the fact that, according to the GSS, Aboriginal people were more likely than immigrants and visible minorities to have had contact with the police (see Figure 3.5). This undoubtedly provided them with greater knowledge of the justice system. Conversely, immigrants and visible minorities (who constitute a substantial fraction of immigrants), by the fact that they may have been living in

Canada for a shorter period, may not have had the opportunity to acquire knowledge about the justice system. Therefore, it is perhaps more difficult for immigrants and visible minorities to respond to these types of questions.

Figure 3.5



***** *The difference between these estimates is not statistically significant. Tests of significance were undertaken between Aboriginal people, immigrants and visible minorities for each of the reasons for police contact.*
†Coefficient of variation between 16.6% and 33.3%.
Source: *Statistics Canada, General Social Survey, 1999.*

Results of the Multivariate Analysis

While the above analysis provides a profile of characteristics associated with victimization, fear and perceptions, simple univariate and bivariate analyses do not take into consideration that some of the identified factors could be correlated to one another. For example, Aboriginal people are younger on average than non-Aboriginal people. This age difference can have an effect on victimization rates, given that younger age groups have been shown to be the most likely to be victimized. In other words, this interrelationship could mediate the influence of any one of the independent measures. Therefore, for a more global picture, the measures must be considered jointly.

The dependent variables

The two dependent variables that are used for these models are:

-Whether or not a person had been the victim of at least one personal crime in the 12 months preceding the survey

-Whether a person felt safe from crime when walking alone in their neighbourhood after dark[19]

Due to the dichotomous nature of the variables, one appropriate method of examining the unique effects of each of the variables is through logistic regression. In this analysis, logistic regression models were used to isolate the effect of selected factors on the dependent variables listed above. Each of the factors, or independent variables, was fitted into a logistic regression model to determine their unique effects while the effects of the others were held constant.

Theoretical framework for selecting independent variables

Factors that have been cited in the research literature as being significant predictors of victimization and fear were included in the models and are described below.

Victimization[20]

Similar to examining factors related to fear, a number of factors have been cited in the literature to influence a person's risk of victimization. A person's routine activities, as indicated by their lifestyle, their proximity and their exposure to crime, are common measures to assess their risk of victimization (Cohen and Felson 1979; Meithe and Meier 1990).

Lifestyle factors are characterized as behaviours and habits that could place individuals at risk of being victimized. Researchers have used characteristics such as gender, age, income, marital status and main activity as lifestyle factors (Cohen and Felson 1979; Miethe, Stafford and Long, 1987; Sacco, Johnson and Arnold 1993; Kennedy and Forde 1990; Collins and Cox 1987). Individuals such as young, single students, whose lifestyles generally involve fewer family responsibilities and more time outside of the home, have a greater risk of victimization than those who are older, married and employed or keeping house. The *lifestyle* indicators chosen from the GSS data include gender, age, income, main activity and marital status.

Proximity to crime assesses how close a person is to potential offenders. For example, a person who lives in a community with a high crime rate has a higher risk of being victimized than someone who lives in a community with a lower crime rate. Common measures of *proximity* to crime include place of residence, socio-economic characteristics of the area, and the perceived safety of the immediate neighbourhood. Four measures of *proximity* were included in this analysis: urban or rural residency; perception of whether crime in one's area had increased, decreased or stayed the same during the past 5 years; safety walking alone in one's area after dark; and, worry when using public transportation alone after dark. Since the GSS includes no measures identifying the socio-economic characteristics of an area, no such variables were included in the model.

Exposure to crime is understood as one's vulnerability to particularly dangerous places or situations. Three variables relating to exposure to crime that were included in the model are: number of evening activities of the respondent, frequency of walking alone in one's area after dark, and frequency of using public transportation alone after dark.

Fear of crime

[19] *There are a number of fear variables included in the GSS on victimization. For the purpose of this analysis, fear of walking alone after dark was selected as the dependent variable.*

[20] *For more information, see Mihorean, K., Besserer, S., Hendrick, D., Brzozowski, J., Trainor, C., Ogg, S.* A Profile of Criminal Victimization: Results of the 1999 General Social Survey.

