Public perception of neighbourhood crime in New South Wales

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INTRODUCTION

The Australian Bureau of Statistics (ABS) conducts an annual survey of the victims of crime in New South Wales (NSW) on behalf of the NSW Bureau of Crime Statistics and Research, and the NSW Police Service. This survey, known as the Crime and Safety Survey, is conducted as a supplement to the ABS Monthly Population Survey. Information is collected from both individuals and households about their experiences of selected crimes and crime reporting behaviour, and from individuals about their perceptions of crime problems in their neighbourhood. [1]

The Crime and Safety Survey has been conducted annually in NSW since 1990. Since the survey commenced, however, there has been no comprehensive analysis of the issue of neighbourhood crime perception. The purpose of this bulletin is to provide information about the perception of neighbourhood crime in NSW based on the full set of individual responses to the 1995 and 1996 surveys.[2]

In order to provide an understanding of neighbourhood crime perception, this bulletin will (1) examine the regional variation in the public perception of the existence of a neighbourhood crime or public nuisance problem, and in the main problem perceived, and (2) identify the variables which influence the public perception of the existence of a neighbourhood crime or public nuisance problem, and the nature of the main problem perceived.

REGIONAL VARIATION

Table 1 shows the estimated percentages of NSW persons, by region, who perceived a crime or public nuisance problem in their neighbourhood, averaged over 1995 and 1996. Table 2 details, for those respondents to the survey who perceived a problem, the main problem specified.[3] The regions used throughout this bulletin are at the level of NSW Statistical Division (SD), and Statistical Subdivision (SSD) within the Sydney SD, as listed in Tables 1 and 2.

Table 1 shows that in NSW, on average, 53.4 per cent of persons perceived a neighbourhood crime or public nuisance problem in 1995 and 1996. This percentage varied across regions, with a significantly lower proportion of persons in most country regions of NSW likely to perceive a neighbourhood problem than in the Sydney area. For example, in the Sydney SD, an estimated 57.3 per cent of residents perceived a problem, compared with 30.6 per cent in the South Eastern SD, and 34.4 per cent in the Northern SD of NSW.

Table 1 also shows that there was significant variation in the level of neighbourhood crime perception among residents of the Subdivisions of Sydney. The estimated proportion of persons who perceived a neighbourhood problem in 1995 and 1996 varied from less than half of the residents of the Northern Beaches SSD (46.0%), to about two-thirds of Inner Sydney residents (67.0%).

The general pattern of the level of neighbourhood crime perception across

Table 1: Estimated percentage of residents who perceived a neighbourhood crime problem, 1995 and 1996

	Percentage who perceived a problem
NSW Statistical Divisions	
Sydney	57.3
Hunter	54.9
Illawarra	58.0
Richmond – Tweed	47.3
Mid-North Coast	40.2
Northern	34.4
North Western	49.9
Central West	44.0
South Eastern	30.6
Murrumbidgee	36.6
Murray	40.1
Far West	56.9
Sydney Statistical Subdivisions	
Inner Sydney	67.0
Eastern Suburbs	55.8
St George – Sutherland	55.0
Canterbury – Bankstown	58.6
Fairfield – Liverpool	59.0
Outer South Western Sydney	63.5
Inner Western Sydney	59.1
Central Western Sydney	61.7
Outer Western Sydney	60.5
Blacktown – Baulkham Hills	61.1
Lower Northern Sydney	51.1
Hornsby – Ku-ring-gai	47.9
Northern Beaches	46.0
Gosford – Wyong	56.8
New South Wales	**53.4**

Table 2: Residents who perceived the specified problem as their main problem, as a percentage of all residents who perceived a neighbourhood crime problem, 1995 and 1996

	Housebreaking[a]	Car theft	Other theft	Louts/youth gangs	Prowlers/loiterers	Vandalism/graffiti	Dangerous/noisy driving	Illegal drugs	Sexual assault	Other assault	Neighbour/domestic problems	Other
NSW Statistical Divisions												
Sydney	37.0	5.6	1.7	13.6	1.5	7.8	19.8	6.1	0.6	1.1	3.1	2.0
Hunter	35.6	4.0	2.5	10.2	1.0	11.3	17.4	8.7	0.2	0.7	4.7	3.6
Illawarra	37.0	4.2	1.9	13.6	1.0	6.2	20.1	10.4	0.5	0.5	2.9	1.9
Richmond – Tweed	40.6	2.1	3.5	11.4	3.2	4.5	18.3	8.7	0.0	0.7	4.6	2.3
Mid-North Coast	31.3	3.5	1.6	12.8	4.0	3.8	12.6	16.6	0.5	0.6	7.5	5.2
Northern	40.7	0.5	5.2	9.4	1.9	7.1	16.4	8.9	0.6	0.9	6.1	2.3
North Western	40.3	1.0	3.8	16.0	1.6	5.6	10.4	11.5	2.7	1.3	4.0	1.9
Central West	27.7	7.3	4.6	9.2	4.0	4.7	15.8	17.0	0.5	1.6	5.1	2.6
South Eastern	27.1	2.9	5.5	8.0	1.8	11.6	21.7	13.3	0.5	0.5	1.8	5.3
Murrumbidgee	27.1	3.8	2.8	8.8	1.6	9.0	21.4	13.2	1.6	0.0	6.4	4.3
Murray	26.9	1.5	4.8	12.5	3.9	10.0	20.1	10.7	0.0	1.8	2.6	5.4
Far West	45.8	3.3	7.5	3.3	7.5	5.0	20.0	7.5	0.0	0.0	0.0	0.0
Sydney Statistical Subdivisions												
Inner Sydney	34.6	8.9	2.2	10.8	2.0	8.8	13.7	7.4	1.4	3.0	3.5	3.6
Eastern Suburbs	39.0	9.8	1.3	10.2	3.0	12.6	13.6	4.2	0.3	1.1	2.1	2.9
St George – Sutherland	30.5	4.6	1.2	17.5	0.6	8.9	24.7	6.2	0.9	0.9	2.7	1.4
Canterbury – Bankstown	38.1	7.4	2.2	14.9	1.7	3.0	23.0	4.3	1.1	0.5	2.4	1.3
Fairfield – Liverpool	30.5	6.0	1.7	10.8	0.4	3.5	24.7	17.8	0.0	0.9	3.0	0.7
Outer South Western Sydney	33.9	3.7	1.0	18.5	1.1	7.5	22.5	4.2	0.8	0.8	5.0	1.0
Inner Western Sydney	52.4	6.1	0.8	10.2	1.6	6.7	14.3	2.2	0.4	0.4	2.2	2.8
Central Western Sydney	37.0	4.7	2.2	14.2	2.4	5.5	17.1	8.0	0.4	2.5	5.2	0.8
Outer Western Sydney	35.8	3.8	2.0	15.9	1.2	11.4	20.7	4.5	0.8	0.5	2.0	1.3
Blacktown – Baulkham Hills	40.1	4.8	1.5	14.3	0.6	8.4	20.2	4.6	0.3	0.9	2.5	1.9
Lower Northern Sydney	50.6	7.6	1.6	7.6	1.3	7.2	14.3	2.3	0.7	0.6	4.1	2.0
Hornsby – Ku-ring-gai	50.7	3.2	1.0	7.6	1.7	7.7	18.8	2.6	0.6	0.5	2.6	3.0
Northern Beaches	26.9	3.9	2.8	19.5	2.4	9.8	17.7	6.4	0.6	2.8	2.4	4.5
Gosford – Wyong	27.3	3.6	1.8	15.2	3.1	8.4	24.1	9.1	0.0	0.4	4.4	2.7
New South Wales	**36.3**	**4.9**	**2.1**	**12.8**	**1.7**	**7.8**	**19.1**	**7.7**	**0.6**	**1.0**	**3.6**	**2.4**