Various factors have been identified through research as being associated with a person's fear of crime. The first set of factors is related to measures of *physical or social vulnerability* and includes age, sex, income and education (Sacco 1995; Fattah and Sacco 1989; Skogan and Maxfield 1981). The second set of factors relates to *the threat of crime*, including a person's perception of crime and whether or not they have been the victim of a crime (Skogan and Maxfield 1981).[21] Finally, factors related to an individual's perception about the *performance of the various sectors of the criminal justice system* have been associated with feelings of security (Box, Hale and Andrews 1988; Baker et al 1983; Baumer 1985).

Variables consistent with the various theoretical frameworks set out above were selected from the GSS survey data. Similar to other studies, sex, age, income and education were included as measures of *physical and social vulnerability*. To assess the impact of the relationship between perception of crime or the *threat of crime* and fear, four measures were included: victimization in the past 12 months; urban/rural residency; whether respondents believed that crime in their neighbourhood had increased, decreased or stayed the same; and whether respondents felt that crime in their neighbourhood was higher, lower or about the same as other areas in Canada. Finally, two separate scales were created to determine whether an individual's attitude towards the police and courts was related to their fear of crime.

Methods

Before beginning the fitting of logistic models, several independent variables were collapsed into fewer categories in order to diminish the chances of empty cells in the modelling process. Since this analysis is dealing with small sub-populations in the survey sample, further collapsing was often required because of collinear relationships (see Box 4) between some variables.[22] In addition, a reference category was selected for each independent variable and "don't know / refused" responses were excluded from the models.

Box 4: Multi-collinearity

Multi-collinearity occurs when there is a relationship between the independent variables. When a model is fitted, it is desired that the independent variables be correlated with the dependent variable, but that the independent variables not be correlated to each other. When there is a high correlation between the independent variables, this is known as multi-collinearity. As an example, there may be a large overlap in the information contained in the variable "feelings of safety when walking alone in one's area after dark" and "worry while using public transportation alone in the evening". These variables may be highly correlated, since they might both be an overall measure of the level of fear and apprehensiveness felt by the individual.

The strategy for using logistic modelling to examine the effects of the independent variables on victimization and fear of walking alone in one's area after dark consisted of several steps. First, the odds ratios (see Box 5) of victimization and fear of walking alone were computed individually for each of the independent variables. When odds ratios are computed individually, they are called 'unconditional odds ratios'. The unconditional odds ratios measure the likelihood of either victimization or fear of walking alone after dark, by looking at the effect of each specific variable (with respect to the reference category) separately. This process provides a baseline for comparing the effect of each measure in the more complex models.

Secondly, a model containing only the small population variables (Aboriginal, immigrant and visible minority) was fitted, so that a baseline measure of each of these variables, controlling for

[21] *Generally, independent variables are selected because they are independent of one another. However some independent variables in the model could be a function of the dependent variable. For example, if a person has experienced some personal victimization, he or she may feel unsafe when walking alone after dark and may also feel that the level of crime in their neighbourhood has increased in the last 5 years.*

[22] *The issue of small sub-populations may overlap with the problem of multi-collinearity, however, these are not always the same problem.*

the others, could be established. Furthermore, this baseline measure could be used to determine how the inclusion of additional variables in the model could mediate the effect of these sub-population variables on victimization and fear of walking alone after dark.

The third step was to add, separately, to the victimization model containing the sub-populations, the lifestyle measures, the proximity indicators, and the exposure variables. In the fear of walking alone model containing the three sub-populations, a similar approach was taken by adding first the vulnerability measures, followed by the threat of crime indicators and finally, the perceptions of the justice system items. The reason for this approach was to determine whether, once the sub-populations were controlled for, one or more of the variables in each group had a significant effect on the odds of victimization or fear of walking alone after dark, or whether any variables mediated the effect of any of the three sub-populations.

The fourth step consisted of including, in a single model each for victimization and fear of walking alone after dark, any variables identified in the third step as having a significant impact on the odds of either of the two dependent variables.

Box 5: Odds Ratios

An odds ratio, a statistic generated by a logistic regression, can be used to assess whether, other things being equal, people with specific characteristics are more or less likely to be victimized or be fearful than those in another group, referred to as the reference category.

Using the example of victimization, the odds ratio is interpreted as:

ODDS RATIO	INTERPRETATION
NEAR 1.0	The sub-group's odds of being victimized are *no more or less* than those of the reference category
GREATER THAN 1.0	The sub-group's odds of being victimized are *higher* than those of the reference category
LESS THAN 1.0	The sub-group's odds of being victimized are *lower* than those of the reference category

Findings

Victimization

Unconditional odds ratios

The estimated odds of victimization for different categories of each of the independent or predictor variables are presented in the first column of Table 3.4. Consistent with the bivariate analysis, Aboriginal people had twice the odds of being victims of a personal crime, while immigrants were less likely than non-immigrants to experience these types of crimes. Being a visible minority was not a predictor of personal victimization. For many of the other predictor variables, the unconditional odds ratios had values consistent with theoretical predictions. There were, however, some exceptions with respect to age. While it was expected that the odds ratios would decrease as age increased, results indicate that those aged 45 to 54 were less likely to be victims of a personal crime than those who were 55 years of age and over. Furthermore, the odds of being victimized for those in the 35 to 44 age group were no different than those in the reference group (55 and over).

Main effects model of personal victimization

Model one includes only the odds ratios for the three small groups of Aboriginal people, immigrants and visible minorities. The effect of controlling for two of the variables on the relationship of the third variable with personal victimization shows that, in comparison to the unconditional odds ratios, the odds of victimization for Aboriginal people stayed relatively the same, confirming that the visible minority and immigrant variables had a negligible effect on the Aboriginal variable. However, when the effects of being a visible minority were removed from the immigrant population, their risk of victimization decreased slightly. Meanwhile, when the effects of being an immigrant were removed from the visible minority population, their risk of victimization became significant and their odds of victimization became 54% greater than those of non-visible minorities.

When, in models two, three and four, the lifestyle, proximity and exposure variables were included with the small groups variables, both the immigrant and visible minority variables became insignificant. Aboriginal people, however, had nearly twice the odds of being victimized than non-Aboriginal people. In model two, among the lifestyle variables, gender and income continued to have no effect on the odds of victimization as compared to the unconditional odds ratios, while living in an urban area, being unemployed and being single, divorced or separated increased one's odds of victimization. In addition, all age categories were significant predictors of personal victimization with risk decreasing with age. While working became a significant predictor of victimization, being a student no longer had an effect on the odds of victimization.

When in model three, the proximity indicators were added to the model with the three populations and lifestyle indicators, all variables that were significant in model two remained significant, and gender also became significant. The odds of males being victimized were higher than for females. Furthermore, as was the case with the unconditional odds ratios, each of the proximity variables were significant. The odds of victimization were higher for those who worried while using public transportation at night as compared to those who did not worry, and for those who felt crime in their neighbourhood had increased as compared to those who felt it had decreased in the last 5 years. Not surprisingly, the odds of victimization were lower for those who felt safe walking alone in their area after dark as compared to those who felt unsafe.

In model four, when the exposure indicators were added to the model, gender became insignificant, as it was in models two and in the unconditional odds ratios. The remaining variables that were significant in model three continued to have an effect on victimization, except for working, which became insignificant. Consistent with the unconditional odds ratios, two of the exposure indicators, participating in at least 10 evening activities per month and walking alone in the dark at least once per week, were significant predictors of victimization, however the odds ratio for participating in at least 10 evening activities decreased. Finally, using public transportation alone after dark no longer had an effect on victimization after controlling for the three sub-populations and all other independent variables.

Model five: victimization with interaction

Since it was revealed through the bivariate analysis that there is a strong overlap between immigrants and visible minorities, a two-way interaction between the immigrant and visible minority variables was added to model five. Results revealed that although the visible minority and immigrant variables did not have an effect on their own, there was a significant interaction effect between them. This finding indicates that the odds of victimization on those who are immigrants is different for those who are and those who are not visible minorities. Those who are both an immigrant and a visible minority are less likely to be victims of a personal crime than those who are not an immigrant and a visible minority. Adding the interaction term to this model had a negligible effect on the other variables in the model.