[a] Housebreaking includes burglaries and theft from homes.

regions, not surprisingly, broadly reflects the level of recorded crime in the community. A useful indicator of neighbourhood crime, which is readily available from official regional crime statistics, is the recorded rate of break and enter – dwelling offences. This is the only recorded crime category for which the victim's residence coincides with the location of the crime. Table 3 details 1996 recorded crime rates in NSW for this offence and for a selection of other offence categories.[4]

The areas of NSW which recorded the highest rates of break and enter – dwelling in 1996 were, respectively, the Sydney, Illawarra, North Western, Far West and Hunter SDs. The top five SDs in NSW with respect to *perceived* neighbourhood crime in 1995 and 1996 were these same five SDs, although in different ranking order. The ranking by SD on perceived crime was, from highest to lowest, the Illawarra, Sydney, Far West, Hunter and North Western SDs.

Within the Sydney region, the association between perceived and actual neighbourhood crime is less marked, although still evident. The highest ranked SSD for both perceived and recorded neighbourhood crime, as measured by the break and enter rate, is the Inner Sydney SSD, while the two areas ranked lowest on each of these measures are the Hornsby – Ku-ring-gai and the Northern Beaches SSDs.

As well as differing in the level of perception of the *existence* of a

Table 3: Recorded criminal incidents, rate per 100,000 resident population for selected offences, 1996

	Break and enter – dwelling	Motor vehicle theft	Offensive conduct	Offensive language	Possession and/or use of cannabis	Cultivating cannabis	Possession and/or use of narcotics	Dealing/trafficking in narcotics
NSW Statistical Divisions								
Sydney	1403.7	1062.7	29.3	42.9	92.7	22.9	30.8	12.9
Hunter	859.3	427.8	52.2	72.8	187.7	54.6	12.7	5.2
Illawarra	1357.1	665.4	39.0	72.9	131.1	47.9	26.0	8.7
Richmond – Tweed	826.6	330.3	66.5	109.9	418.8	180.4	23.5	19.5
Mid-North Coast	787.5	291.9	78.0	173.9	361.9	140.2	9.9	2.7
Northern	839.6	206.3	91.7	155.1	192.4	72.0	10.1	1.6
North Western	1281.4	367.7	163.3	428.8	246.2	76.2	2.5	2.5
Central West	734.4	343.5	68.1	127.1	226.7	60.1	5.2	0.6
South Eastern	624.0	233.7	128.5	176.1	331.1	95.2	11.6	3.3
Murrumbidgee	721.7	258.4	87.2	114.3	245.9	63.5	4.6	1.3
Murray	639.4	284.7	93.4	143.7	256.0	63.8	0.9	1.8
Far West	1181.8	330.9	127.3	240.0	243.6	69.1	3.6	0.0
Sydney Statistical Subdivisions								
Inner Sydney	2335.8	2640.0	98.7	122.7	226.3	28.4	89.9	29.2
Eastern Suburbs	1355.4	998.3	24.9	27.6	92.3	12.7	7.9	2.6
St George – Sutherland	1024.5	752.7	19.0	24.7	59.2	15.3	6.4	2.0
Canterbury – Bankstown	1631.0	1311.6	18.1	31.2	59.4	16.4	12.7	5.4
Fairfield – Liverpool	1539.1	1493.9	21.2	43.1	78.8	20.5	227.3	119.5
Outer South Western Sydney	1645.2	1067.6	33.5	62.7	92.3	43.3	7.5	1.9
Inner Western Sydney	1833.0	1255.8	18.4	16.4	53.9	2.0	11.2	1.3
Central Western Sydney	2111.0	1531.2	17.8	25.5	66.2	17.8	15.2	1.9
Outer Western Sydney	1147.7	1078.9	23.8	38.3	114.4	37.2	9.7	2.7
Blacktown – Baulkham Hills	1302.5	1056.2	19.4	21.6	87.9	31.9	6.1	0.3
Lower Northern Sydney	1334.2	638.2	18.0	19.9	85.0	8.1	2.6	0.4
Hornsby – Ku-ring-gai	804.2	237.6	15.3	27.0	58.1	10.5	2.4	0.0
Northern Beaches	809.6	310.6	32.6	40.4	98.3	21.1	6.9	0.5
Gosford – Wyong	1121.5	560.4	60.8	114.4	138.8	49.0	10.3	2.7
New South Wales	**1212.3**	**801.6**	**46.9**	**77.1**	**156.7**	**45.2**	**24.8**	**10.1**

neighbourhood problem, the regions of NSW exhibit some differences in the type of main problem perceived. Overall, the main problem selected by the highest proportion of respondents in each region of NSW and Sydney was housebreaking/burglaries/theft from homes (burglary). On average, 36.3 per cent of NSW residents who perceived a problem in 1995 and 1996 nominated this as their main concern. However, the actual proportion of respondents who nominated it as the main problem varied across regions.

It can be seen from Table 2 that the proportion of residents perceiving a neighbourhood problem in SDs across NSW who nominated burglary as the main neighbourhood problem varied from 26.9 per cent in the Murray SD, an area with a relatively low recorded rate of break and enter in 1996, up to 45.8 per cent in the Far West SD.

Table 2 shows even more variation within the Sydney region, with 26.9 per cent of Northern Beaches respondents who had perceived a problem nominating burglary as the main problem, up to 52.4 per cent of Inner Western Sydney residents. The

Northern Beaches has a relatively low recorded rate of break and enter – dwelling, as shown in Table 3, while the Inner Western Sydney SSD recorded a relatively high rate in 1996 – more than one and a half times the average NSW rate.

The second most frequently selected main problem was dangerous/noisy driving, with 19.1 per cent of NSW residents who perceived a problem nominating this as their main concern. In NSW, the only SDs for which dangerous/noisy driving did not rank second were the Mid-North Coast and

Central West SDs (where illegal drugs ranked second), and the North Western SD (where the louts/youth gangs problem ranked second).

This pattern again partially reflects the pattern of recorded crime rates in NSW during the survey period. The Mid-North Coast SD recorded a higher than average rate of recorded cannabis offences, as shown in Table 3 – more than double the average NSW rate for possession and/or use of cannabis, and more than three times the average rate for cultivating cannabis. The North Western SD, on the other hand, recorded the highest rates of offensive conduct and offensive language in NSW in 1996 – about three and a half times the average NSW rate for offensive conduct, and more than five and a half times the average rate of offensive language. Note that in this region the proportion of persons choosing louts/youth gangs as the main neighbourhood problem was higher than in any other SD of NSW (16.0% compared with 12.8% in NSW, overall).

Within Sydney, only the residents of the Northern Beaches failed to identify dangerous/noisy driving as the main problem in sufficient numbers for this concern to rank second. Instead, the second most important neighbourhood problem for the Northern Beaches was louts/youth gangs. Table 3 shows that the Northern Beaches recorded a relatively high rate of offensive conduct incidents in 1996, compared with other areas of Sydney.

The neighbourhood problem ranked third highest in the level of concern in NSW, overall, was louts/youth gangs, with 12.8 per cent of persons who perceived a crime problem in 1995 and 1996 nominating this category. As was noted above, a particularly high proportion of residents in the North Western SD of NSW chose this as the main problem.

Similarly, some areas of Sydney showed comparatively high proportions of persons concerned about louts/youth gangs, as detailed in Table 2. As was noted above, a large percentage of residents on the Northern Beaches chose this as their main neighbourhood problem (19.5% compared with 13.6% of Sydney residents, overall), as did 18.5 per cent of Outer South Western Sydney residents

and 17.5 per cent in the St. George – Sutherland area.

The next most frequently nominated categories of concern in NSW were vandalism/graffiti (7.8%), illegal drugs (7.7%) and car theft (4.9%).

Vandalism/graffiti was chosen by 7.8 per cent of NSW residents as the main neighbourhood crime or public nuisance problem, the fourth highest ranking concern in the State. The highest proportions of respondents concerned about this problem resided in the South Eastern and Hunter SDs of NSW (percentage responses of 11.6% and 11.3%, respectively) and in the Sydney SSDs of the Eastern Suburbs and Outer Western Sydney (12.6% and 11.4%, respectively, compared with 7.8% in the Sydney SD).

The choice of illegal drugs as the main neighbourhood problem also varied across the State. The largest proportions of persons choosing this as their main problem were residents of the Central West and the Mid-North Coast SDs of NSW (17.0% and 16.6%, respectively, compared with 7.7% overall in NSW). In Sydney, the problem of illegal drugs was a particular concern for residents in the Fairfield – Liverpool SSD (17.8% of respondents in this area chose illegal drugs as the main problem, compared with 6.1% in Sydney overall), but was of comparatively minor concern to residents of the Inner Western Sydney, Lower Northern Sydney and Hornsby – Ku-ring-gai SSDs (with 2.2%, 2.3% and 2.6%, respectively, choosing this as their main concern).

Table 3 shows that the Fairfield – Liverpool SSD had a particular problem with narcotic drugs in 1996, with recorded rates of possession and/or use, and dealing/trafficking in narcotics far higher in this region than in any other region of NSW. The recorded rate of narcotics possession charges in this region was more than nine times the State rate, and dealing/trafficking charges more than eleven times the NSW rate in 1996.

The final area of neighbourhood crime concern which will be considered in detail in this section is car theft. On average, 4.9 per cent of NSW residents nominated this as the main problem in their neighbourhood. A particularly high proportion of persons within the Eastern

Suburbs and Inner Sydney SSDs (9.8% and 8.9%, respectively) nominated this as the main problem in their neighbourhood. Both of these regions recorded a rate of motor vehicle theft higher than the State rate in 1996. On the other hand, a particularly low proportion of respondents in the Northern and North Western regions of NSW (0.5% and 1.0%, respectively) nominated this as their main concern. Table 3 shows that the Northern SD recorded the lowest rate of motor vehicle theft in NSW in 1996 (206.3 incidents per 100,000 population, compared with a State rate of 801.6 per 100,000).