The final model (model 6) consisting of main effects of all variables found significant in model five, are presented in the last column of Table 3.4. Several observations can be made from these results. First, the *lifestyle* variables had a mediating effect on both the immigrant and visible minority variables, rendering them non-significant. Second, given the income categories used in this model, none were significant predictors of personal victimization when other variables were controlled for. Other variables that were found not to be significant were gender, working, being a student, and using public transportation alone after dark. Therefore, each of these measures was excluded from the final model. When all factors were held constant, variables that increased the odds of victimization were being young, being an Aboriginal person, living in an area where it is believed that crime had increased, partaking in more than 10 evening activities per month outside the home, being unemployed, and being single, divorced or separated. Other factors that also increased one's odds of experiencing a personal victimization include worrying while using public transportation alone after dark, living in an urban area, and frequently walking alone after dark. Feeling safe walking alone in one's area after dark and being both an immigrant and a visible minority were found to be related to a decreased risk of personal victimization.

Fear of Crime

Unconditional odds ratios

The estimated relative odds of fear of walking alone after dark for each of the predictor variables are presented in the first column of Table 3.5. The unconditional odds ratios for each of the three small population measures and fear of walking alone after dark were not significant, indicating no relationship. For many of the other predictor variables, the results were in the expected direction as laid out in the theoretical framework.

Main effects model on fear of walking alone after dark

Model 1 in Table 3.5 presents the odds ratios for a model containing only the three small population variables of Aboriginal, immigrant and visible minority. The effect of controlling for two of the variables on the relationship of the third variable with fear of walking alone after dark remained non-significant for each of the three measures.

When in model two, the *vulnerability* indicators were added to the model with the small population variables, the Aboriginal and immigrant variables remained non-significant predictors of fear. Being a visible minority, however, became a significant predictor of fear, with visible minorities being more likely than non-visible minorities to be fearful walking alone after dark. All *vulnerability* factors were also significant predictors of fear after controlling for all other variables.

When the *threat of crime* indicators were added in model three, being a visible minority was no longer a predictor of fear. The significance of the *vulnerability* factors remained fairly consistent with model two, with the exception of the interaction of sex and age, which was no longer significant.

When the *perception of the justice system* indicators were added in model four, the significance of the *vulnerability* and *threat of crime* factors remained consistent with model three, with the exception of personal victimization, which was no longer a significant predictor of fear. Among the *perceptions* indicators, viewing the police and courts as doing a good job decreased the odds of being fearful of walking alone after dark.

The final model consisting of the main effects of any variables found significant in model four are presented in the last column of Table 3.5. The main observation from this model is the fact that when all factors are controlled, being an Aboriginal person, or an immigrant or belonging to a visible minority group was not a significant predictor of one's fear of walking alone after dark. Other observations that can be made from these odds ratios are that being female, living in an area where one worries about using public transportation alone at night, feeling that crime has

increased and that the level of crime in one's neighbourhood compared to others is higher, and living in an urban area, are all predictors of fear of walking alone after dark. In addition, the final model shows that those who were young, had a higher level of education and who viewed the police and courts favourably, were less likely to be fearful walking alone in the area after dark after controlling for all other factors. Finally, it appears that fear increased as income decreased.

Summary

For the first time, the impact of being an Aboriginal person, an immigrant or belonging to a visible minority group could be assessed in theoretical models identifying the significant factors contributing to the risk of personal victimization or fear. Results of the logistic regression analysis for victimization indicate that being an Aboriginal person was a predictor of personal victimization. Further, the strength of this risk factor was not influenced by other risk factors such as age, sex, income, other lifestyle characteristics, proximity and exposure to crime. Results show that Aboriginal people had almost twice the odds of being victimized as compared to non-Aboriginal people.

While it was found that being either an immigrant or a visible minority had no bearing on one's odds of being the victim of a personal crime, there was an interaction effect between being an immigrant and a visible minority. A person who was both an immigrant and a visible minority had lower odds of personal victimization. In other words, a person who was both an immigrant and a visible minority was less likely to be victimized.

With respect to fear of walking alone after dark, despite the increased risk of personal victimization among Aboriginal people, the logistic regression results indicate that being an Aboriginal person had no bearing on whether or not someone was fearful of walking alone in their area after dark. Similarly, despite the decreased odds of victimization among the immigrant and the visible minority populations, when all factors were held constant, there was no relationship between being an immigrant or a visible minority and fear of walking alone after dark.