The second aim of this bulletin is to identify the variables which influence the public perception of the existence of a neighbourhood crime or public nuisance problem, and the nature of the main problem perceived.

The sections of this bulletin which follow will use a multivariate approach to identify (1) the variables which influence the public perception of the existence of a neighbourhood crime or public nuisance problem, and (2) the variables which influence the public perception of a specific type of problem.

ANALYSIS 1: FACTORS WHICH AFFECT THE PERCEPTION OF A PROBLEM

Firstly, the variables which significantly influence the public perception of the existence of a neighbourhood problem will be determined using a multivariate logistic regression approach. The categorical response variable used in the regression is whether the respondent perceives a neighbourhood crime or public nuisance problem or not (coded 1 and 0 respectively). The categorical explanatory variables are as follows:

1. *household victim* – whether the respondent's household was a 'victim' of a break, enter and steal offence, or a motor vehicle theft during the previous 12 months,

2. *personal victim* – whether the respondent was a victim of a robbery, assault or sexual assault (i.e. a crime 'against the person') during the previous 12 months,[5]

3. *recent migrant of non-English speaking background* (*NESB*) – a respondent was classified as belonging to this category if he or she had arrived in Australia from a non-English speaking country within two years of the survey,[6]

4. *gender*,

5. *age group* – respondents are grouped into the age categories under 25 years, 25 to 44 years, 45 to 64 years, 65 years and over,

6. *region* – the respondent's place of residence, using SSD within Sydney and SD elsewhere in NSW, was classified as either a high, medium or low crime area,[7] and

7. *household type* – households with dependent children are compared with those without children.[8]

The above seven variables were included simultaneously in the fully specified model and excluded by a process of backward elimination (using a decision level of $\alpha = 0.05$). The computer software package PC CARP was used to perform the analysis in order to take account of the clustering and stratification effects corresponding to the survey design.[9]

A summary of the results of the logistic regression procedure which modelled the perception of a neighbourhood problem

for the above explanatory variables is shown in Table 4, below. For each variable found to be significant in the final model, the *p*-value, odds ratio and 95 per cent confidence interval for the odds ratio are shown.

The odds ratio, which can take any positive value, compares two categories of a response variable on the odds of having the response attribute (or outcome category) coded '1'. An odds ratio which is not statistically different from one (i.e. the confidence interval includes one) indicates that there is no difference in the odds of response between the two categories being compared (say, A and B). If the odds ratio for category A compared with category B is significantly *greater* than one, then the odds of the response occurring is significantly higher for persons in category A than for those in category B. If the odds ratio for category A compared with category B is significantly *less* than one, then the odds of the response occurring is significantly lower for persons in category A than for those in category B. Note that the reciprocal of this odds ratio represents the odds of the response occurring for persons in category B compared with those in category A.

The results in Table 4 show that all variables tested, other than household type, were found to be significant and

were retained in the final model. Note that the multivariate nature of the analysis ensures that each explanatory variable in the final model significantly affects the outcome variable in the presence of each of the other explanatory variables.

Respondents who lived in a household that had experienced a household crime over the preceding 12 months ('household victim') were the group most likely to perceive a neighbourhood problem in the survey. The odds of such householders perceiving a problem were 4.3 times the odds of respondents from non-victim households perceiving a problem, controlling for all other variables included in the model.

Victims of a personal crime were also more likely than non-victims to perceive a problem, with an odds ratio of 2.9. That is, for recent victims of a crime against the person, the odds of perceiving a neighbourhood problem are almost three times the odds of non-victims perceiving a problem.

Other groups of respondents who were more likely to perceive a neighbourhood problem are females (for whom the odds of perceiving a problem are just 5% higher than for males), persons aged 25 to 44 years and those aged 45 to 64 years (odds ratios of 1.2 and 1.1, respectively) compared with persons aged under 25 years, and respondents residing in medium or high crime areas (odds ratios

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Table 4:   Multivariate logistic regression results for the perception of a neighbourhood crime or public nuisance problem[a]

Explanatory variable	*Significance (p-value)*	*Odds ratio*	*95% Confidence interval*
Household victim vs. non-victim	< 0.0001	4.3	3.6 - 5.0
Personal victim vs. non-victim	< 0.0001	2.9	2.4 - 3.5
Recent NESB migrant vs. non-migrant	< 0.0001	0.3	0.2 - 0.4
Female vs. male	0.0324	1.0 [b]	1.0 - 1.1
Age group: Aged 65 years or over vs. aged 15-24 years	< 0.0001	0.8	0.7 - 0.9
Aged 45-64 years vs. aged 15-24 years	0.0034	1.1	1.0 - 1.3
Aged 25-44 years vs. aged 15-24 years	< 0.0001	1.2	1.1 - 1.4
Region: High crime region vs. low crime region	< 0.0001	1.8	1.6 - 2.0
Medium crime region vs. low crime region	< 0.0001	1.5	1.4 - 1.7

[a] The variable for household type was not significant in the regression.

[b] This result is statistically significant. The value of the odds ratio is 1.049 and is significantly greater than one.

Table 5: Probability of perceiving a neighbourhood crime or public nuisance problem (for males aged 25-44 years): Effect of victimisation experience and recorded crime rate in area of residence

Recorded crime rate	Victimisation experience			
	Non-victim	Victim of personal crime only	Victim of household crime only	Victim of both personal and household crime
Low	0.45	0.70	0.78	0.91
Medium	0.55	0.78	0.84	0.94
High	0.59	0.81	0.86	0.95

of 1.5 and 1.8, respectively) compared with residents of low crime areas.

Persons who had recently migrated from a non-English speaking country were far less likely to perceive a problem than those who had not, with an estimated odds ratio of 0.3. That is, the odds of a person who had *not* recently migrated from a non-English speaking country (i.e. non-migrants or migrants from an English-speaking country or continent such as the UK, Ireland or Northern America) perceiving a problem were 3.4 times those of a person who had recently migrated from a NESB country.