Despite the methodological considerations and challenges involved in studying small populations through a general population crime survey, the 1999 General Social Survey has produced some important estimates that, for the first time, illustrate how victimization rates, fear of crime and attitudes toward the justice system, differ among various diverse populations. These findings will be useful for policy and program analysts, researchers and academics, not only in their attempts to understand the unique experiences of these populations, but also to assess how they may be affected by proposed government and community initiatives.

Table 3.1

Perceptions of the justice system among the Aboriginal and non-Aboriginal populations aged 15+, 1999

	Total	Good job	Average job	Poor job	Don't know/ Not stated	Total	Good job	Average job	Poor job	Don't know/ Not stated
	% of Aboriginal population aged 15+					*% of non-Aboriginal population aged 15+*				
What kind of job are your local police doing at …										
Being approachable?	100	58	25	8 †	8 †	100	67	17	4	12
Ensuring the safety of citizens?	100	55	31	9 †	4 †	100	63	26	5	6
Enforcing the laws?	100	48	36	13	4 †	100	61	30	5	5
Supplying information on reducing crime?	100	46	31	14	9 †	100	55	26	9	10
Responding promptly to calls?	100	43	26	17	14	100	50	21	7	22
What kind of job are criminal courts doing at …										
Ensuring a fair trial for the accused?	100	37	40	13	10	100	41	35	11	13
Determining the guilt of the accused?	100	21	42	25	12	100	21	43	20	16
Helping the victim?	100	20	34	36	10	100	15	34	35	16
Providing justice quickly?	100	17	32	42	10	100	13	35	41	11
What kind of job is the prison system doing at ...										
Supervising/controlling prisoners?	100	25	30	25	20	100	27	32	20	20
Helping prisoners become law-abiding?	100	14	32	32	22	100	14	33	28	25
What kind of job is the parole system doing at …										
Releasing offenders who are not likely to re-offend?	100	16	34	34	16	100	16	34	33	18
Supervising offenders on parole?	100	13	30	36	21	100	13	31	33	23

Figures may not add to total due to rounding.

† Coefficient of variation between 16.6% and 33.3%.

Source: *Statistics Canada, General Social Survey, 1999.*

Table 3.2

Perceptions of the justice system among the visible minority and non visible minority populations aged 15+, 1999

	Total	Good job	Average job	Poor job	Don't know/ Not stated	Total	Good job	Average job	Poor job	Don't know/ Not stated
	% of visible minority population aged 15+					*% of non-visible minority population aged 15+*				
What kind of job are your local police doing at …										
Being approachable?	100	54	21	6	19	100	68	17	4	11
Ensuring the safety of citizens?	100	53	30	6	11	100	64	26	5	5
Enforcing the laws?	100	54	30	6	10	100	62	30	5	4
Supplying information on reducing crime?	100	42	30	12	16	100	56	25	9	9
Responding promptly to calls?	100	41	21	7	31	100	50	21	8	21
What kind of job are criminal courts doing at …										
Ensuring a fair trial for the accused?	100	34	32	9	26	100	42	36	11	11
Determining the guilt of the accused?	100	22	34	16	28	100	21	44	20	14
Helping the victim?	100	22	30	22	26	100	15	34	37	14
Providing justice quickly?	100	21	32	25	22	100	12	36	43	9
What kind of job is the prison system doing at ...										
Supervising/controlling prisoners?	100	23	25	18	35	100	27	33	21	19
Helping prisoners become law-abiding?	100	18	25	19	38	100	14	34	29	23
What kind of job is the parole system doing at …										
Releasing offenders who are not likely to re-offend?	100	14	28	28	31	100	16	35	33	16
Supervising offenders on parole?	100	15	24	24	37	100	13	31	34	21

Figures may not add to total due to rounding.

Source: *Statistics Canada, General Social Survey, 1999.*

Table 3.3

Perceptions of the justice system among the immigrant and non immigrant populations aged 15+, 1999

	Total	Good job	Average job	Poor job	Don't know/ Not stated	Total	Good job	Average job	Poor job	Don't know/ Not stated
	% of immigrant population aged 15+					*% of non-immigrant population aged 15+*				
What kind of job are your local police doing at …										
Being approachable?	100	61	16	4	18	100	68	18	4	10
Ensuring the safety of citizens?	100	57	26	5	11	100	64	27	5	4
Enforcing the laws?	100	59	26	6	9	100	61	31	5	3
Supplying information on reducing crime?	100	47	26	10	17	100	57	26	9	8
Responding promptly to calls?	100	45	17	7	30	100	50	22	8	20
What kind of job are criminal courts doing at …										
Ensuring a fair trial for the accused?	100	37	28	10	24	100	42	37	11	10
Determining the guilt of the accused?	100	19	34	19	28	100	22	46	20	13
Helping the victim?	100	16	27	32	26	100	15	36	36	13
Providing justice quickly?	100	15	28	36	21	100	12	37	43	8
What kind of job is the prison system doing at ...										
Supervising/controlling prisoners?	100	20	26	20	34	100	29	34	21	17
Helping prisoners become law-abiding?	100	14	25	23	38	100	15	35	30	21
What kind of job is the parole system doing at …										
Releasing offenders who are not likely to re-offend?	100	12	26	32	30	100	16	36	33	14
Supervising offenders on parole?	100	11	22	31	37	100	14	33	34	19

Figures may not add to total due to rounding.

Source: *Statistics Canada, General Social Survey, 1999.*

Table 3.4

Factors related to the risk of personal victimization, multivariate analysis, 1999[1]

Variable	Unconditional odds ratios (Each factor added separately to the model)	Odds Ratios[2] Model 1 Three populations	Model 2 Three populations + lifestyle indicators	Model 3 Three populations + lifestyle + proximity indicators	Model 4 Three populations + lifestyle + proximity + exposure indicators	Model 5 Three populations + lifestyle + proximity + exposure indicators + interaction terms	Model 6[3] Final model - All significant variables
Small populations							
Aboriginal	2.12 ***	2.06 ***	1.93 ***	1.93 ***	1.87 ***	1.87 ***	1.85 ***
Non-Aboriginal **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Immigrant	0.77 ***	0.65 ***	0.91	0.90	0.90	0.98	
Non-Immigrant **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	
Visible minority	1.11	1.54 ***	0.86	0.82	0.84	1.13	
Non-visible minority **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	
Immigrant * Visible minority (interaction)						0.62 *	0.72 ***
Lifestyle indicators							
Sex							
Male	0.97		0.92	1.12 *	1.06	1.06	
Female **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	
Age							
15-24	3.15 ***		5.30 ***	5.34 ***	4.64 ***	4.66 ***	5.02 ***
25-34	1.74 ***		3.99 ***	4.09 ***	3.67 ***	3.71 ***	3.94 ***
35-44	0.93		2.62 ***	2.65 ***	2.43 ***	2.46 ***	2.62 ***
45-54	0.61 ***		1.87 ***	1.87 ***	1.72 ***	1.74 ***	1.85 ***
55+ **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Marital Status							
Common law / married / widowed **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Single / divorced / separated	2.58 ***		1.53 ***	1.50 ***	1.46 ***	1.45 ***	1.49 ***
Household Income							
0 - 14,999	1.13		1.08	1.01	1.04	1.05	
15,000 - 29,999	0.92		1.04	1.00	1.01	1.02	
30,000 - 59,999	0.94		0.94	0.92	0.93	0.93	
60,000 + **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	
Main Activity							
Working	1.10		1.25 **	1.26 **	1.16	1.17	
Unemployed	1.87 ***		1.80 ***	1.74 **	1.64 **	1.65 **	1.50 **
Student	2.78 ***		1.25	1.24	1.13	1.13	
Other **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	
Residency							
Urban	1.70 ***		1.54 ***	1.36 ***	1.34 ***	1.34 ***	1.36 ***
Rural **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**	**1.00**
Proximity to crime							
Feelings of safety when walking alone in area after dark							
Safe	0.65 ***			0.69 ***	0.64 ***	0.64 ***	0.65 ***
Unsafe **(R)**	**1.00**			**1.00**	**1.00**	**1.00**	**1.00**
Worry while using public transportation alone in the evening							
Worried	2.01 ***			1.48 ***	1.46 ***	1.45 ***	1.45 ***
Not worried **(R)**	**1.00**			**1.00**	**1.00**	**1.00**	**1.00**
Perception of change in neighbourhood crime level in last 5 years							
Increased	1.67 ***			1.56 ***	1.56 ***	1.55 ***	1.55 ***
Decreased/Same **(R)**	**1.00**			**1.00**	**1.00**	**1.00**	**1.00**
Exposure to crime							
Number of evening activities per month							
10 or more	2.65 ***				1.47 ***	1.47 ***	1.50 ***
Less than 10 **(R)**	**1.00**				**1.00**	**1.00**	**1.00**
Frequency of walking alone in area after dark							
At least once per week	1.47 ***				1.23 ***	1.23 ***	1.28 ***
Less than once per week **(R)**	**1.00**				**1.00**	**1.00**	**1.00**
Frequency of waiting for/using public transportation alone at night							
At least once per week	2.10 ***				1.11	1.11	
Less than once per week **(R)**	**1.00**				**1.00**	**1.00**	