Another group less likely to perceive a problem was persons aged 65 years and over. Compared with the youngest age group (those aged under 25 years), the

odds of this group perceiving a neighbourhood problem was 0.8 (or, conversely, the odds of the youngest age group were 1.3 times that of the oldest age group). Of all age groups, therefore, the oldest group (those aged 65 years and over) were least likely to perceive a problem.

The odds ratios in Table 4 are presented graphically in Figure 1.[10] The results shown in Table 4 and Figure 1 indicate that the experience of crime significantly affects the perception of the existence of a crime or public nuisance problem in the local area. This relationship holds whether the experience of crime is direct, as measured by previous household or personal victimisation, or indirect, as measured by the crime rate in the

respondent's neighbourhood. The relative effects of these variables are further examined in Table 5.

Each cell of Table 5 shows, for males aged 25 to 44 years, the predicted probability of perceiving a neighbourhood problem, for each combination of attributes defined by the rows and columns of the table.[11] These predicted probabilities are calculated using the parameters estimated by the logistic regression model described in this section. For example, a 25 to 44-year old male, who has not recently migrated from an NESB-country, who lives in a low crime area, and who has not recently been a victim of any crime, has an approximate probability of 0.45 of perceiving a neighbourhood problem. (Recall that the estimated proportion of NSW residents who perceived a problem was 53.4% or 0.534.) For a non-victim male of the same age who lives in a high crime area, the probability is 0.59. These probabilities illustrate the positive effect of the crime rate in a person's area of residence on the likelihood of perceiving a neighbourhood problem.

To illustrate the effect of victimisation on the perception of crime, consider the probability of perceiving a problem for a 25 to 44-year old male who, again, resides in an area with a low crime rate, but who has been a victim of a personal crime in the 12 months prior to the survey. The probability of this person perceiving a problem is 0.70 (compared with 0.45 for a non-victim). Similarly, someone whose household has been recently victimised, but who has not recently been a personal victim, has a predicted probability of 0.78 of perceiving a problem. Persons recently subject to both a personal and a household crime, but who are resident in a low crime area, have a very high

Figure 1: Odds ratios (and 95% confidence intervals) for perceiving a neighbourhood crime or public nuisance problem
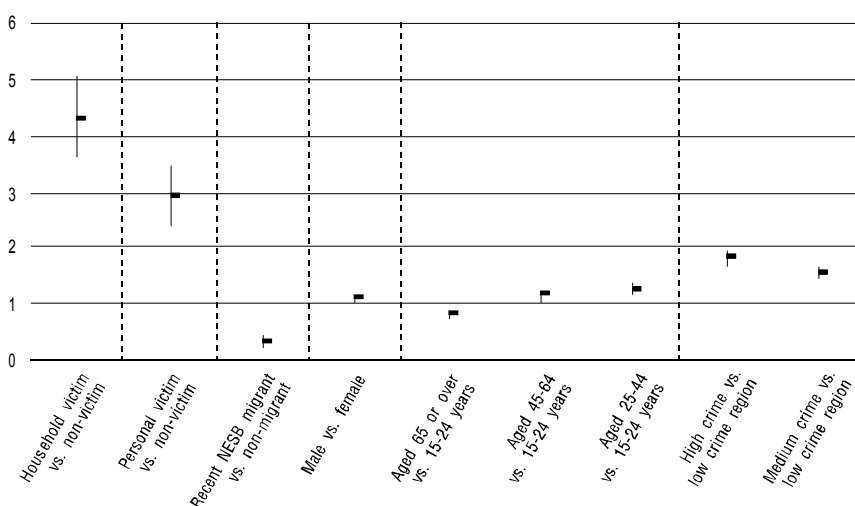
Table 6:   Multivariate logistic regression results for the main problem being a theft crime[a]

Explanatory variable	Significance (p-value)	Odds ratio	95% Confidence interval
Household victim vs. non-victim	< 0.0001	2.0	1.7 - 2.3
Personal victim vs. non-victim	< 0.0001	0.7	0.6 - 0.8
Age group:			
Aged 65 years or over vs. aged 15-24 years	< 0.0001	1.8	1.5 - 2.1
Aged 45-64 years vs. aged 15-24 years	< 0.0001	1.6	1.4 - 1.8
Age 25-44 years vs. aged 15-24 years	< 0.0001	1.6	1.4 - 1.7
Region:			
High crime region vs. low crime region	0.0058	1.1	1.0 - 1.2
Medium crime region vs. low crime region	0.0238	1.1	1.0 - 1.1

[a] The variables representing household type, recent NESB migrant and gender were not significant in the regression.

probability of neighbourhood crime perception – 0.91. This same pattern holds for all levels of neighbourhood recorded crime rates. Clearly, the person who is most likely to perceive a neighbourhood problem (with an estimated probability of 0.95) is one who resides in a high crime neighbourhood, and who has recently been a victim of both a personal and a household crime.

ANALYSIS 2: FACTORS WHICH AFFECT THE PERCEPTION OF A THEFT CRIME AS THE MAIN PROBLEM

In order to identify the variables which influence the main problem of concern for those survey respondents who perceived a neighbourhood crime or public nuisance problem, two logistic regression analyses (again using PC CARP) were performed using the same explanatory variables as in Analysis 1 above.

The categorical response variable used in the first such regression is whether the main problem perceived by respondents was a 'theft' crime (i.e. either of the three responses: housebreaking/burglaries/theft from homes, car theft or other theft) as opposed to one of the other categories of crime specified in the survey.[12] Again, the explanatory variables were included simultaneously in the full model, and excluded by a process of backward elimination (using a decision level of α = 0.05). A summary of the results of this analysis is shown in Table 6.

Only age, and the variables which measured recent victimisation and the crime rate in an area, remained significant in the final model. The variables representing household type, recent NESB migrant and gender were not significant in the regression and were therefore removed from the model.