p is the significance level. For example, a significance level of .05 indicates that there is a 5% probability that the survey (sample) data will suggest that there is
** .01<p<=.05 ** .001<p<=.01 *** p<=.001*
(R) *indicates the reference category (unless otherwise noted)*

[1]*Using the technique of logistic regression, the relationship of each factor to the risk of victimization is examined, while controlling for possible effects of other risk factors in the model.*

[2]*Indicates the odds of being victimized in comparison to that for the reference category, when all other factors in the model are held constant.*
[3]*In this model, due to the removal of non-significant categories, the reference category for main activity has been collapsed to include all activities excluding unemployed.*
Source: *Statistics Canada, General Social Survey, 1999.*

Table 3.5

Factors related to fear of walking alone in one's area after dark, multivariate analysis, 1999[1]

Variable	Unconditional odds ratios (Each factor added separately to the model)	Odds Ratios[2] Model 1 Three populations	Model 2 Three populations + vulnerability indicators	Model 3 Three populations + vulnerability + threat of crime indicators	Model 4 Three populations + vulnerability + threat of crime + perceptions indicators	Model 5[3] Final model - All significant variables
Small populations						
Aboriginal	1.09	1.10	0.94	0.91	0.84	
Non-Aboriginal **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	
Immigrant	1.10	1.05	1.09	0.99	0.99	
Non-Immigrant **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	
Visible minority	1.18	1.14	1.44 **	1.25	1.22	
Non-visible minority **(R)**	**1.00**	**1.00**	**1.00**	**1.00**	**1.00**	
Vulnerability						
Sex						
Male	0.18 ***		0.11 ***	0.14 ***	0.14 ***	0.18 ***
Female **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**
Age						
15-24	0.86 *		0.23 ***	0.24 ***	0.25 ***	0.46 ***
25-34	0.95		0.33 ***	0.37 ***	0.36 ***	0.57 ***
35-44	0.83 **		0.40 ***	0.41 ***	0.40 ***	0.54 ***
45-54	0.94		0.57 ***	0.55 ***	0.54 ***	0.63 ***
55+ **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**
Sex * Age (interaction)	1.24 ***		0.87 **	0.91	0.92	
Household Income						
0 - 14,999	1.92 ***		1.63 ***	1.41 **	1.42 **	1.43 **
15,000 - 29,999	1.48 ***		1.39 **	1.33 **	1.31 **	1.31 **
30,000 - 59,999	1.04		1.25 ***	1.23 **	1.23 **	1.23 **
60,000 + **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	**1.00**
Education						
Secondary/ elementary / no schooling	1.26 ***		1.17 *	1.29 ***	1.31 ***	1.29 ***
Some university / community college	0.95		1.07	1.04	1.03	
Post secondary diploma or degree **(R)**	**1.00**		**1.00**	**1.00**	**1.00**	
Threat of Crime						
Residency						
Urban	1.74 ***			1.37 ***	1.38 ***	1.41 ***
Rural **(R)**	**1.00**			**1.00**	**1.00**	**1.00**
Personal victimization						
Victimized	1.43 ***			1.23 *	1.15	
Not victimized **(R)**	**1.00**			**1.00**	**1.00**	
Level of crime in neighbourhood compared to other areas in Canada						
Higher	3.38 ***			2.72 ***	2.52 ***	2.52 ***
Same/lower **(R)**	**1.00**			**1.00**	**1.00**	**1.00**
Perception of change in neighbourhood crime level in last 5 years						
Increased	2.53 ***			2.04 ***	1.90 ***	1.90 ***
Decreased/same **(R)**	**1.00**			**1.00**	**1.00**	**1.00**
Worry while using public transportation alone in the evening						
Worried	4.00 ***			2.87 ***	2.86 ***	2.93 ***
Not worried **(R)**	**1.00**			**1.00**	**1.00**	**1.00**
Attitudes Toward the Justice System						
Perceptions of police performance (good)	0.92 ***				0.93 ***	0.92 ***
Perceptions of performance of courts (good)	0.90 ***				0.96 *	0.96 *

p is the significance level. For example, a significance level of .05 indicates that there is a 5% probability that the survey (sample) data will suggest that there is a relationship between the variables, when no relationship actually exists in the population.
** .01<p<=.05 '** .001<p<=.01 '*** p<=.001*

(R) *indicates the reference category (unless otherwise noted)*

[1]Using the technique of logistic regression, the relationship of each factor to one's fear of walking alone after dark is examined, while controlling for possible effects of other risk factors in the model.

[2]Indicates the odds of being fearful of walking alone in one's area after dark in comparison to that for the 1.00 category, when all other factors in the model are held constant.

[3]In this model, due to the removal of non-significant categories, the reference categories for education have been collapsed. The reference category for education is: some university/some college/post-secondary diploma

Source: *Statistics Canada, General Social Survey, 1999.*

REFERENCES

Baker, M, Barbara Nienstedt, Ronald Everett and Richard McCleary. 1983. “The impact of a crime wave: Perceptions, fear, and confidence in the police” *Law and Society Review.* 17: 319-335.

Baumer, T. 1985. “Testing a general model of fear of crime: Data from a national sample” *Journal of Research in Crime and Delinquency*. 22: 239-255.

Box, S., Chris Hale and Glen Andrews. 1988. “Explaining fear of crime” *The British Journal of Criminology.* 28: 340-356.

Canadian Centre for Justice Statistics. “Aboriginal Peoples in Canada,” *Canadian Centre for Justice Statistics Profile Series,* Catalogue no. 85F0033MIE, Ottawa, Statistics Canada, June 2001.

Canadian Centre for Justice Statistics.“Immigrants in Canada,” *Canadian Centre for Justice Statistics Profile Series,* Catalogue no. 85F0033MIE, Ottawa, Statistics Canada, June 2001.

Canadian Centre for Justice Statistics.“Visible Minorities in Canada,” *Canadian Centre for Justice Statistics Profile Series,* Catalogue no. 85F0033MIE, Ottawa, Statistics Canada, June 2001.

Cohen, Lawrence and Marcus Felson. 1979. “Social change and crime rate trends: A routine activity approach.” *American Sociological Review*. 44 (August): 588-608.

Fattah, E.A. and V. F. Sacco. 1989. *Crime and Victimization of the Elderly*. New York: Springer-Verlag.

Miethe, Terance and Robert Meier. 1990. “Opportunity, choice and criminal victimization: A test of a theoretical model.” *Journal of Research in Crime and Delinquency*. 27 (3): 243-266.

Mihorean, K., Besserer, S., Hendrick, D., Brzozowski, J., Trainor, C., Ogg, S. *A Profile of Criminal Victimization: Results of the 1999 General Social Survey,* Catalogue no. 85-553-XIE, Ottawa, Canadian Centre for Justice Statistics, Statistics Canada, August, 2001.

Sacco, V.F. 1995. “Fear and Personal Safety” *Juristat*. (Statistics Canada Catalogue no. 85-002) Ottawa: Minister responsible for Statistics Canada, Vol.15 no.9.

Skogan, W. and M. Maxfield. 1981. *Coping with Crime*. London: SAGE publications.

Trainor, C. and Mihorean, K. (eds.) *Family Violence in Canada: A Statistical Profile 2001*, Catalogue no. 85-224-XIE, Ottawa, Canadian Centre for Justice Statistics, Statistics Canada, June, 2001.

Tufts, Jennifer. 2000. “Public Attitudes toward the Criminal Justice System” *Juristat*. (Statistics Canada Catalogue no. 85-002-XPE) Ottawa: Minister responsible for Statistics Canada, Vol.20 no.12.