Respondents who lived in a household that had experienced a household crime over the preceding 12 months were more likely to perceive theft crimes as the main neighbourhood problem than non-victims. The odds of such householders perceiving theft as a main problem were

double the odds for respondents from non-victim households, controlling for all other variables included in the final model.

Victims of personal crime, however, were less likely to perceive theft as the main problem, having an odds of 0.7 compared with non-victims. That is, for non-victims of a recent personal crime, the odds of perceiving theft as the main problem were 1.5 times the odds for recent victims.

Persons aged 25 years and over were more likely than persons aged under 25 years to nominate a theft crime as the

Figure 2:   Odds ratios (and 95% confidence intervals) for main perceived problem being a theft crime
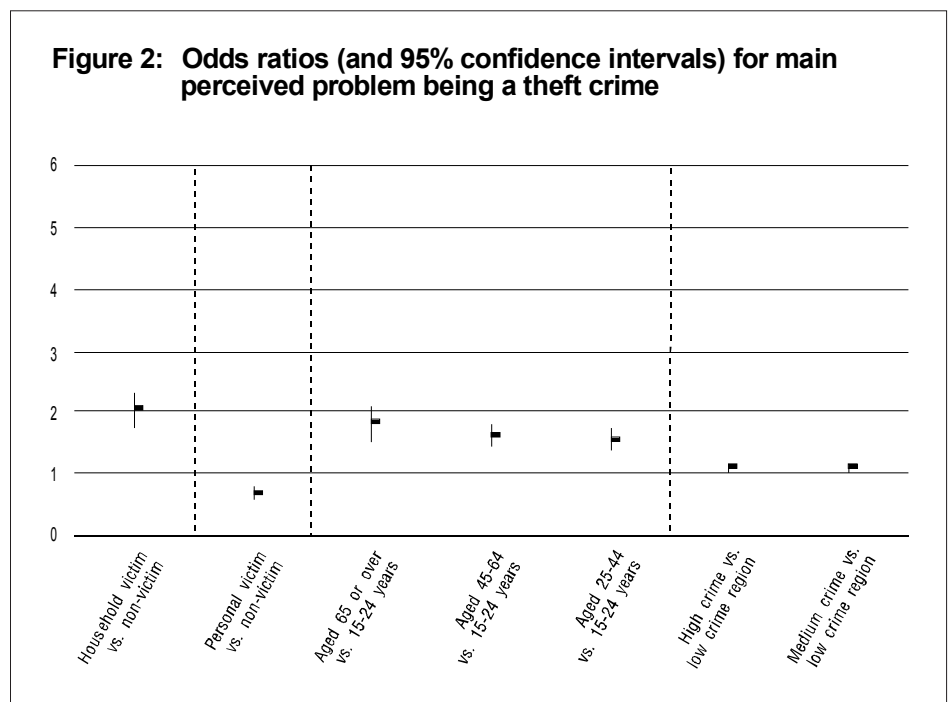
main problem. Compared with the under 25 year age group, the odds of each other age group selecting a theft crime as the main neighbourhood problem were 1.6 for each of the 25 to 44, and 45 to 64 year age groups, and 1.8 for the 65 and over age group.

Persons who resided in medium or high crime areas were more likely than those residing in a low crime area to nominate a theft crime as the main crime problem (odds ratios of 1.1 or 10% higher than the low crime area in each case).

The odds ratios in Table 6 are presented graphically in Figure 2.

ANALYSIS 3: FACTORS WHICH AFFECT THE PERCEPTION OF A DISORDER CRIME AS THE MAIN PROBLEM

The results from another multivariate logistic regression analysis, which aims to identify the variables which influence the main problem of concern for those respondents who perceived a problem, will now be presented. The categorical response variable used in this regression was whether the main problem perceived by respondents was a 'disorder' crime (i.e. either of the three responses: louts/youth gangs, vandalism/graffiti or dangerous/noisy driving) as opposed to one of the other responses specified in the survey. Again, the explanatory variables specified in Analysis 1 were

included simultaneously in the fully specified model and excluded by a process of backward elimination (using a decision level of $\alpha = 0.05$).

A summary of the results of the logistic regression procedure is shown below in Table 7. The reciprocal of the odds ratio (i.e. 1/odds) has also been shown in this table for use in the discussion.

As with the analysis of the perception of a theft crime as the main problem, age and the variables which measured recent victimisation and the crime rate in an area remained significant in the final model. In the present analysis, however, the variable which identified persons who had recently migrated from non-English speaking countries was also found to be statistically significant. The variables representing household type and gender were not significant in the regression and are therefore not present in the reduced model.

Respondents who lived in a household which had experienced a household crime over the preceding 12 months were less likely to perceive disorder crimes as the main neighbourhood problem. The odds of non-victim householders perceiving a disorder crime as the main problem were more than double the odds for respondents from victim households, with an odds ratio of 2.1 (calculated as the inverse of the odds of a household victim compared with a non-victim).

Victims of personal crime were also less likely to perceive a disorder crime as the main problem, having an odds ratio of 0.8 compared with non-victims. That is, for non-victims, the odds of perceiving disorder as the main problem are 1.2 times the odds for recent personal crime victims.

Persons who had recently migrated from a non-English speaking country were significantly less likely to select a disorder problem as the main concern compared with persons not in this category (odds ratio of 0.5). That is, the odds of a person who had not recently migrated from a non-English speaking country considering disorder to be the main neighbourhood problem was about twice the odds of a recent migrant.

Persons aged under 25 years were more likely than persons in any other age group to nominate a disorder crime as the main problem. The odds of the under 25 year age group compared with each other age group in selecting a disorder crime as the main neighbourhood problem were 1.3 compared with each of the 25 to 44 year, and 65 and over age groups, and 1.4 compared with the 45 to 64 year age group.

Respondents residing in a medium or high crime area were more likely than those residing in a low crime area to nominate a disorder crime as the main crime problem (with odds ratios of 1.3 and 1.2, respectively, compared with residents of low crime areas).

Table 7:   Multivariate logistic regression results for the main problem being a crime of disorder[a]

Explanatory variable	Significance (p-value)	Odds ratio	95% Confidence interval	Inverse of odds ratio
Household victim vs non-victim	< 0.0001	0.5	0.4 - 0.6	2.1
Personal victim vs. non-victim	0.0139	0.8	0.7 - 1.0	1.2
Recent NESB migrant vs. non-migrant	0.0135	0.5	0.3 - 0.9	1.9
Age group: Aged 65 years or over vs. aged 15-24 years	0.0006	0.8	1.5 - 2.1	1.3
Aged 45-64 years vs. aged 15-24 years	< 0.0001	0.7	1.4 - 1.8	1.4
Aged 25-44 years vs. aged 15-24 years	< 0.0001	0.8	1.4 - 1.7	1.3
Region: High crime region vs. low crime region	< 0.0001	1.2	1.0 - 1.2	0.9
Medium crime region vs. low crime region	< 0.0001	1.3	1.0 - 1.1	0.8

[a] The variables representing household type and gender were not significant in the regression.

Figure 3: Odds ratios (and 95% confidence intervals) for main perceived problem being a disorder crime
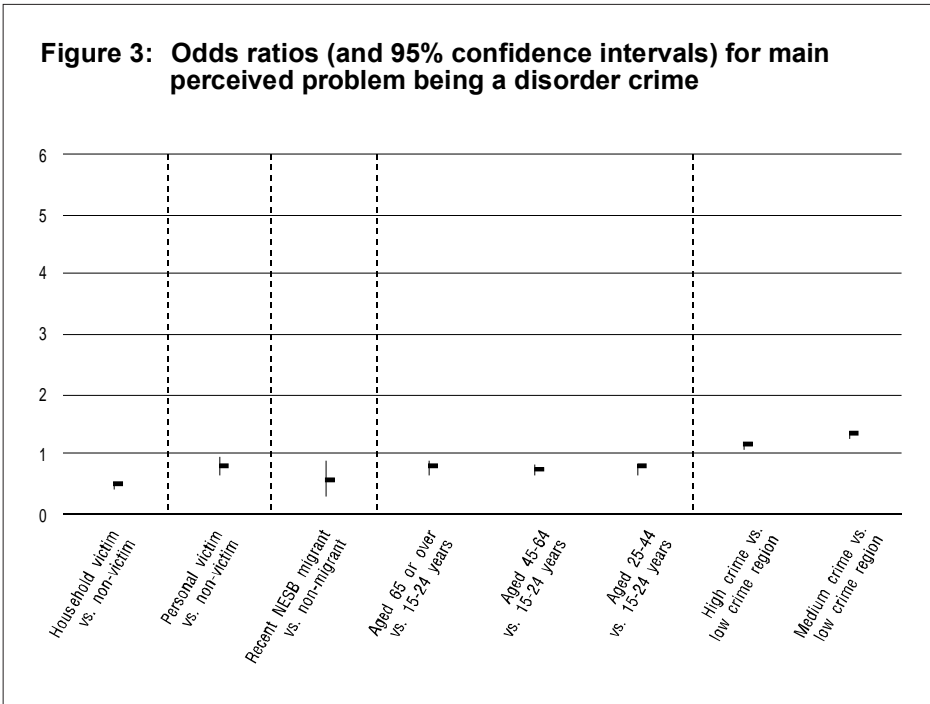
The odds ratios in Table 7 are presented graphically in Figure 3.

SUMMARY

The aggregated regional information presented in Tables 1 to 3 shows that (1) the level of public perception of a neighbourhood crime or public nuisance problem varies across regions of NSW and within Sydney, (2) burglary is most likely to be considered the main problem by residents of all regions, (3) other than burglary, the choice of main perceived problem varies across regions of NSW and within Sydney,[13] (4) the percentage of persons nominating each problem as their main concern shows considerable regional variation,[14] and (5) in many instances, there is a clear relationship between the nature of the perceived problem and the actual level of recorded crime for that offence in the region.

The multivariate analysis results show that (1) females are more likely than males to perceive a problem, (2) persons aged 65 years and over are less likely to perceive a problem than those aged under 25 years, while persons aged between 25 and 65 years are more likely to perceive a problem than the younger age group, (3) recent NESB migrants are less likely to perceive a problem in their neighbourhood than are other residents, (4) persons who have been recent

victims of any crime are more likely than non-victims to perceive a neighbourhood problem, and (5) persons who reside in a neighbourhood with a high or medium crime rate are more likely to perceive a problem than those who reside in a low crime rate area.

The multivariate analysis for theft as the main concern revealed that (1) persons aged 25 years and over are more likely than persons aged under 25 years to nominate a theft crime as the main problem, (2) persons who are recent victims of a household crime are more likely to consider a theft crime to be the main neighbourhood problem, while persons who are recent victims of a personal crime are less likely to consider this the main type of problem, and (3) persons who reside in a neighbourhood with a high or medium crime rate are more likely to perceive a theft crime as the main problem than those who reside in a low crime rate area.[15]

The multivariate analysis used to determine which factors significantly affect the likelihood of perceiving public disorder as the main problem were consistent with the results of the previous analysis. The results of this modelling show that (1) persons aged 25 years and over are less likely than persons aged under 25 years to nominate a disorder

crime as the main problem, (2) persons who have been recent victims of a household crime or a crime against the person are less likely than non-victims to consider a disorder crime to be the main neighbourhood problem, and (3) persons who reside in a neighbourhood with a high or medium crime rate are more likely to perceive a disorder crime as the main problem than those who reside in a low crime area.

ACKNOWLEDGEMENTS

NOTES

1   Australian Bureau of Statistics 1996, *Crime and Safety, New South Wales, April 1996*, Cat No. 4509.1, ABS, Sydney and Australian Bureau of Statistics 1995, *Crime and Safety, New South Wales, April 1995*, Cat No. 4509.1, ABS, Sydney.

The 1995 and 1996 Crime and Safety Surveys included three questions about neighbourhood crime perception. The first question asked *Do you think there are any problems from crime or people creating a public nuisance in your neighbourhood?* For this question, a yes/no answer was chosen by the respondent. Persons who answered in the affirmative proceeded to the next two questions. No further information on neighbourhood crime perception was requested of persons who responded in the negative. The second crime perception question asked respondents to identify the particular neighbourhood problems they perceived by checking the boxes corresponding to any (or all) of a number of specified problems, including: *housebreakings/ burglaries/theft from homes, car theft, louts/ youth gangs, prowlers/loiterers, vandalism/ graffiti, dangerous/noisy driving, illegal drugs, sexual assault, other assault* and *problems with neighbours/domestic problems*. The third question asked respondents to select from the list in the previous question what he or she considered to be the *main* problem. Responses to the first and third questions will be analysed in this bulletin.

2   In the 1995 survey, information was sought from approximately 12,900 persons, of whom about 10,300 (79.9%) responded, and in 1996 information was sought from approximately 13,000 persons, of whom about 10,000 (77.0%) responded. Respondents for both surveys were aged 15 years and over.

3   These tables contain population estimates which are calculated by the ABS. The ABS also provides estimates of the sampling error associated with these survey point estimates. These are used to test hypotheses about the equality of the estimated proportions.

4   NSW Bureau of Crime Statistics and Research 1997, *NSW Recorded Crime Statistics 1996*, NSW Bureau of Crime Statistics and Research, Sydney.

Note that only the 1996 recorded crime figures have been used for comparison with perceived crime in this bulletin. As 1995 was the first full year of reporting under the new Computerised Operational Policing System, there may have been some undercounting during this period.

5   The definition of a robbery incident before 1996 differs from that in more recent surveys and is likely to include incidents which were more correctly classified as attempted robbery or assault in the later surveys. The analyses in this study are based on this earlier definition of robbery.

6   This category includes persons who arrived from 1993 onwards for the 1995 survey, and from 1994 onwards for the 1996 survey, from Europe and the former USSR and Baltic States (excluding UK/Ireland), Africa and the Middle East, Asia, South and Central America and the Caribbean.

7   The regions were classified into high, medium and low crime areas according to 1996 recorded crime figures, based largely on the relative break and enter–dwelling rates. Where the distinction was not clear across regions, 1996 recorded motor vehicle theft and 1997 break and enter–dwelling statistics were also taken into consideration. The SSDs within Sydney and SDs elsewhere in NSW were ranked and then divided into three approximately equal-sized groups.

8   Although not found to be significant in any of the multivariate models, this variable was included in this format because of preliminary univariate results. Statistical tests found that persons in households with children (single parent or couple) are significantly *more* concerned about a neighbourhood problem than are persons living alone or with a partner. There is no significant difference in the perception of a crime problem between single parent households and a couple with children. These results suggest a 'children' factor in differences in neighbourhood crime perception. A further statistical test was performed to compare households with and without children. Overall, 51.4 per cent of respondent households without children perceived a neighbourhood problem, compared with 56.7 per cent of households with children. This difference was statistically significant.

9   Linear and non-linear multivariate statistical techniques such as logistic regression implemented in most standard statistical packages are based on the assumption of independently and identically distributed observations, or equivalently the sample being selected by simple random sampling with replacement. This assumption is not valid with the Crime and Safety Survey which employed a multistage stratified cluster sample design as well as a complex estimation procedure. The PC CARP software package employed in this research is designed specifically for analysis of data from complex surveys. Both the sample design and sample weights are incorporated in the estimation of the logistic regression coefficients.

For detailed user information, see: Statistical Laboratory, Iowa State University 1989, *PC CARP*, Iowa State University, Ames, IA.

10   Note that in this figure, and in the odds ratio plots which follow, factors which show an interval below the horizontal line at '1' are less likely to have the response category coded '1' than the reference category for that variable, while those which are above are more likely to have this response (in this case, the response category coded '1' is the perception of a neighbourhood crime or public nuisance problem).

11   The male gender is used because this is the reference category for the gender variable in the model. Males aged 25-44 years were chosen as the reference group for this table because this is the most populous of the age categories.

12   For the full list of response categories, see Note 1 or Table 2.

13   For example, while dangerous/noisy driving is the second most frequently nominated main problem in NSW and Sydney overall, the relative proportion of residents choosing this, rather than burglary, as the main problem varies between regions. To illustrate, 52.4% and 14.3% of residents nominated burglary and dangerous/noisy driving, respectively, in Inner Western Sydney, compared with 27.3% and 24.1% in Gosford-Wyong.

14   For example, the proportion of residents of Inner Western Sydney who perceived burglary as the main problem is almost double that of the Northern Beaches.

15   When the latter two factors are considered simultaneously, however, it can be seen that the crime rate has relatively less influence over the choice of theft as a main problem, compared with victimisation status (see Table N1 below). This confirms the results in Table 6, where the odds ratios for region are close to (though significantly different from) unity.

16   The relationship between the latter two variables is shown in Table N2 below.

Table N1:   Probability of perceiving a theft main problem (for person aged 25-44 years): Effect of victimisation experience and recorded crime rate in area of residence

	Victimisation experience		
Recorded crime rate	**Victim of personal crime only**	**Non-victim**	**Victim of household crime only**
Low	0.31	0.41	0.58
Medium	0.33	0.43	0.62
High	0.33	0.43	0.50

Table N2:   Probability of perceiving a disorder main problem (for non-migrant person aged 25-44 years): Effect of victimisation experience and recorded crime rate in area of residence

	Victimisation experience			
Recorded crime rate	**Non-victim**	**Victim of personal crime only**	**Victim of household crime only**	**Victim of both personal and household crime**
Low	0.38	0.33	0.22	0.19
Medium	0.44	0.39	0.27	0.23
High	0.48	0.36	0.25	0.21

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